Town of Thompson's Station
Municipal Planning Commission
Meeting Agenda
September 22, 2020

Meeting Called To Order

Statement By Chair Relating To Conducting The Planning Commission Meeting By Electronic Means Of Due To COVID-19 State Of Emergency

Documents:

INTRODUCTION STATEMENT FOR TS PC SEP 22 2020.PDF

Minutes-

Consideration Of The Minutes Of The July 28th, 2020 Meeting

Documents:

JULY 2020 MINUTES.PDF

Public Comment

Any citizen desiring to make a comment can submit their written comments to the Town, which will be included in the meeting minutes for public perusal.

Email your comments to Town Hall at INFO@THOMPSONS-STATION.COM with September Planning Commission Public Comments as the Subject Line.

Contact the Town Community Development office with any questions at (615) 794-4333 ext. 12.

Planner Report

- Update on the Dedication of Public Improvements and Release of Sureties Policy
- Administrative Plat Approval for 1738 & 1726 Old Thompson's Station Road (existing lot line revision)
- Virtual PC Training 11-13-20

New Business:

1. Pleasant Creek Preliminary Plat For The Creation Of 412 Residential Lots, Four Commercial Lots, And Associated Open Space Located Along Lewisburg Pike (Map 154 Parcel 50).

Additional Information to be provided relating to the Preliminary Plat.

Documents:

PLEASANT CREEK PRELIM PLAT PC STAFF REPORT.PDF
PLEASANT CREEK PRE PLAT 20.09.02.PDF
PLEASANT CREEK TIS - 090320 - FINAL.PDF
PLEASANT CREEK OPEN SPACES CONCEPT 9.11 REDUCED.PDF

2. Reschedule November Planning Commission Meeting From 11/24/20 To 11/17/20 Due To Thanksgiving.

Adjourn

This meeting will be held remotely due to the COVID-19 Public Health Emergency and will be live streamed at 7:00 p.m. via our website www.thompsons-station.com

STATEMENT FOR THE RECORD AT START OF MEETING
Thompson's Station Planning Commission

Hello and welcome to this the September 22nd, 2020, Planning Commission meeting for the Town of Thompson's Station.

Pursuant to the Guidance from the Office of the Comptroller for the State of Tennessee and in accordance with Governor Lee's Executive Order # 60 (which was previously extended by Executive Order # 16, 34, and 51) due to the treatment and containment of COVID-19.

This Town of Thompson's Station Planning Commission meeting, with notice, is being held virtually and being recorded to protect the public health, safety, and welfare of the Citizens of Thompson's Station in light of the coronavirus and to continue to allow the Town to function and operate.

Further, it is the desire of the Planning Commission to include this determination in the minutes for this meeting.

We understand that we, the Thompson's Station Planning Commission, serves the Town of Thompson's Station, which is why we are currently recording this virtual meeting, broadcasting it live for public viewing, and uploading and preserving it for future viewing.

Minutes of the Meeting
of the Municipal Planning Commission
of the Town of Thompson 's Station, Tennessee
July 28, 2020

Call to Order:
The meeting of the Municipal Planning Commission of the Town of Thompson's Station was called to order at 7:00 p.m. on 28th day of July 2020 via electronic means under the authority of the Governor's Executive Order related to public meetings during the COVID-19 emergency with the required quorum.

The following statement was read by Planning Chairman Trent Harris:

This meeting is being conducted pursuant to the Guidance from the Comptroller's Office, and in accordance with Governor Lee's Executive Order No. 16 due to the treatment and containment of COVID-19.

This regular monthly meeting for July of 2020 is being held by video conference with the Planning Commission of Thompson's Station and live streamed, as necessary to protect the public's health, safety, and welfare in light of the coronavirus. Further it is requested that the governing body include this determination in the minutes for this meeting.

We understand, we the members of the Planning Commission serve at the pleasure of the citizens of Town of Thompson's Station, and due to the current situation, is why we are currently live streaming this meeting for the benefit of the public, through our website.

A recording of this meeting will be available on the Town of Thompson's Station's web site at *thompsons-station.com* within 24 hours of this meeting.

Members and staff virtually present were: Chairman Trent Harris; Commissioner Luis Parra; Commissioner Sheila Shipman; Commissioner Tara Rumpler; Commissioner Kreis White; Commissioner Bob Whitmer; Interim Town Planner Micah Wood; IT Coordinator Tyler Rainey and Town Attorney Andrew Mills. Alderman Shaun Alexander and Planning Technician Jennifer Jones were unable to attend.

Minutes:

The minutes of the June 23, 2020 regular meeting were presented.

Commissioner Shipman made a motion to approve the June 23, 2020 meeting minutes.

Roll Call Vote:

	VOTE		VOTE		VOTE
Chairman Harris	Yea	Commissioner Parra	Yea		
Commissioner Shipman	Yea	Commissioner Rumpler	Yea	Commissioner White	Yea
Commissioner Whitmer	Yea				

Yea 6 Nay 0 Abstain 0

Public Comment:
None.

Town Planner Report:

None.

New Business:

1. **Item 1 (FP 2020-005), Tollgate Village Subdivision Final Plat – Section 20 for the creation of 1 new commercial lot.**

Mr. Wood reviewed his staff report and recommends the Planning Commission approve the final plat, with the following contingency:

Along with the submittal of any site plans for each lot, the owner/applicant shall confirm with the Town that the building square footage and proposed uses match with the sewer taps allocated for this section of Tollgate

After discussion, Commissioner White made a motion to approve Item 1, (FP 2020-005), Tollgate Village Subdivision Final Plat – Section 20 for the creation of 1 new commercial lot with the Staff recommended

Roll Call Vote:

	VOTE		VOTE		VOTE
Chairman Harris	Yea	Commissioner Parra	Yea		
Commissioner Shipman	Yea	Commissioner Rumpler	Yea	Commissioner White	Yea
Commissioner Whitmer	Yea				

Yea 6 Nay 0 Abstain 0

There being no further business, the meeting was adjourned at 7:10 p.m.

_____
Trent Harris, Chairman

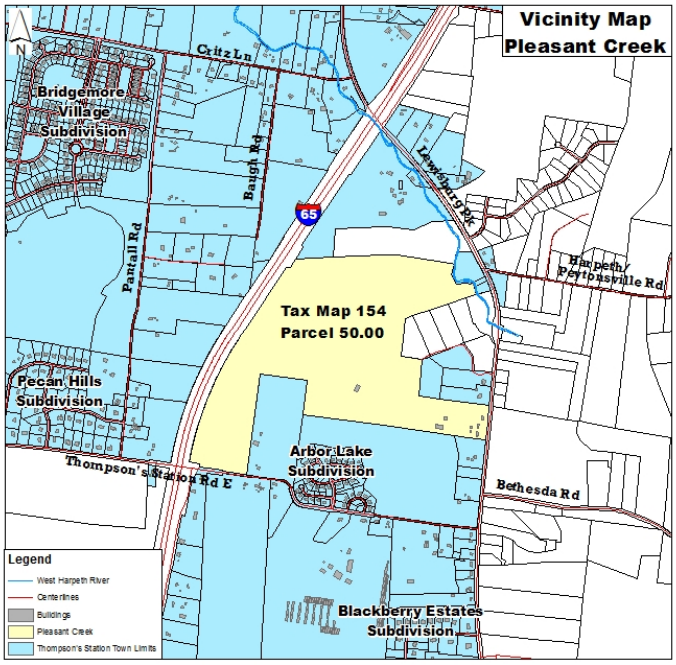
Attest:

_____
Shaun Alexander, Secretary

Thompson's Station Planning Commission
Staff Report – Item 1 (PP 2020-004)
September 22, 2020

PROJECT DESCRIPTION

Pleasant Creek Investments, LLC, submitted a request for a preliminary plat for a multi-phase project which will 149 single family lots, 263, attached single family lots, 4 commercial lots, and associated open space lots. The tree removal plan, provided as an exhibit to the preliminary plat, includes the removal of trees for a total of 2,308 inches.



ANALYSIS

Site Design and Layout

The development is located within the TC zone, which includes a variety of Transect Zones to achieve the applicant's desired community mix within this subdivision. The site design has evolved slightly since the Concept Plan was present to the Planning Commission in June. This includes refinement of the open space areas to provide additional detail. Additional refinement of the overall development of the subdivision is to be expected as the construction plans and final plats are provided.

Per section 5.3.4(c) of the LDO, the approval of the Preliminary Plat in a TC zone establishes the specific zoning districts from the transect zones. This development will include a mix T1/T2 for open space areas, T3 for residential single family detached, T4 for residential single family attached, and T5 for commercial or mixed-use development, as permitted in a T5 zone. The single family detached homes have a 65' x 130 typical lot, while the attached single family includes a range of 20' – 40' x 130' lots. The proposed typical lots conform to the LDO standards for T3 and T4 zones.

Roadways
The standard for local roadways is 50 feet. Three new roads are proposed and will have at least a 50-foot right-of-way and the required sidewalks. Additional reviews of the roadways will occur as part of the construction plan process.

Open Space/Amenities
Open space is provided in a mix of styles under the Civic Space Types, required by the LDO. Open space of 47% is provided, consistent with LDO requirements. The LDO requires that neighborhoods with greater than 50 lots incorporate one of the following amenities: children's playground, swimming pool with amenities center, passive recreation areas, and trails throughout the open space where feasible. The amenity center and other proposed trails/recreations areas fulfill this requirement. The applicant has provided additional information on the development of the open space areas as exhibits to the plat.

Trees
Development of site, as proposed, will result in the removal of a total of 2,308 inches. The LDO requires the replacement of trees 18 inches and greater at a ratio of one and a half inches for every inch removed. The landscape plans submitted with the construction plans will include detailed landscaping and plating details for each section to account for all replacement requirements.

Traffic Study
A traffic study was submitted and reviewed by the Town's traffic engineer. A revised traffic study was submitted to the Town and has been reviewed by the traffic engineer. All recommended mitigation shall be incorporated into the development agreement and the construction plans for this subdivision.

Utilities
The BOMA approved a MOU for the installation of a bio-clere system for wastewater treatment at the 6-9-20 meeting. This wastewater treatment system will provide the sewer services for this subdivision. The Town will assume responsibility for the wastewater system per the terms of the approved MOU.

RECOMMENDATION

Staff recommends approval with the following contingencies:

1. The applicant shall set a pre-application meeting with Town Staff prior to the submittal of the constructions plans for this development.
2. Prior to the approval of construction plans, the developer shall enter into a development agreement for the project.
3. Prior to the approval of construction plans, the developer shall obtain any necessary permits through the Tennessee Department of Environment and Conservation.
4. Prior to the approval of construction plans, all applicable codes and regulations shall be addressed to the satisfaction of the Town Engineer.
5. Prior to the submittal of the first final plat for this subdivision, a copy of the CCRs shall be submitted for Town review.

6. Any signage proposed for the subdivision shall comply requirements set forth within the Land Development Ordinance and shall be located within the open space and maintained by the homeowner's association.
7. Streetlights shall be incorporated in accordance with the Land Development Ordinance and shall be documented on the construction drawings.
8. All recommendations within the traffic study shall be completed.
9. Any change of use or expansion of the project site shall conform to the requirements set forth within the Land Development Ordinance and shall be approved prior to the implementation of any changes to the project.

ATTACHMENTS
Preliminary Plat
Traffic Study
Open Space Exhibits

Owner/Developer:
Pleasant Creek Investments, LLC
John Y. Franks Managing Member
Suite 230, 144 Southeast Parkway
Franklin, TN 37067
615-567-4420
johnfranks@live.com

Landscape Architect:
Paul A. Lebovitz, Landscape Architect
102 Winslow Road
Franklin, Tennessee 37064
615-415-6855
pleb@bellsouth.net

Project Engineer:
SITE ENGINEERING CONSULTANTS, INC.
RICHARD HOUZE, P.E.
850 MIDDLE TENNESSEE BLVD.
MURFREESBORO, Tennessee 37129
615-890-790
RHOUZE@SED-CIVIL.COM

Surveyor:
Tom King, RLS
Hyde Park Homes, LLC
Suite 230, 144 Southeast Parkway
Franklin, Tennessee 37067
615-238-4958
tomgking3@gmail.com

GeoTechnical Engineer:
American Geotechnical,
Bob Stickney
2712 Reams Place
Franklin, TN 37064
615-791-9768
bobstickney@comcast.net

Hydrology:
Grow Environmental Solutions
Tony Grow
1406 Wilson Avenue
Tullahoma, Tennessee 37388
931-273-4681
tony@growenv.com

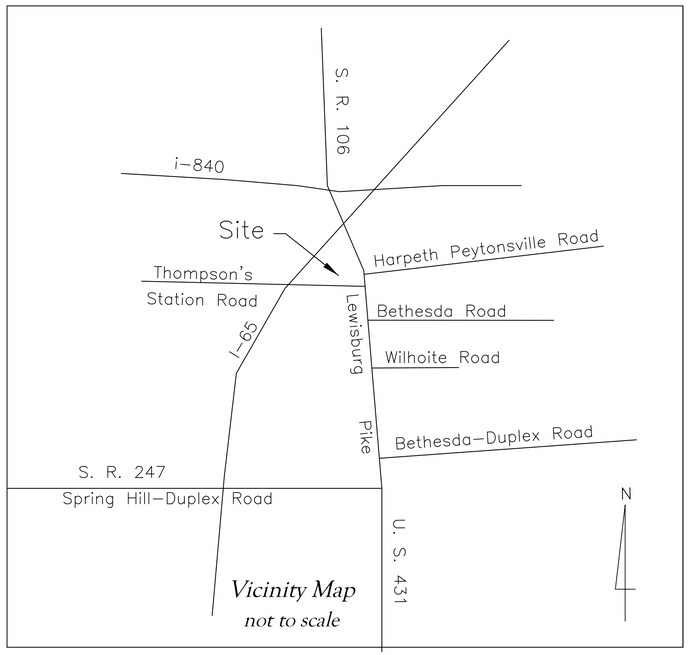
PLEASANT CREEK

(TRANSECT VILLAGE)

PRELIMINARY PLAT

TOWN
of
THOMPSON'S STATION, TENNESSEE

1952 LEWISBURG, PIKE
MAP 154 PARCEL 50



Vicinity Map
not to scale

Mayor:
Corey Napier

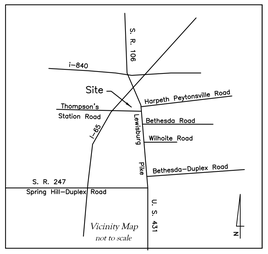
Aldermen:
Shaun Alexander
Brandon Bell
Ben Dilks
Brian Stover

Thompsons Station
Planning Administrator:
Micah Wood
615-794-4333 Ext. 12
mwood@thompsons-station.com

TABLE OF CONTENTS:

1 Cover Sheet
2 Over All Preliminary Plat
3 Data Sheet
4 -12 Preliminary Plat Sheets
13 Lot Area Table & Curve Data
14 Detail
15 Civic Space 1 - Multi-Use Square
16 Civic Space 2 - Formal Square
17 Civic Space - Ramble+Playground
18 Civic Space 4 - Undeveloped Wooded Area
19 Civic Space 5 - Recreational Pool Park
20 Civic Space 6 - Athletic Complex
21 Street Buffer Yard
22 Tree Removal Plan

Date of Drawings: 9/02/2020

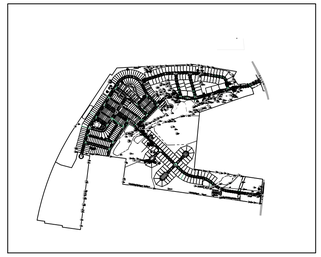


TOTAL CENTLINE ROAD	18,245 Linear Feet
TOTAL CENTLINE ALLEY	2,987 Linear Feet

0 200 400 600

SURVEY NOTES:

1. SURVEYOR'S LIABILITY FOR THE DOCUMENT SHALL BE LIMITED TO THE ORIGINAL PURCHASER AND DOES NOT EXTEND TO ANY UNNAMED PERSON OR ENTITIES WITHOUT AN EXPRESSED RE-CERTIFICATION BY WHOSE SIGNATURE APPEARS UPON THE SURVEY.
2. PARCEL NUMBERS SHOWN THUS (00) REFER TO WILLIAMSON COUNTY TAX MAP 154 PARCEL 50.
3. ALL DISTANCES WERE MEASURED WITH E.D.M. AND GPS EQUIPMENT AND HAVE BEEN ADJUSTED FOR TEMPERATURE.
4. THE PROPERTY DOES NOT LIE WITHIN THE 100 YEAR FLOOD PLANE AND ARE DETERMINED TO BE IN ZONE X AS PER FIRM PANEL NUMBER 47187C0305F, DATED 09-29-06.
5. THIS SURVEYOR WAS NOT PROVIDED WITH A TITLE COMMITMENT. THEREFORE SUBJECT TO THE FINDINGS OF A DETAILED TITLE SEARCH.
6. PRIOR TO ANY CONSTRUCTION, EXCAVATION OR ANY DISTURBANCE OF THE EXISTING GROUND ELEVATION, THE OWNER AND/OR CONTRACTOR SHOULD ASSUME RESPONSIBILITY OF CONTACTING THE LOCAL UTILITY AUTHORITIES FOR EXACT LOCATION OF UNDERGROUND GAS LINES, TELEPHONE AND ELECTRIC CABLES AND WATER LINES ETC., TO AVOID ANY HAZARD OR CONFLICT. IN TENNESSEE, IT IS A REQUIREMENT, PER THE UNDERGROUND UTILITY DAMAGE PREVENT ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN THREE (3) NOR MORE THAN TEN (10)WORKING DAYS PRIOR TO THE DATE OF EXCAVATION AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 1-800-366-1987.
7. PROPERTY DATA TAKEN FROM DEED OF RECORD AND DEEDS FROM ADJOINING PROPERTIES AS NOTED CURRENT DEED OF RECORD FOR PARCEL 40 BEING RECORDED IN DEED BOOK 6584 PAGE 127 REGISTER OFFICE WILLIAMSON COUNTY TENNESSEE.
8. EASEMENT GRANTED TO AT&T CABLE OF RECORD IN BOOK 552, PAGE 179 R.O.W.C.T.
9. UTILITIES SHOWN WERE TAKEN FROM FIELD LOCATIONS THAT WERE APPARENT AND COPIED FROM APPROPRIATE GOVERNING AGENCIES MAPS ARE APPROXIMATE AT BEST. THERE MAY BE UTILITIES, THE EXISTENCE OF WHICH ARE UNKNOWN TO THE SURVEYOR.
11. ALL SIDEWALKS, OPEN SPACE, STREET TREES AND DRAINAGE IMPROVEMENT TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.
12. ALL OPEN SPACE MAY BE USED AS PUBLIC UTILITY AND DRAINAGE EASEMENT FOR THIS PROJECT. ALL OPEN SPACE AND MEDIANS TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.



SITE DATA

PROJECT NAME: PLEASANT CREEK
LOCATION: PARCEL 50, TAX MAP 154
ZONING: TRANSECT
COMMUNITY TYPES: T1, T2, T3, T4, T5
TOTAL SITE AREA: +/-177.95 AC
TOTAL PROPOSED HOMES: 412
149 SINGLE FAMILY LOT 65' X 130' (TYPICAL)
263 ATTACHED SINGLE FAMILY LOT 20'-40' X 130' (TYPICAL)
TOTAL COMMERICAL LOTS: 4
TOTAL OPEN SPACE: 47%
84.28 / 177.95 = 0.47%

AREA CHART

SINGLE FAMILY LOT AREA	33.34
MULTI FAMILY LOT AREA	28.69
COMMERICAL LOT AREA	7.85
OPEN SPACE	60.10
TOWN / DRIP AREA	24.18
RIGHTS OF WAY	23.79
TOTAL AREA	177.95

LINE	BEARING	DISTANCE
L1	N82°11'15"W	405.98'
L2	N07°48'45"E	35.00'
L3	N82°11'15"W	400.00'
L4	N07°48'45"E	40.00'
L5	N82°11'15"W	172.00'

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

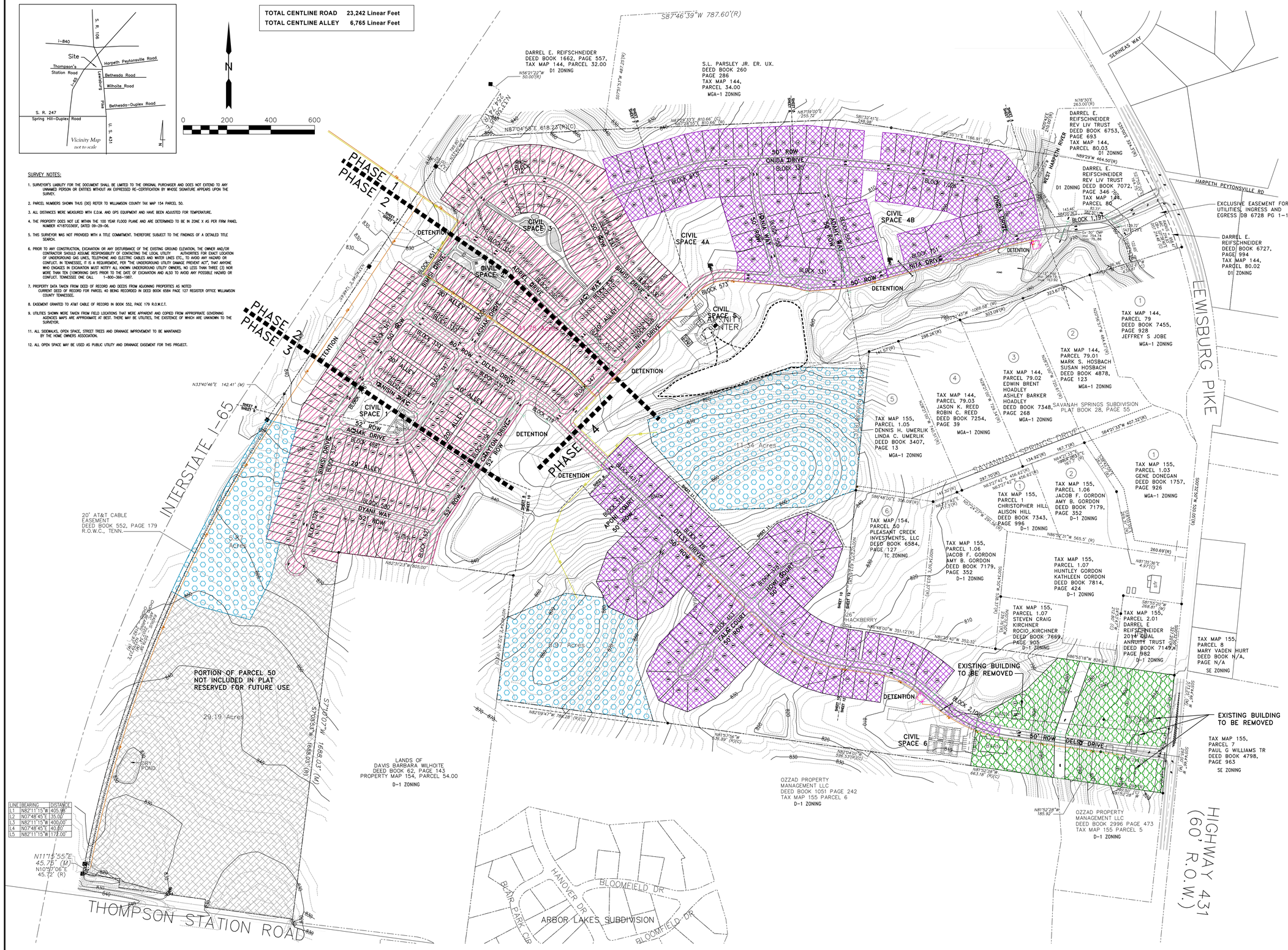
PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

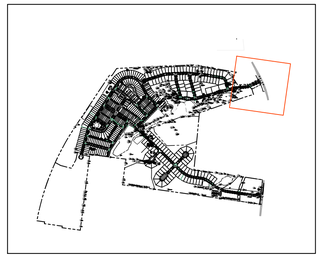
TOTAL CENTLINE ROAD	23,242 Linear Feet
TOTAL CENTLINE ALLEY	6,765 Linear Feet

SURVEY NOTES:

1. SURVEYOR'S LIABILITY FOR THE DOCUMENT SHALL BE LIMITED TO THE ORIGINAL PURCHASER AND DOES NOT EXTEND TO ANY UNNAMED PERSON OR ENTITIES WITHOUT AN EXPRESSED RE-CERTIFICATION BY WHOSE SIGNATURE APPEARS UPON THE SURVEY.
2. PARCEL NUMBERS SHOWN THUS (00) REFER TO WILLIAMSON COUNTY TAX MAP 154 PARCEL 50.
3. ALL DISTANCES WERE MEASURED WITH E.D.M. AND GPS EQUIPMENT AND HAVE BEEN ADJUSTED FOR TEMPERATURE.
4. THE PROPERTY DOES NOT LIE WITHIN THE 100 YEAR FLOOD PLANE AND ARE DETERMINED TO BE IN ZONE X AS PER FIRM PANEL NUMBER 47187C0336F, DATED 09-29-06.
5. THIS SURVEYOR WAS NOT PROVIDED WITH A TITLE COMMITMENT. THEREFORE SUBJECT TO THE FINDINGS OF A DETAILED TITLE SEARCH.
6. PRIOR TO ANY CONSTRUCTION, EXCAVATION OR ANY DISTURBANCE OF THE EXISTING GROUND ELEVATION, THE OWNER AND/OR CONTRACTOR SHOULD ASSUME RESPONSIBILITY OF CONTACTING THE LOCAL UTILITY AUTHORITIES FOR EXACT LOCATION OF UNDERGROUND GAS LINES, TELEPHONE AND ELECTRIC CABLES AND WATER LINES ETC., TO AVOID ANY HAZARD OR CONFLICT. IN TENNESSEE, IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENT ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS, NO LESS THAN THREE (3) NOR MORE THAN TEN (TOWORKING DAYS PRIOR TO THE DATE OF EXCAVATION AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 1-800-366-1987.
7. PROPERTY DATA TAKEN FROM DEED OF RECORD AND DEEDS FROM ADJOINING PROPERTIES AS NOTED CURRENT DEED OF RECORD FOR PARCEL 40 BEING RECORDED IN DEED BOOK 6084 PAGE 127 REGISTER OFFICE WILLIAMSON COUNTY TENNESSEE.
8. EASEMENT GRANTED TO AT&T CABLE OF RECORD IN BOOK 552, PAGE 179 R.O.W.C.T.
9. UTILITIES SHOWN WERE TAKEN FROM FIELD LOCATIONS THAT WERE APPARENT AND COPIED FROM APPROPRIATE GOVERNING AGENCIES MAPS ARE APPROXIMATE AT BEST. THERE MAY BE UTILITIES, THE EXISTENCE OF WHICH ARE UNKNOWN TO THE SURVEYOR.
11. ALL SIDEWALKS, OPEN SPACE, STREET TREES AND DRAINAGE IMPROVEMENT TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.
12. ALL OPEN SPACE MAY BE USED AS PUBLIC UTILITY AND DRAINAGE EASEMENT FOR THIS PROJECT.


S87°46'39"W 787.60'(R)
DARREL E. REIFSCHNEIDER
DEED BOOK 1662, PAGE 557,
TAX MAP 144, PARCEL 32.00
D1 ZONING
S.L. PARSLEY JR. ER. UX.
DEED BOOK 260
PAGE 286
TAX MAP 144,
PARCEL 34.00
MGA-1 ZONING
N87°04'58"E 618.23'(R)(C)
PHASE 1
PHASE 2
PHASE 3
PHASE 4
DETENTION
CIVIL SPACE 1
CIVIL SPACE 2
CIVIL SPACE 3
CIVIL SPACE 4A
CIVIL SPACE 4B
CIVIL SPACE 5
CIVIL SPACE 6
11.34 Acres
8.9 Acres
29.19 Acres
PORTION OF PARCEL 50
NOT INCLUDED IN PLAT
RESERVED FOR FUTURE USE
DRY POND
50' ROW ONIDA DRIVE BLOCK 320'
BLOCK 575'
BLOCK 1,02'
BLOCK 1,19'
BLOCK 75'
BLOCK 311'
NITA DRIVE
BIMINI DRIVE
ACHAK DRIVE
DESLY DRIVE
DYANI WAY
CRATON DRIVES
FALSE COURT
APON COURT
BLOCK 188'
BLOCK 580'
BLOCK 162'
BLOCK 210'
BLOCK 347'
BLOCK 450'
BLOCK 525'
BLOCK 148'
BLOCK 150'
BLOCK 210'
BLOCK 2,10'
BLOCK 2,11'
BLOCK 2,12'
BLOCK 2,13'
BLOCK 2,14'
BLOCK 2,15'
BLOCK 2,16'
BLOCK 2,17'
BLOCK 2,18'
BLOCK 2,19'
BLOCK 2,20'
BLOCK 2,21'
BLOCK 2,22'
BLOCK 2,23'
BLOCK 2,24'
BLOCK 2,25'
BLOCK 2,26'
BLOCK 2,27'
BLOCK 2,28'
BLOCK 2,29'
BLOCK

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED



LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire —E—
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer —ST—
Sanitary Sewer —SA—
Water —W—
Fire Hydrant FH

0 50 100 150

HARPETH PEYTONSVILLE ROAD

SERINEAS WAY

U.S. 431 STATE ROUTE 105

LEWISBURG PIKE

HARPETH WOODS
SECTION 1

TAX MAP 144P
Group A
PARCEL 1
CONNIE S RICE
ALLEN RICE
DEED BOOK 6573,
PAGE 267

TAX MAP 144
PARCEL 37
KING LAND
INVESTMENTS LLC
DEED BOOK 7864,
PAGE 611

TAX MAP 144
PARCEL 76
JASON WAGNER
DEED BOOK 6276,
PAGE 102

INTERSECTION ALIGNMENT TO
BE ADJUSTED TO FINAL TRAFFIC
STUDY

S35°00'E 324.3'(R)

S27°55'20"E
164.75'

RADIUS = 958.47'
ARC = 214.93'
CB= S21°38'40"E
DIST 214.48' (C)

DARREL E.
REIFSCHNEIDER
DEED BOOK 6727,
PAGE 994
TAX MAP 144,
PARCEL 80.02

EXCLUSIVE EASEMENT FOR
UTILITIES, INGRESS AND
EGRESS DB 6728 PG 1-10

DARREL E.
REIFSCHNEIDER
REV LIV TRUST
DEED BOOK 6753,
PAGE 693
TAX MAP 144,
PARCEL 80.03

N78°30'E
263.00'(R)

N89°29'W 464.50'(R)

DARREL E.
REIFSCHNEIDER
REV LIV TRUST
DEED BOOK 7072,
PAGE 346
TAX MAP 144,
PARCEL 80

S43°45'29"E 129.72'

122.65'

S16°52'46"E

TAX MAP 144,
PARCEL 79
DEED BOOK 7455,
PAGE 928
JEFFREY S JOBE

WEST HARPETH RIVER

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

VISTA DRIVE 50'RW

82.77'

S82°50'12"E

143.46'

N84°00'56"E

Lx 30" CMP
Invi 754.74
Invo 75.86

GREATER THAN
25% SLOPE

S73°01'
438.

N20°56'

DAVIS BARBARA WILHOITE
DEED BOOK 62, PAGE 143
PROPERTY MAP 154, PARCEL 54.00

GREATER THAN
25% SLOPE

N05°42'E
210.00'(R)

S26°45'28"E
45.53'

S35°00'10"E
288.92'

TAX MAP 144,
PARCEL 79.01
MARK S. HOSBACH
SUSAN HOSBACH
DEED BOOK 4878,
PAGE 123

SHEET 4
SHEET 5

MATCH LINE SHEET 5

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

21SHEET 4 OF 22

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

MATCH LINE SHEET 4

SHEET 5

S85°35'11"E 1186.91' (R)

S.L. PARSLEY JR. ER. UX.
DEED BOOK 260
PAGE 286
TAX MAP 144,
PARCEL 34.00
MGA-1 ZONING

ONIDA DRIVE 50'RW

NITA DRIVE 50'RW

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

10' PUDE

BUILDING SETBACK LINES SEE DETAIL

DETENTION

25'

NATURAL RESOURCE EASEMENT MEASURED 25'OFF TOP OF BANK

78' RW
24'

CIVIL SPACE 4B

ADAHY WAY 50'RW

S81°32'41"E 248.98'

N87°39'00"E 255.72'

S70°51'45"W 1066.58' (M)

323.67'(R)

303.09'(R)

790

780

298.26'(R)

141.57'(R)

GREATER THAN 25% SLOPE

15%-25% SLOPE

MATCH LINE SHEET 6

SHEET 5
SHEET 6

LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer ST
Sanitary Sewer SA
Water W
Fire Hydrant FH

0 50 100 150

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

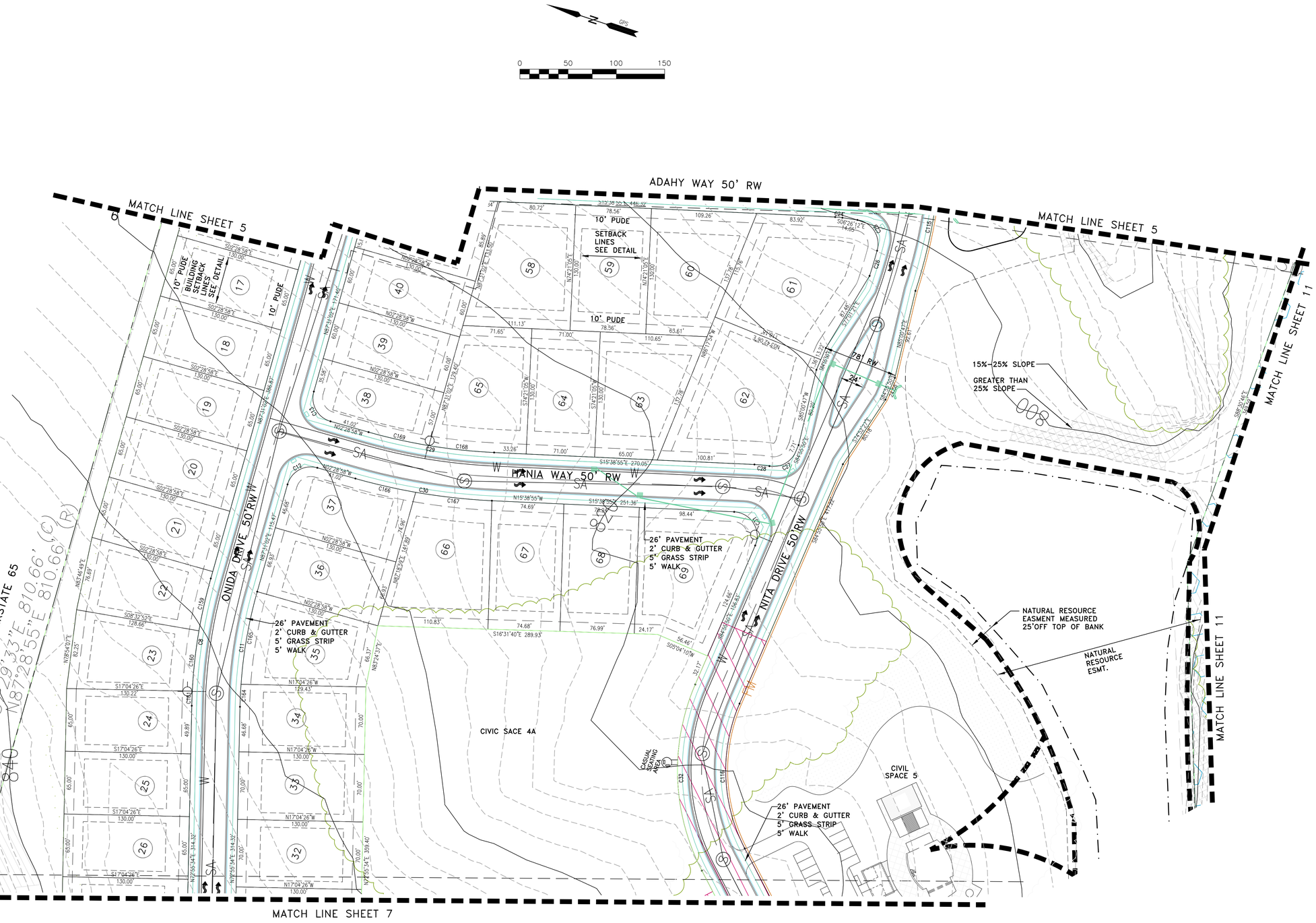
PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire —E—
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer —ST—
Sanitary Sewer —SA—
Water —W—
Fire Hydrant FH



PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire — E —
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer — ST —
Sanitary Sewer — SA —
Water — W —
Fire Hydrant FH

0 50 100 150

INTERSTATE 65

DARREL E. REINSCHNEIDER
DEED BOOK 1662, PAGE 557,
TAX MAP 144, PARCEL 32.00
D1 ZONING

N87°04'55"E 618.25'(R)(C)

ONIDA DRIVE 50'RW

MATCH LINE SHEET 6

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

10' PUDE

BUILDING SETBACK LINES SEE DETAIL

5' WIDE RUSTIC CHIP PATHWAY

CIVIC SPACE 3

CIVIC SPACE 5

BIMISI DRIVE 50'RW

JACYWAY 52'RW

ALLEY 20'RW

NITA DRIVE 50'RW

DELSY DRIVE 50'RW

ACHAK DRIVE 52'RW

26' PAVEMENT
8' PARKING STALL
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

CIVIC SPACE 2

DETENTION

WALKING TRAIL

POND

GREATER THAN 25% SLOPE

15%-25% SLOPE

50' NATURAL ESSP FORCE

MATCH LINE SHEET 7

MATCH LINE SHEET 8

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20 SHEET 7 OF 22

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

MATCH LINE SHEET 7

INTERSTATE 65

DETENTION

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

CIVIC SPACE 2

ACHAK DRIVE 52'RW

ADRIEL DRIVE 50'RW

NITA DRIVE 50'RW

ALLEY 20'RW

DELSY DRIVE

BIMISI DRIVE 50'RW

YANISIN WAY 52'RW

CHAYTON DRIVE 52'RW

10' PUDE

BUILDING SETBACK LINES SEE DETAIL

50' NATURAL RESOURCE ESMT.

26' PAVEMENT
8' PARKING STALL
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

CIVIC SPACE 1

DOWNHILL

MATCH LINE SHEET 9

MATCH LINE SHEET 10

0 50 100 150

LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire — E —
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer — ST —
Sanitary Sewer — SA —
Water — W —
Fire Hydrant FH

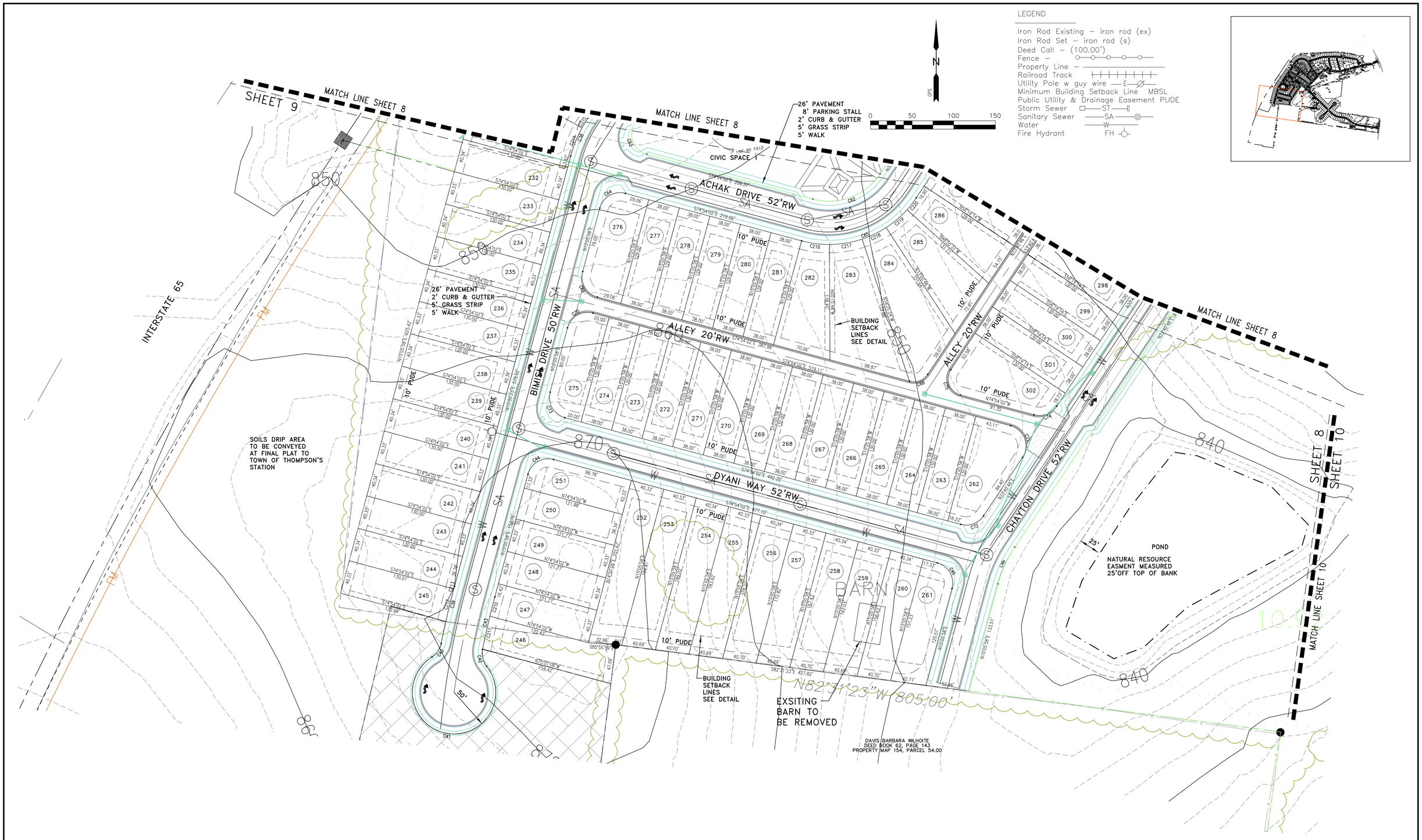
PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED



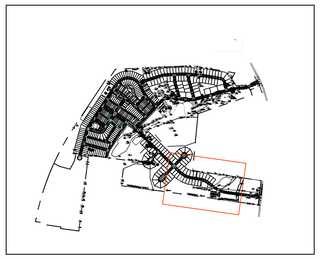
PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED



LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire —E—
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer —ST—
Sanitary Sewer —SA—
Water —W—
Fire Hydrant FH

MATCH LINE SHEET 8
MATCH LINE SHEET 8
MATCH LINE SHEET 8
MATCH LINE SHEET 11
MATCH LINE SHEET 11
MATCH LINE SHEET 9
SHEET 10
SHEET 12
HEET 10
1MATCH LINE SHEET 12

0 50 100 150

N00°07'27"E 623.61'(R)

N07°40'54"E 572.26'(R)(C)

N81°57'56"W

9.12 Acres

6.97 Acres

SOILS DRIP AREA TO BE CONVEYED AT FINAL PLAT TO TOWN OF THOMPSON'S STATION

APONI COURT 50' RW

DELSY DRIVE 50' RW

FALA COURT 50' RW

HOWL COURT 50' RW

BARN

10' PUDE

BUILDING SETBACK LINES SEE DETAIL

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

46'

50'

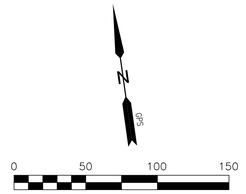
PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED



LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire – E–
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer ST
Sanitary Sewer SA
Water W
Fire Hydrant FH

MATCH LINE SHEET 7

WALKING TRAIL

N69°44'48"E 697.10'

S88°30'46"E 349.59'

S12°55'50"W 1260.86'(R)(C)

GREATER THAN 25% SLOPE

15%-25% SLOPE

SOILS DRIP AREA TO BE CONVEYED AT FINAL PLAT TO TOWN OF THOMPSON'S STATION

11.34 Acres

TAX MAP 155,
PARCEL 1.05
DENNIS H.
UMERLIK
LINDA C. UMERLIK
DEED BOOK 3407,
PAGE 13

RT

N41°56'08"W 105.24'

N41°56'08"W 48.93'

S72°33'34"W 231.23'

S86°48'00"E

S86°05'22"W 445.10'

SHEET 11

S49°45'57"E 782.30'

MATCH LINE SHEET 10

65.00'

SHEET 11

N44°47'07"E 165.00'

N70°06'39"E 149.00'

S64°28'03"E 119.05'

S26°39'57"E 119.05'

MATCH LINE SHEET 12

N00°07'27"E 277.00'

TAX MAP 154,
PARCEL 50
PLEASANT CREEK
INVESTMENTS, LLC
DEED BOOK 6584,
PAGE 127

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

LEGEND

Iron Rod Existing – iron rod (ex)
Iron Rod Set – iron rod (s)
Deed Call – (100.00')
Fence –
Property Line –
Railroad Track
Utility Pole w guy wire — E —
Minimum Building Setback Line MBSL
Public Utility & Drainage Easement PUDE
Storm Sewer — ST —
Sanitary Sewer — SA —
Water — W —
Fire Hydrant FH

0 50 100 150

TAX MAP 155, PARCEL 1 CHRISTOPHER HILL ALISON HILL DEED BOOK 7343, PAGE 996

TAX MAP 155, PARCEL 1.06 JACOB F. GORDON AMY B. GORDON DEED BOOK 7179, PAGE 352

TAX MAP 155, PARCEL 1.07 HUNTLEY GORDON KATHLEEN GORDON DEED BOOK 7814, PAGE 424

TAX MAP 155, PARCEL 1.07 STEVEN CRAIG KIRCHNER ROCIO KIRCHNER DEED BOOK 7669, PAGE 905

TAX MAP 155, PARCEL 2.01 DARREL E REIFSCHNEIDER 2014 QUAL ANNUITY TRUST DEED BOOK 7149, PAGE 982

N00°07'27"E 623.61'(R)
N00°34'50"E 623.37'(R)
S00°34'50"W 538.37'(R)
N00°32'50"W 239.76'(R)
S34°53'47"W 212.80'(C)
S0°32'50"W 27.20'(R)
S05°44'46" W 573.25'(M)
S05°44'46" W 295.00'(M)
N86°48'00"W 351.12'(R)
N81°33'40"W 352.32'
N86°53'18"W 826.24'
N81°53'09"W 301.21'(R)
N87°W 298'(R)
N87°W 298'(R)
N82°04'01"W 596.53'(R)(C)
N81°52'28"W 663.18'(R)(C)
N81°52'28"W 299.50'(C)

SHEET 10
SHEET 12
MATCH LINE SHEET 10
MATCH LINE SHEET 12

26" HACKBERRY

10' PUDE BUILDING SETBACK LINES SEE DETAIL

10' PUDE

DETENTION

BARN

EXISTING BARN

BARN
CIVIC SPACE 6

WELL HOUSE

POND

25' NATURAL RESOURCE EASMENT MEASURED 25'OFF TOP OF BANK

50' NATURAL RESORCE ESMT.

OPEN SPACE 0.40 ACRES

OPEN SPACE 0.17 ACRES

15%–25% SLOPE

26' PAVEMENT
2' CURB & GUTTER
5' GRASS STRIP
5' WALK

DELSY DRIVE 50'RW

60' RW

OZZAD PROPERTY MANAGEMENT LLC
DEED BOOK 1051 PAGE 242
TAX MAP 155 PARCEL 6

OZZAD PROPERTY MANAGEMENT LLC
DEED BOOK 2996 PAGE 473
TAX MAP 155 PARCEL 5

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20

COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED

LOT AREA TABLE

Lot Area Table		
Lot No.	Sq. Feet	Acres
1	17,540	0.40
2	10,160	0.23
3	12,092	0.28
4	12,870	0.30
5	8,450	0.19
6	8,450	0.19
7	8,450	0.19
8	8,450	0.19
9	8,450	0.19
10	8,450	0.19
11	8,450	0.19
12	8,450	0.19
13	8,450	0.19
14	8,450	0.19
15	8,789	0.20
16	9,296	0.21
17	8,450	0.19
18	8,450	0.19
19	8,450	0.19
20	8,450	0.19
21	8,450	0.19
22	8,982	0.21
23	9,331	0.21
24	8,451	0.19
25	8,450	0.19
26	8,450	0.19
27	8,450	0.19
28	8,450	0.19
29	8,642	0.20
30	11,828	0.27
31	9,100	0.21
32	9,100	0.21
33	9,100	0.21
34	9,096	0.21
35	10,580	0.24
36	8,943	0.21
37	9,254	0.21
38	7,665	0.18
39	7,800	0.18
40	7,800	0.18
41	10,124	0.23
42	13,108	0.30
43	9,880	0.23
44	9,390	0.22
45	9,420	0.22
46	8,775	0.20
47	8,775	0.20
48	8,775	0.20
49	9,328	0.21
50	15,232	0.35
51	19,887	0.46
52	20,775	0.48
53	16,900	0.39
54	18,245	0.42
55	9,425	0.22
56	9,425	0.22
57	9,425	0.22
58	12,471	0.29
59	10,212	0.23
60	11,236	0.26
61	17,155	0.39
62	17,162	0.39
63	11,417	0.26
64	9,230	0.21
65	11,198	0.26
66	13,168	0.30
67	9,904	0.23
68	10,202	0.23
69	14,603	0.34
70	5,244	0.12
71	5,243	0.12
72	4,788	0.11
73	2,600	0.06
74	2,600	0.06
75	4,795	0.11
76	5,275	0.12
77	4,890	0.11
78	5,068	0.12
79	2,606	0.06
80	2,609	0.06
81	4,776	0.11
82	4,769	0.11
83	2,598	0.06
84	2,596	0.06
85	5,425	0.12
86	8,416	0.19
87	6,766	0.16
88	6,230	0.14
89	5,805	0.13
90	5,817	0.13
91	5,724	0.13
92	5,817	0.13
93	5,724	0.13
94	5,817	0.13
95	5,752	0.13
96	5,789	0.13
97	5,752	0.13
98	5,789	0.13
99	5,724	0.13
100	5,817	0.13
101	5,351	0.12
102	5,846	0.13
103	5,205	0.12
104	6,096	0.14
105	5,348	0.12
106	5,193	0.12
107	5,354	0.12
108	5,193	0.12
109	5,354	0.12
110	5,193	0.12
111	5,354	0.12
112	5,193	0.12
113	4,938	0.11
114	4,986	0.11
115	5,412	0.12
116	5,660	0.13
117	5,740	0.13
118	5,681	0.13
119	8,504	0.20
120	5,276	0.12

Lot Area Table		
Lot No.	Sq. Feet	Acres
121	2,540	0.06
122	2,540	0.06
123	4,656	0.11
124	4,656	0.11
125	2,540	0.06
126	2,540	0.06
127	6,145	0.14
128	4,741	0.11
129	2,540	0.06
130	2,540	0.06
131	4,656	0.11
132	4,678	0.11
133	2,540	0.06
134	2,540	0.06
135	4,656	0.11
136	4,678	0.11
137	2,540	0.06
138	2,540	0.06
139	5,178	0.12
140	4,672	0.11
141	2,990	0.07
142	2,990	0.07
143	4,095	0.09
144	4,095	0.09
145	2,990	0.07
146	2,990	0.07
147	2,990	0.07
148	2,990	0.07
149	4,759	0.11
150	4,672	0.11
151	2,990	0.07
152	2,990	0.07
153	2,990	0.07
154	2,990	0.07
155	4,095	0.09
156	4,095	0.09
157	2,990	0.07
158	2,990	0.07
159	4,672	0.11
160	6,413	0.15
161	4,978	0.11
162	4,988	0.11
163	5,183	0.12
164	5,453	0.13
165	5,723	0.13
166	5,993	0.14
167	6,263	0.14
168	6,533	0.15
169	6,803	0.16
170	8,927	0.20
171	4,775	0.11
172	2,113	0.05
173	3,874	0.09
174	3,874	0.09
175	2,113	0.05
176	4,191	0.10
177	5,146	0.12
178	4,560	0.10
179	4,560	0.10
180	4,560	0.10
181	4,560	0.10
182	4,560	0.10
183	5,266	0.12
184	4,845	0.11
185	2,990	0.07
186	2,990	0.07
187	2,990	0.07
188	2,990	0.07
189	4,074	0.09
190	4,030	0.09
191	2,990	0.07
192	2,990	0.07
193	4,845	0.11
194	5,172	0.12
195	2,990	0.07
196	2,990	0.07
197	2,990	0.07
198	2,990	0.07
199	4,095	0.09
200	3,965	0.09
201	2,990	0.07
202	2,990	0.07
203	4,095	0.09
204	4,095	0.09
205	2,990	0.07
206	2,990	0.07
207	4,043	0.09
208	5,675	0.13
209	2,991	0.07
210	2,990	0.07
211	5,842	0.13
212	5,244	0.12
213	5,243	0.12
214	5,244	0.12
215	5,243	0.12
216	5,244	0.12
217	5,243	0.12
218	5,244	0.12
219	5,243	0.12
220	5,244	0.12
221	5,243	0.12
222	5,244	0.12
223	5,243	0.12
224	5,244	0.12
225	5,243	0.12
226	5,244	0.12
227	5,243	0.12
228	5,244	0.12
229	5,243	0.12
230	5,697	0.13
231	8,721	0.20
232	5,244	0.12
233	5,243	0.12
234	5,244	0.12
235	5,243	0.12
236	5,244	0.12
237	5,243	0.12
238	5,244	0.12
239	5,243	0.12
240	5,244	0.12

Lot Area Table		
Lot No.	Sq. Feet	Acres
241	5,243	0.12
242	5,244	0.12
243	5,243	0.12
244	5,244	0.12
245	5,253	0.12
246	6,492	0.15
247	4,943	0.11
248	4,939	0.11
249	4,930	0.11
250	4,680	0.11
251	5,025	0.12
252	7,889	0.18
253	7,732	0.18
254	7,516	0.17
255	7,296	0.17
256	7,080	0.16
257	6,861	0.16
258	6,645	0.15
259	6,426	0.15
260	6,209	0.14
261	6,148	0.14
262	6,948	0.16
263	4,940	0.11
264	4,940	0.11
265	4,940	0.11
266	4,940	0.11
267	4,940	0.11
268	4,940	0.11
269	4,940	0.11
270	4,940	0.11
271	4,940	0.11
272	4,940	0.11
273	4,940	0.11
274	4,940	0.11
275	5,582	0.13
276	6,706	0.15
277	4,902	0.11
278	4,902	0.11
279	4,902	0.11
280	4,902	0.11
281	4,902	0.11
282	6,804	0.16
283	10,089	0.23
284	9,137	0.21
285	7,180	0.16
286	5,778	0.13
287	4,902	0.11
288	4,902	0.11
289	4,902	0.11
290	4,902	0.11
291	4,902	0.11
292	5,512	0.13
293	5,436	0.12
294	4,940	0.11
295	4,940	0.11
296	4,940	0.11
297	4,940	0.11
298	4,940	0.11
299	4,940	0.11
300	4,940	0.11
301	4,940	0.11
302	7,375	0.17
303	4,845	0.11
304	2,990	0.07
305	2,990	0.07
306	4,030	0.09
307	4,074	0.09
308	2,990	0.07
309	2,990	0.07
310	2,990	0.07
311	2,990	0.07
312	4,845	0.11
313	4,845	0.11
314	2,990	0.07
315	2,990	0.07
316	2,990	0.07
317	2,990	0.07
318	4,074	0.09
319	4,030	0.09
320	2,990	0.07
321	2,990	0.07
322	4,845	0.11
323	4,845	0.11
324	2,990	0.07
325	2,990	0.07
326	2,990	0.07
327	2,990	0.07
328	4,074	0.09
329	4,030	0.09
330	2,990	0.07
331	2,990	0.07
332	4,845	0.11
333	8,450	0.19
334	8,450	0.19
335	8,450	0.19
336	8,450	0.19
337	8,450	0.19
338	8,985	0.20
339	9,709	0.22
340	8,437	0.19
341	10,775	0.24
342	10,249	0.23
343	11,354	0.26
344	10,576	0.24
345	8,437	0.19
346	9,709	0.22
347	9,372	0.21
348	8,450	0.19
349	8,450	0.19
350	8,450	0.19
351	8,450	0.19
352	10,103	0.23
353	10,390	0.24
354	9,962	0.23
355	8,401	0.19
356	8,395	0.19
357	11,016	0.25
358	11,101	0.25
359	11,349	0.26
360	10,815	0.25

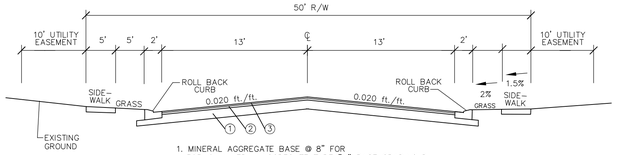
Lot Area Table		
Lot No.	Sq. Feet	Acres
360	10,815	0.25
361	8,450	0.19
362	8,461	0.19
363	10,030	0.23
364	10,463	0.24
365	8,966	0.21
366	8,450	0.19
367	8,637	0.20
368	8,795	0.20
369	8,689	0.20
370	8,689	0.20
371	8,689	0.20
372	8,574	0.20
373	8,450	0.19
374	8,450	0.19
375	8,424	0.19
376	8,450	0.19
377	8,450	0.19
378	8,450	0.19
379	8,450	0.19
380	8,450	0.19
381	8,450	0.19
382	8,450	0.19
383	8,450	0.19
384	8,450	0.19
385	8,450	0.19
386	8,450	0.19
387	8,450	0.19
388	8,450	0.19
389	8,966	0.21
390	9,925	0.23
391	9,493	0.22
392	8,319	0.19
393	10,678	0.25
394	9,630	0.22
395	9,630	0.22
396	10,678	0.25
397	8,319	0.19
398	9,493	0.22
399	9,925	0.23
400	8,966	0.21
401	8,450	0.19
402	9,244	0.21
403	9,547	0.22
404	9,528	0.22
405	9,688	0.22
406	8,450	0.19
407	8,450	0.19
408	9,108	0.21
409	9,253	0.21
410	9,252	0.21
411	9,279	0.21
412	8,452	0.19
413	74,184	1.70
414	143,244	3.28
415	56,698	1.30
416	67,752	1.55
Total	3,043,803	69.88

CURVE DATA

CURVE	RADIUS	DELTA ANGLE	ARC	CHORD	CHORD BEARING
C1	25.00'	92°40'26"	40.44'	36.17'	S18°24'53"W
C2	225.00'	18°56'23"	74.38'	74.04'	S74°13'17"W
C3	625.00'	8°36'00"	93.81'	93.72'	S79°23'29"W
C4	25.00'	90°00'00"	39.27'	35.36'	N59°54'31"W
C5	125.00'	65°25'13"	142.73'	135.10'	N47°37'09"W
C6	525.00'	4°26'48"	40.75'	40.74'	N82°33'09"W
C7	125.00'	7°42'25"	16.81'	16.80'	N88°37'45"W
C8	525.00'	14°35'28"	133.70'	133.34'	S85°13'18"W
C9	300.00'	11°50'30"	62.00'	61.89'	S67°00'19"W
C10	250.00'	11°50'30"	51.67'	51.58'	N67°00'19"E
C11	475.00'	14°35'28"	120.97'	120.64'	N85°13'18"E
C12	25.00'	90°00'00"	39.27'	35.36'	S47°28'58"E
C13	25.00'	90°00'00"	39.27'	35.36'	N42°31'02"E
C14	75.00'	7°42'25"	10.09'	10.08'	S88°37'45"E
C15	25.00'	90°00'00"	39.27'	35.36'	S39°46'33"E
C16	25.00'	90°00'00"	39.27'	35.36'	N50°13'27"E
C17	475.00'	4°26'48"	36.86'	36.86'	S82°33'09"E
C18	75.00'	65°25'13"	85.64'	81.06'	S47°37'08"E
C19	25.00'	90°00'00"	39.27'	35.36'	S30°05'29"W
C20	25.01'	93°36'50"	40.87'	36.47'	N56°42'55"W
C21	125.00'	5°45'09"	12.55'	12.54'	N12°46'26"W
C22	75.00'	20°52'22"	27.32'	27.17'	N05°12'44"W
C23	125.00'	20°52'22"	45.54'	45.29'	S05°12'44"E
C24	75.00'	5°45'09"	7.53'	7.53'	S12°46'26"E
C25	25.02'	98°09'45"	42.86'	37.81'	S39°12'11"W
C26	475.00'	3°16'34"	27.16'	27.16'	S88°13'06"W
C27	25.00'	78°26'13"	33.35'	30.93'	N46°42'43"W
C28	125.00'	7°09'18"	15.61'	15.60'	N12°04'16"W
C29	575.00'	13°09'57"	132.13'	131.84'	N09°03'56"W
C30	625.00'	13°09'57"	143.62'	143.30'	S09°03'56"E
C31	25.00'	110°43'05"	48.31'	41.14'	S39°42'38"W
C32	225.00'	59°48'07"	234.91'	224.50'	S60°28'40"E
C33	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C34	600.00'	18°28'24"	193.45'	192.61'	N36°29'45"W
C35	25.00'	88°20'38"	38.55'	34.84'	N16°54'45"E
C36	25.00'	78°27'47"	34.24'	31.62'	N79°41'02"W
C37	325.00'	105°52'05"	600.52'	518.66'	N86°36'48"E
C38	156.00'	18°34'48"	50.59'	50.37'	S24°23'22"W
C39	635.55'	3°57'29"	43.90'	43.89'	N13°52'21"E
C40	25.00'	46°38'44"	20.35'	19.80'	S34°27'51"W
C41	50.00'	276°20'21"	241.15'	66.69'	S89°22'57"E
C42	25.00'	49°51'15"	21.75'	21.07'	N13°37'39"W
C43	975.00'	3°47'51"	64.62'	64.61'	N13°12'02"E
C44	25.00'	90°00'00"	39.27'	35.36'	N60°05'58"E
C45	25.00'	90°00'00"	39.27'	35.36'	S29°54'02"E
C46	150.00'	18°34'48"	48.64'	48.43'	N24°23'22"E
C47	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C48	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C49	25.00'	90°00'00"	39.27'	35.36'	S78°40'46"W
C50	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C51	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C52	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C53	25.00'	90°00'00"	39.27'	35.36'	S78°40'46"W
C54	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C55	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C56	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C57	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C58	25.00'	90°00'00"	39.27'	35.36'	S78°40'46"W
C59	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C60	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C61	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C62	74.00'	71°25'12"	92.24'	86.39'	S69°23'22"W
C63	25.00'	108°34'48"	47.38'	40.60'	N20°36'38"W
C64	25.00'	90°00'00"	39.27'	35.36'	S60°05'58"W
C65	126.00'	71°25'12"	157.08'	147.09'	N69°23'22"E
C66	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C67	20.00'	90°00'00"	31.42'	28.28'	S11°19'14"E
C68	20.00'	71°25'12"	24.93'	23.35'	S69°23'22"W
C69	25.00'	90°00'00"	39.27'	35.36'	N29°54'02"W
C70	25.00'	90°00'00"	39.27'	35.36'	N60°05'58"E
C71	25.00'	108°34'48"	47.38'	40.60'	S20°36'38"E
C72	25.00'	71°25'12"	31.16'	29.18'	S69°23'22"W
C73	25.00'	90°00'00"	39.27'	35.36'	N29°54'02"W
C74	25.00'	71°25'12"	31.16'	29.18'	S69°23'22"W
C75	20.00'	108°34'48"	37.90'	32.48'	N20°36'38"W
C76	20.00'	90°00'00"	31.42'	28.28'	N78°40'46"E
C77	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C78	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C79	230.00'	10°35'17"	42.50'	42.44'	N51°01'36"W
C80	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C81	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C82	50.00'	10°35'17"	9.24'	9.23'	S51°01'36"E
C83	25.00'	90°00'00"	39.27'	35.36'	S00°43'57"E
C84	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C85	70.00'	10°35'17"	12.94'	12.92'	N51°01'36"W
C86	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C87	25.00'	100°35'17"	43.89'	38.47'	N83°58'24"E
C88	25.00'	90°00'00"	39.27'	35.36'	S00°43'57"E
C89	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C90	25.00'	90°00'00"	39.27'	35.36'	N00°43'57"W
C91	25.00'	90°00'00"	39.27'	35.36'	N89°16'03"E
C92	25.00'	90°00'00"	39.27'	35.36'	S00°43'57"E
C93	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C94	25.00'	90°00'00"	39.27'	35.36'	N00°43'57"W
C95	25.01'	94°24'05"	41.20'	36.70'	S88°30'42"E
C96	24.67'	91°32'10"	39.42'	35.36'	S00°43'57"E
C97	25.00'	90°00'00"	39.27'	35.36'	S78°40'46"W
C98	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C99	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C100	25.00'	90°00'00"	39.27'	35.36'	S11°19'14"E
C101	25.00'	90°00'00"	39.27'	35.36'	S78°40'46"W
C102	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C103	25.00'	90°00'00"	39.27'	35.36'	N78°40'46"E
C104	151.00'	10°35'17"	27.90'	27.86'	S51°01'36"E
C105	25.00'	79°24'43"	34.65'	31.94'	S08°01'36"E
C106	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C107	203.00'	10°35'17"	37.51'	37.46'	N51°01'36"W
C108	25.00'	90°00'00"	39.27'	35.36'	N11°19'14"W
C109	275.00'	119°03'41"	571.45'	474.05'	S86°47'24"E
C110	492.12'	7°10'53"	61.68'	61.64'	S29°58'37"E
C111	25.00'	78°57'44"	33.58'	31.11'	S05°47'11"W
C112	25.00'	88°54'08"	38.79'	35.01'	N70°47'50"W
C113	275.00'	18°56'23"	90.90'	90.49'	S74°13'17"W
C114	575.00'	8°36'00"	86.31'	86.23'	S79°23'29"W
C115	525.00'	14°45'54"	135.29'	134.92'	S82°28'26"W
C116	175.00'	50°48'07"	155.17'	150.13'	S69°40'06"W
C117	25.00'	90°00'00"	39.27'	35.36'	S00°43'57"E
C118	25.00'	90°00'00"	39.27'	35.36'	N89°16'03"E
C119	30.50'	46°24'51"	24.71'	24.04'	N21°03'37"E
C120	50.00'	46°24'51"	40.50'	39.41'	N21°03'37"E
C121	50.00'	180°00'00"	157.08'	100.00'	S45°43'57"E
C122	50.00'	46°24'51"	40.50'	39.41'	S67°28'28"W
C123	30.50'	46°24'51"	24.71'	24.04'	S67°28'28"W
C124	23.00'	180°00'00"	72.26'	46.00'	S45°43'57"E
C125	23.00'	180°00'00"	72.26'	46.00'	N45°43'57"W
C126	25.00'	90°00'00"	39.27'	35.36'	S00°43'57"E
C127	500.00'	35°49'42"	312.66'	307.59'	S63°38'48"E
C128	450.00'	30°56'55"	243.07'	240.13'	S66°05'12"E
C129	625.00'	27°05'55"	295.60'	292.85'	S64°09'42"E
C130	25.00'	90°14'59"	39.38'	35.43'	N59°52'15"E
C131	25.00'	89°46'44"	39.17'	35.29'	N39°08'36"W
C132	675.00'	27°24'27"	322.89'	319.82'	N64°18'58"W
C133	400.00'	30°56'55"	216.06'	213.44'	N66°05'12"W
C134	550.00'	35°49'42"	343.93'	338.35'	N63°38'48"W
C135	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C136	30.50'	46°24'51"	24.71'	24.04'	S21°03'37"W
C137	50.00'	46°24'51"	40.50'	39.41'	S21°03'37"W
C138	50.00'	180°00'00"	157.08'	100.00'	N45°43'57"W
C139	50.00'	46°24'51"	40.50'	39.41'	N67°28'28"E
C140	30.50'	46°24'51"	24.71'	24.04'	N67°28'28"E
C141	23.00'	180°00'00"	72.26'	46.00'	S45°43'57"E
C142	23.00'	180°00'00"	72.26'	46.00'	N45°43'57"W
C143	25.00'	90°00'00"	39.27'	35.36'	N00°43'57"W
C144	25.00'	90°00'00"	39.27'	35.36'	S89°16'03"W
C145	30.50'	46°24'51"	24.71'	24.04'	S21°03'37"W
C146	50.00'	46°24'51"	40.50'	39.41'	S21°03'37"W
C147	50.00'	170°48'09"	149.05'	99.68'	N41°08'02"W
C148	50.00'	46°24'51"	40.50'	39.41'	N67°28'28"E
C149	30.50'	46°24'51"	24.71'	24.04'	N67°28'28"E
C150	23.00'	180°00'00"	72.26'	46.00'	S45°43'57"E

CURVE	RADIUS	DELTA ANGLE	ARC	CHORD	CHORD BEARING
C151	23.00'	180°00'00"	72.26'	46.00'	N45°43'57"W
C152	25.00'	90°00'00"	39.27'	35.36'	N00°43'57"W
C153	200.00'	10°35'17"	36.96'	36.91'	N51°01'36"W
C154	125.00'	8°51'47"	19.34'	19.32'	N19°20'25"W
C155	125.00'	29°47'38"	65.00'	64.27'	N38°40'07"W
C156	125.00'	26°45'49"	58.39'	57.86'	N66°56'50"W
C157	125.00'	2°02.28"	4.45'	4.45'	N85°47'47"W
C158	125.00'	5°39'58"	12.36'	12.36'	N89°38'50"W
C159	525.00'	6°03'54"	55.57'	55.55'	S84°29'05"W
C160	525.00'	6°52.39"	63.02'	62.98'	S78°00'49"W
C161	525.00'	11°36'56"	15.11'	15.11'	S73°43'50"W
C162	250.00'	1°26'25"	6.28'	6.28'	S61°48'16"W
C163	250.00'	10°24'05"	45.38'	45.32'	N67°43'31"E
C164	475.00'	2°48'52"	23.33'	23.33'	N74°20'00"E
C165	475.00'	11°46'36"	97.63'	97.46'	N81°37'44"E
C166	625.00'	5°52.31"	64.09'	64.06'	S05°25'13"E
C167	668.07'	6°49'12"	79.52'	79.47'	S12°00'12"E
C168	575.00'	6°46'39"	68.02'	67.98'	N12°15'35"W
C169	575.00'	6°23.17"	64.11'	64.08'	N05°40'37"W
C170	325.00'	3°45.02"	21.27'	21.27'	N42°19'40"W
C171	325.00'	6°29'51"	36.86'	36.84'	N47°27'06"W
C172	325.00'	6°36'13"	37.46'	37.44'	N54°00'08"W
C173	325.00'	6°29'51"	36.86'	36.84'	N60°33'10"W
C174	325.00'	6°36'13"	37.46'	37.44'	N67°06'12"W
C175	325.00'	6°29'51"	36.86'	36.84'	N73°39'15"W
C176	325.00'	6°36'13"	37.46'	37.44'	N80°12'17"W
C177	325.00'	6°29'51"	36.86'	36.84'	N86°45'19"W
C178	325.00'	6°36'13"	37.46'	37.44'	S86°41'39"W
C179	325.00'	6°31'45"	37.04'	37.02'	S80°07'40"W
C180	325.00'	6°34'19"	37.28'	37.26'	S73°34'38"W
C181	325.00'	6°31'45"	37.04'	37.02'	S67°01'36"W
C182	325.00'	6°34'19"	37.28'	37.26'	S60°28'34"W
C183	325.00'	6°29'51"	36.86'	36.84'	S53°56'29"W
C184	325.00'	6°36'13"	37.46'	37.44'	S47°23'27"W
C185	325.00'	6°04'15"	34.44'	34.42'	S41°03'13"W
C186	325.00'	4°20'20"	24.61'	24.61'	S35°50'56"W
C187	275.00'	7°34'15"	36.34'	36.31'	N37°27'53"E
C188	275.00'	4°13'41"	20.29'	20.29'	N43°21'51"E
C189	275.00'	15°56'18"	76.50'	76.25'	N53°26'51"E
C190	275.00'	11°51'53"	56.95'	56.84'	N67°20'57"E
C191	275.00'	10°22'35"	49.80'	49.73'	N78°28'11"E
C192	275.00'	11°42'40"	56.21'	56.11'	N89°30'48"E
C193	275.00'	10°22.35"	49.80'	49.73'	S79°26'34"E
C194	275.00'	11°42'40"	56.21'	56.11'	S68°23'57"E
C195	275.00'	10°22'35"	49.80'	49.73'	S57°21'19"E
C196	275.00'	11°42'40"	56.21'	56.11'	S46°18'42"E
C197	275.00'	10°22'35"	49.80'	49.73'	S35°16'04"E
C198	275.00'	2°49'13"	13.54'	13.54'	S28

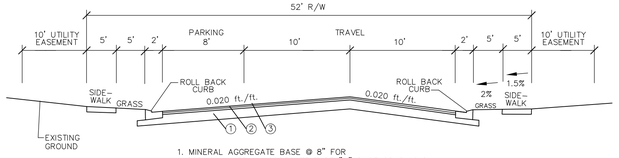
COPYRIGHT © 2020 PLEASANT CREEK INVESTMENTS, LLC, ALL RIGHTS RESERVED



1. MINERAL AGGREGATE BASE @ 8" FOR
   303-01 MINERAL AGGREGATE TYPE "A" BASE GRADING D
   402.01 BIT. MATERIAL FOR PRIME COAT (P.C.) 0.30-0.35 GAL./S.Y.
   402.02 AGGREGATE FOR COVER MATERIAL (P.C.) 8-12 LBS./S.Y.
2. BITUMINOUS LEVELING-WEARING SURFACE GRADING "CW"
   2" 200 LBS./S.Y.
   307-03.03 AGGREGATE (BPMB-HM) GRADING "CW"
   307-03.04 ASPHALT CEMENT (BPMB-HM) GRADING "CW"
3. ASPHALTIC CONCRETE SURFACE (HOT MIX) GRADING "E"
   1.5" 165 LBS./S.Y.
   411.02.01 MINERAL AGGREGATE FOR (ACS) GRADING "E"
   411.02.02 ASPHALT CEMENT FOR (ACS) GRADING "E"

TYPICAL ROADWAY SECTION

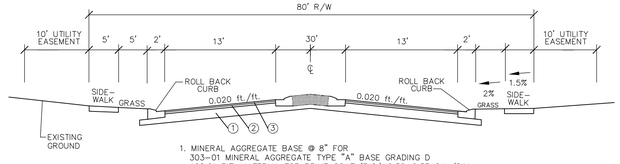
NTS



1. MINERAL AGGREGATE BASE @ 8" FOR
   303-01 MINERAL AGGREGATE TYPE "A" BASE GRADING D
   402.01 BIT. MATERIAL FOR PRIME COAT (P.C.) 0.30-0.35 GAL./S.Y.
   402.02 AGGREGATE FOR COVER MATERIAL (P.C.) 8-12 LBS./S.Y.
2. BITUMINOUS LEVELING-WEARING SURFACE GRADING "CW"
   2" 200 LBS./S.Y.
   307-03.03 AGGREGATE (BPMB-HM) GRADING "CW"
   307-03.04 ASPHALT CEMENT (BPMB-HM) GRADING "CW"
3. ASPHALTIC CONCRETE SURFACE (HOT MIX) GRADING "E"
   1.5" 165 LBS./S.Y.
   411.02.01 MINERAL AGGREGATE FOR (ACS) GRADING "E"
   411.02.02 ASPHALT CEMENT FOR (ACS) GRADING "E"

ALLEY LOTS ROADWAY SECTION

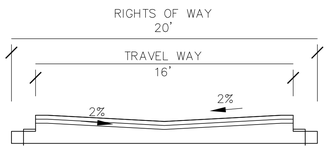
NTS



1. MINERAL AGGREGATE BASE @ 8" FOR
   303-01 MINERAL AGGREGATE TYPE "A" BASE GRADING D
   402.01 BIT. MATERIAL FOR PRIME COAT (P.C.) 0.30-0.35 GAL./S.Y.
   402.02 AGGREGATE FOR COVER MATERIAL (P.C.) 8-12 LBS./S.Y.
2. BITUMINOUS LEVELING-WEARING SURFACE GRADING "CW"
   2" 200 LBS./S.Y.
   307-03.03 AGGREGATE (BPMB-HM) GRADING "CW"
   307-03.04 ASPHALT CEMENT (BPMB-HM) GRADING "CW"
3. ASPHALTIC CONCRETE SURFACE (HOT MIX) GRADING "E"
   1.5" 165 LBS./S.Y.
   411.02.01 MINERAL AGGREGATE FOR (ACS) GRADING "E"
   411.02.02 ASPHALT CEMENT FOR (ACS) GRADING "E"

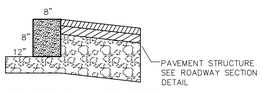
DIVIDED LANE ROADWAY SECTION

NTS



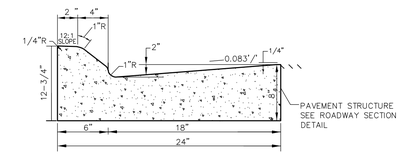
ALLEY SECTION

NTS



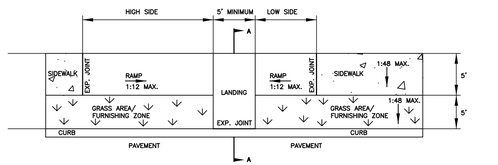
RIBBON CURB

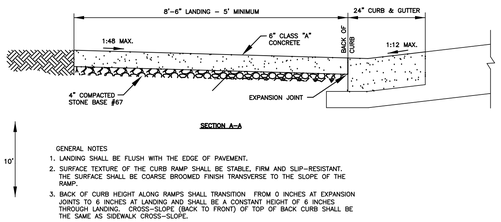
NTS



6" MOUNTABLE CONCRETE COMBINED CURB AND GUTTER

NTS

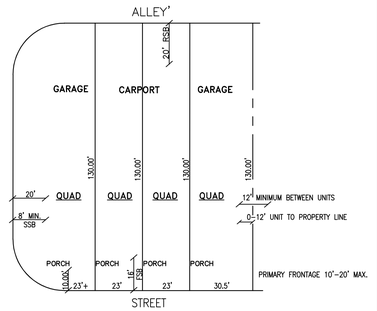




GENERAL NOTES
1. LANDING SHALL BE FLUSH WITH THE EDGE OF PAVEMENT.
2. SURFACE TEXTURE OF THE CURB RAMP SHALL BE STABLE, FIRM AND SLIP-RESISTANT. THE SURFACE SHALL BE COARSE BROOMED FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
3. BACK OF CURB HEIGHT ALONG RAMPS SHALL TRANSITION FROM 0 INCHES AT EXPANSION JOINTS TO 6 INCHES AT LANDING AND SHALL BE A CONSTANT HEIGHT OF 6 INCHES THROUGH LANDING. CROSS-SLOPE (BACK TO FRONT) OF TOP OF BACK CURB SHALL BE THE SAME AS SIDEWALK CROSS-SLOPE.
4. HIGH SIDE AND LOW SIDE RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1:12 (VERTICAL:HORIZONTAL) AND SHALL NOT BE REQUIRED TO EXCEED 8 FEET (96 INCHES) IN LENGTH.

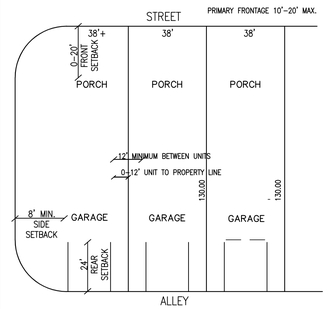
SIDEWALK

NTS



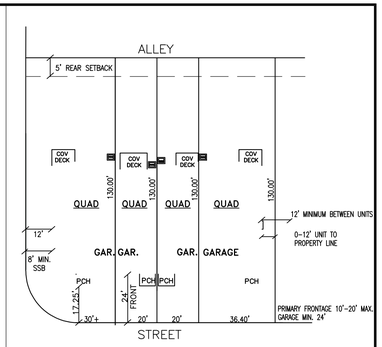
T4 UNIT LOT LAYOUT DIMENSIONS

QUADPLEXES & SIXPLEXES WITH
REAR LOADED GARAGE or CARPORT



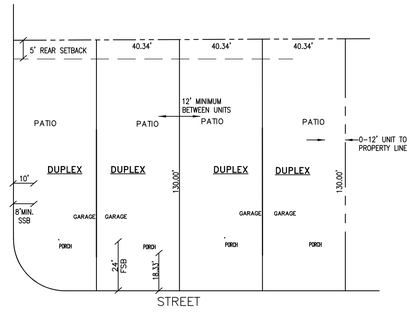
T4 UNIT LOT LAYOUT DIMENSIONS

SINGLE FAMILY HOME WITH
ALLEY LOADED GARAGE



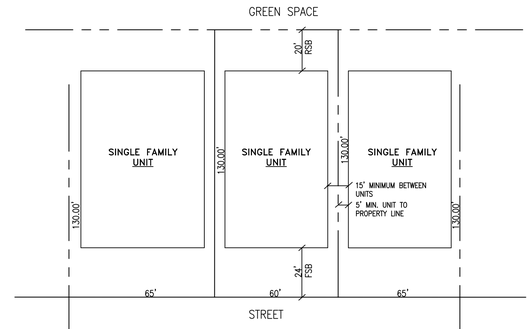
T4 UNIT LOT LAYOUT

QUADPLEXES & SIXPLEXES WITH
STREET LOADED GARAGE



T4 UNIT LOT LAYOUT DIMENSIONS

DUPLEXES, TRIPLEXES. FOURPLEXES
WITH FRONT LOADED GARAGE



T3 LOT LAYOUT DIMENSIONS

SINGLE FAMILY HOMES WITH GARAGE

NOTE: REQUEST A MINIMUM 15' AGGREGATE SIDE SETBACK

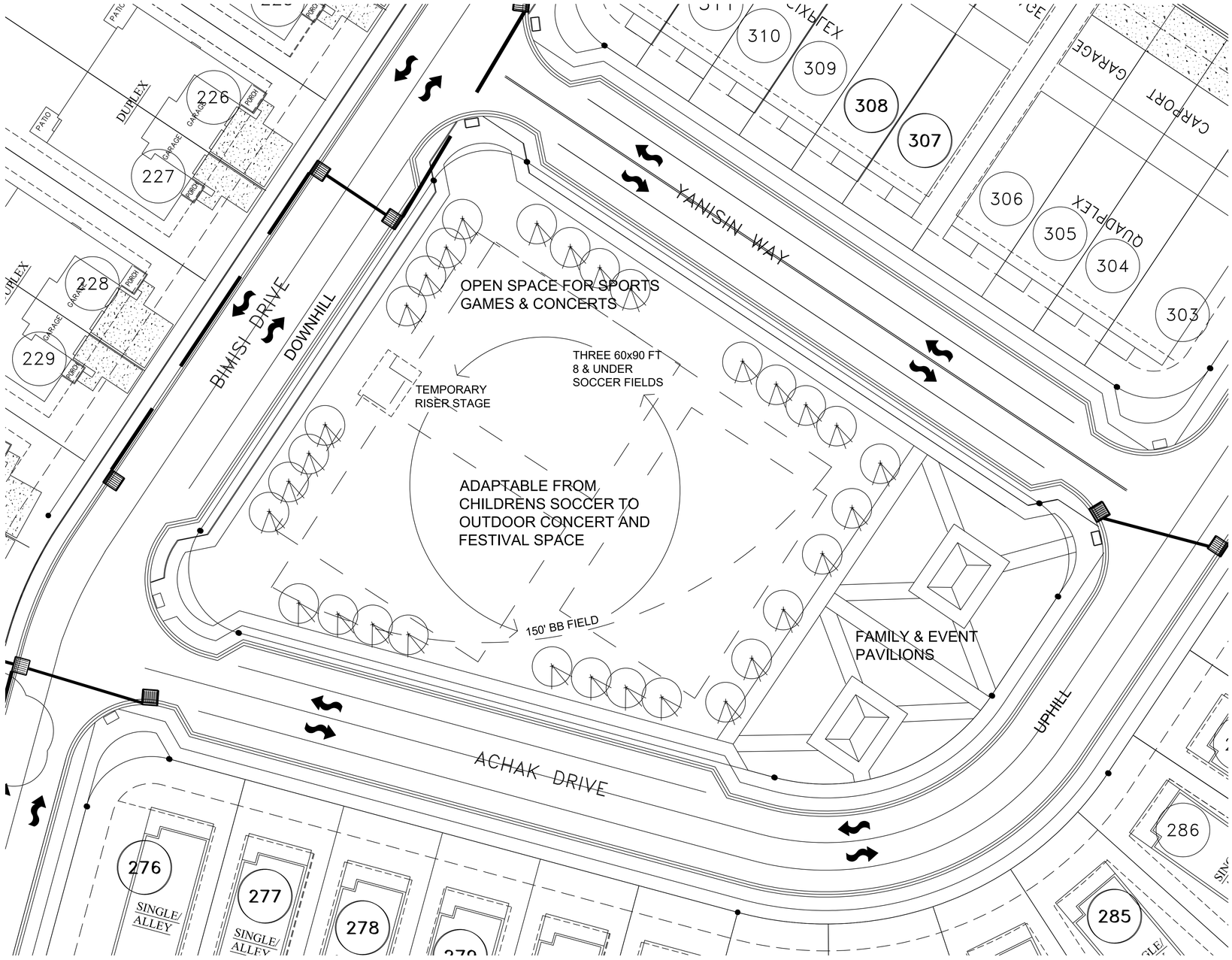
DETAILS

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

9/02/20 SHEET 14 OF 22



CIVIC SPACE 1

SQUARE — MULTIPURPOSE ADAPTABLE RECREATION SPACE

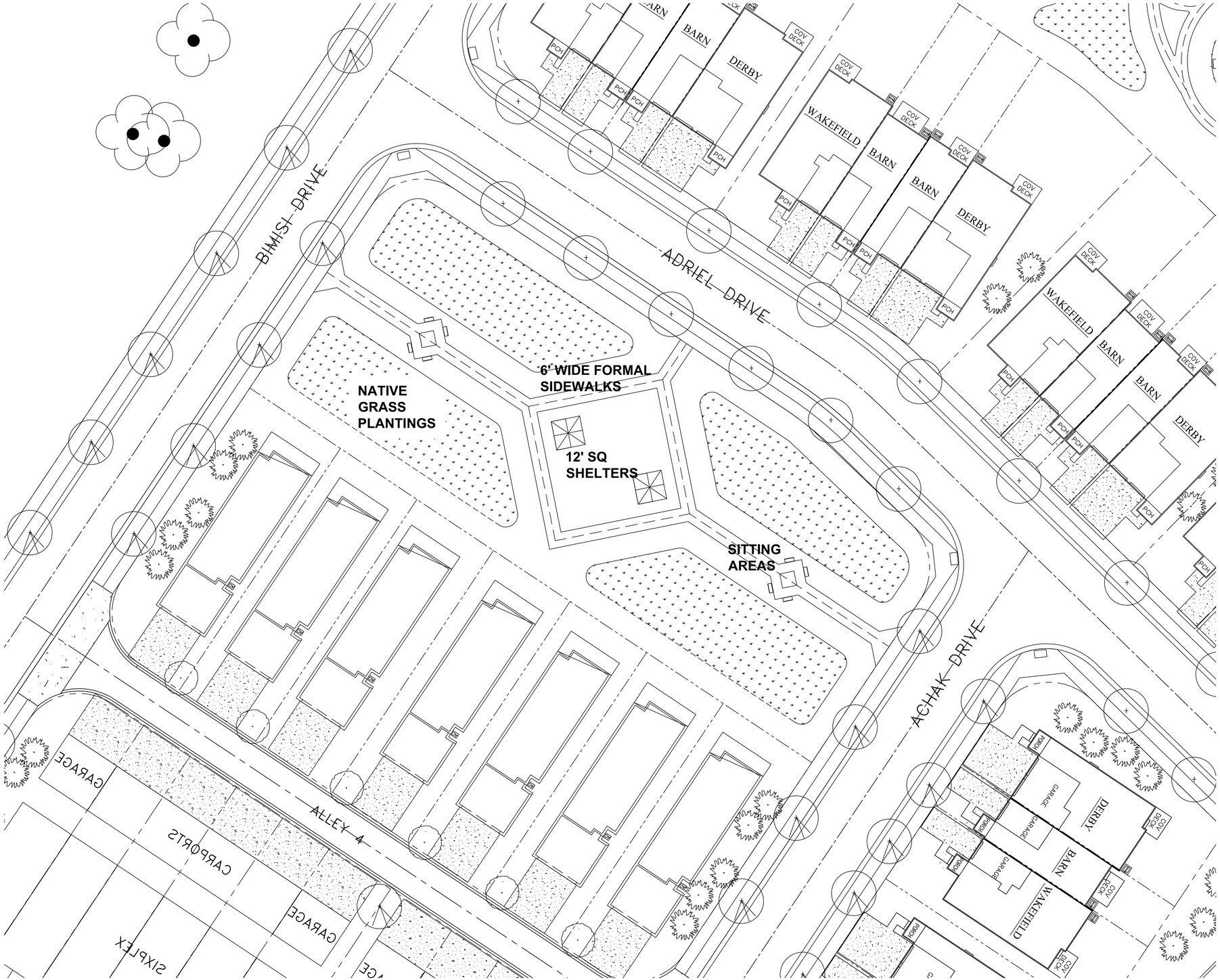
SCALE 1"=20'

PRELIMINARY PLAT
PLEASANT CREEK

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

7/22/20



CIVIC SPACE 2

SQUARE — FORMAL DESIGN W/BENCHES, TREES, SIDEWALKS, LAWN

SCALE 1"=20'

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

7/22/20

CIVIC SPACE 3

RAMBLE

BENCHES, TREES, CONNECTIONG
WALKWAYS, LAWN, & PLAY EQUIPMENT
SCALE 1"=20'

5' WIDE RUSTIC CHIP PATHWAY

FENCED PLAYGROUND & EQUIPMENT

NATIVE GRASS PLANTINGS

SITTING AREAS

BIMISI DRIVE

ADRIEL DRIVE

ACHAK DRIVE

ONEIDA DRIVE

BIMIST DRIVE

JACY WAY

MAY

WAKEFIELD

DERBY

BARN

COV DECK

PCH

PORCH

PATIO

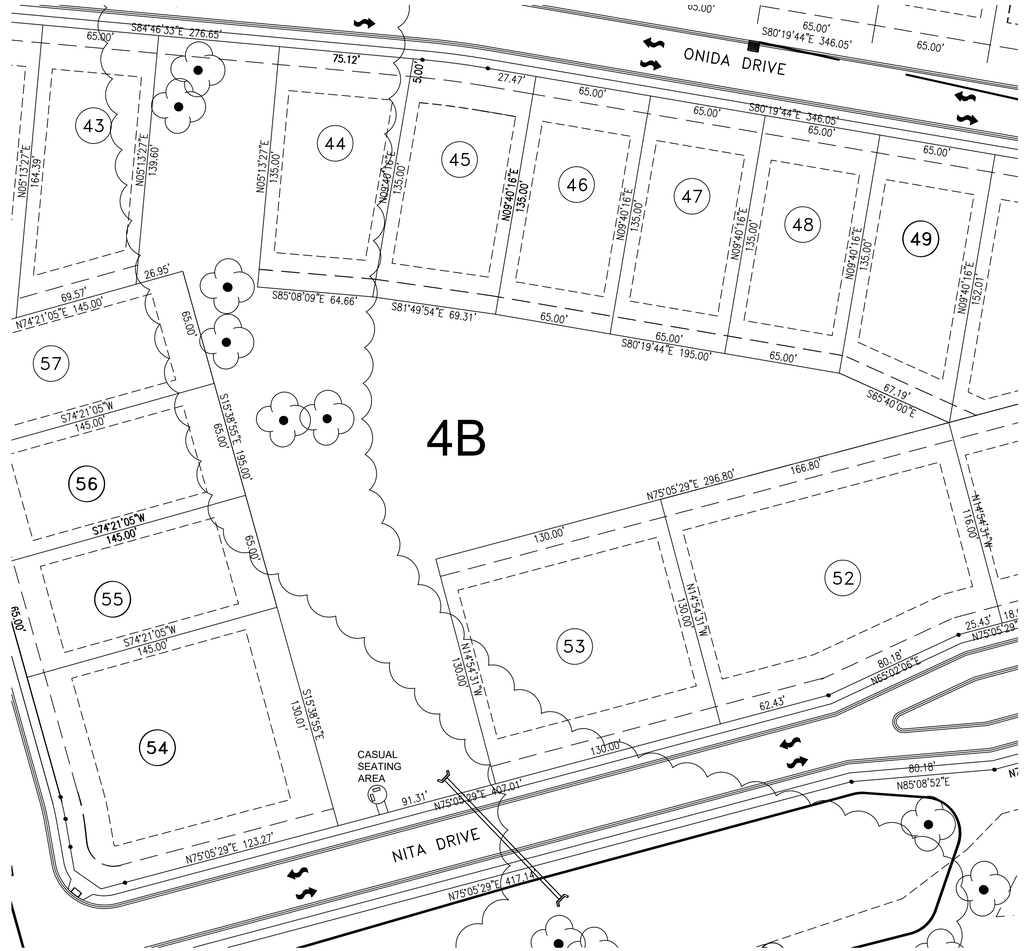
GARAGE

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

7/22/20



CIVIC SPACES 4A & 4B

PARKS UNDEVELOPED AREAS HANDLING DRAINAGE ACROSS THE SITE CONTAINING A FEW BENCHES AND PATCHES OF LAWN

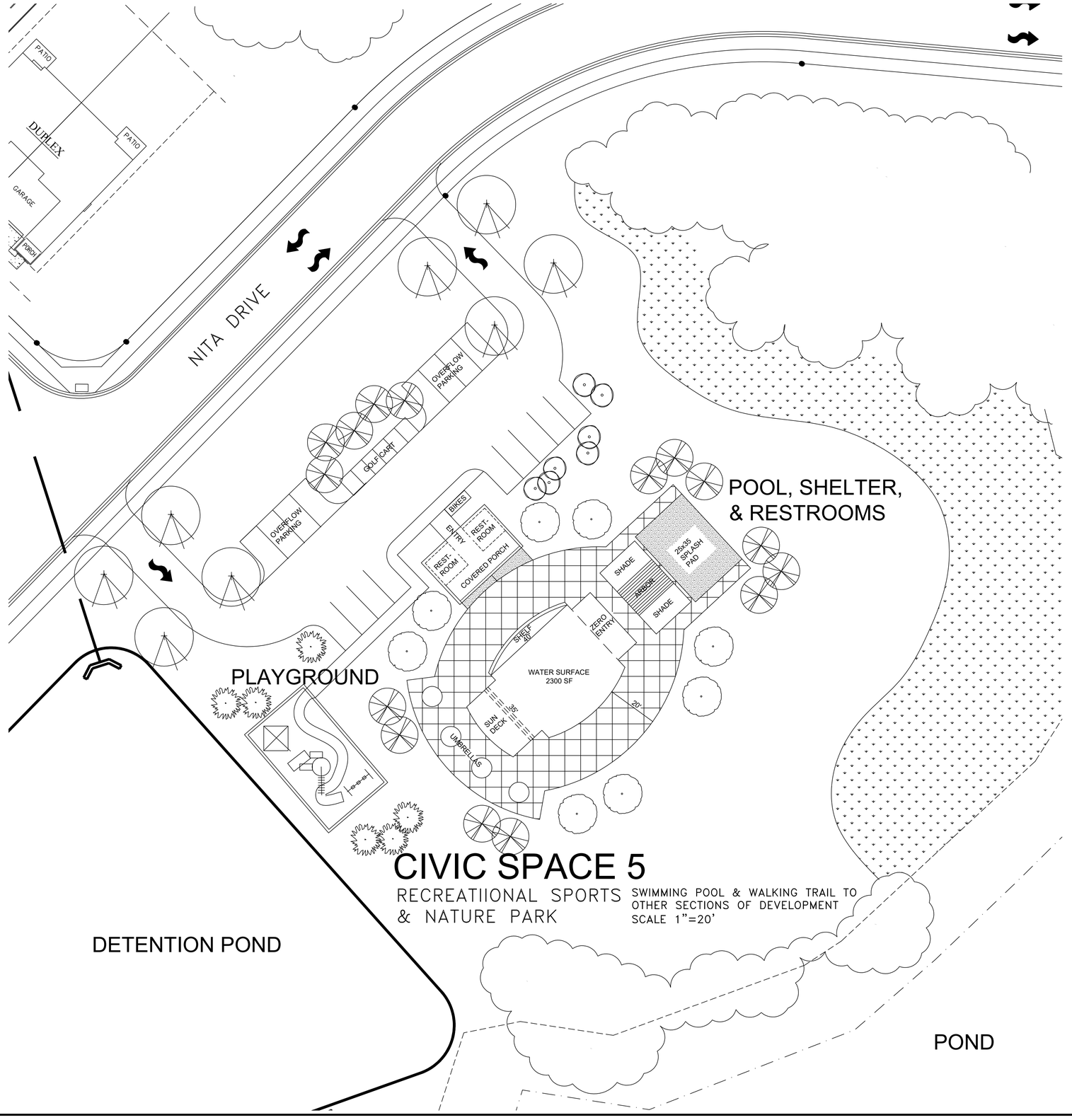
SCALE 1"=40'

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

7/22/20

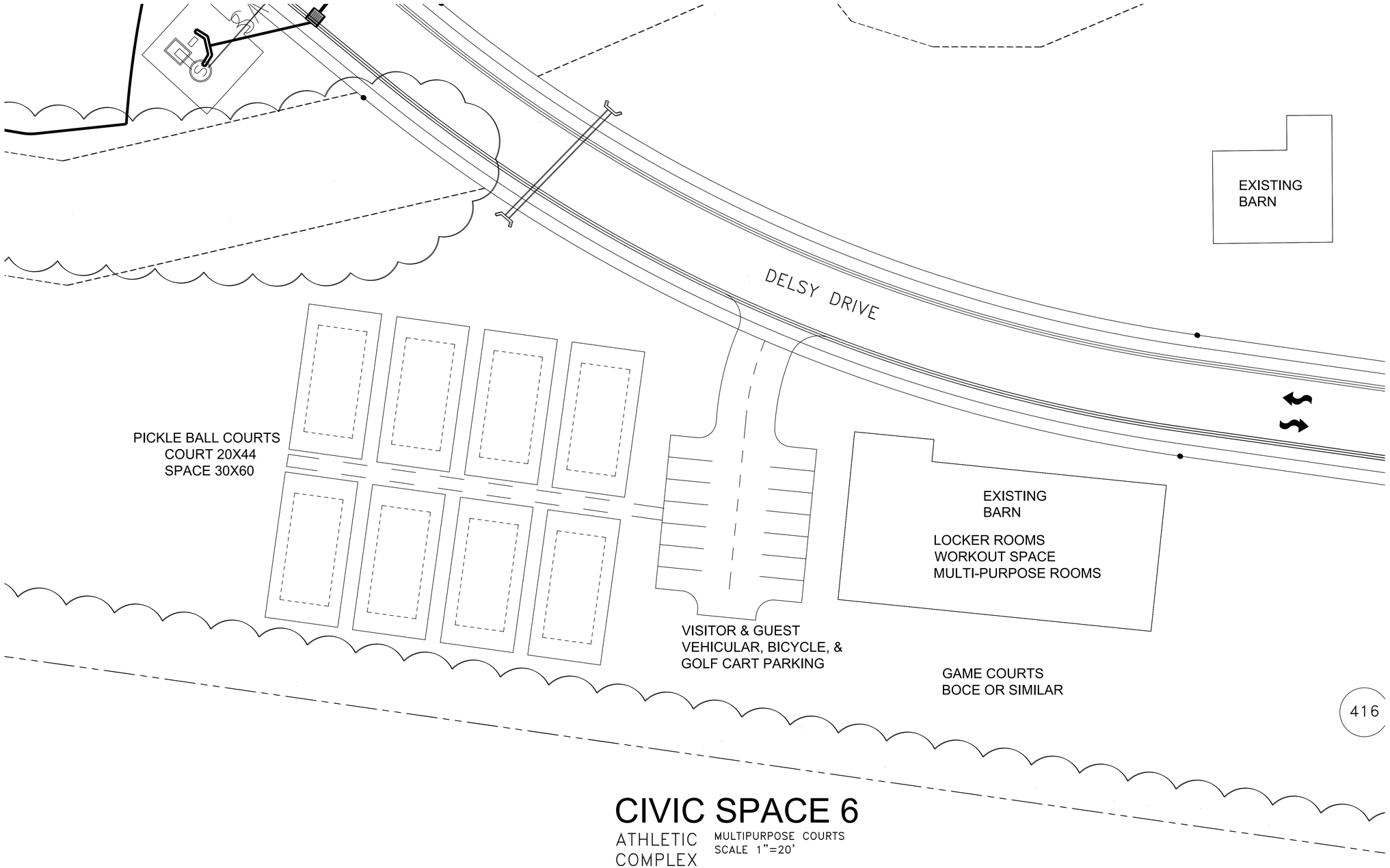


PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

7/22/20



CIVIC SPACE 6

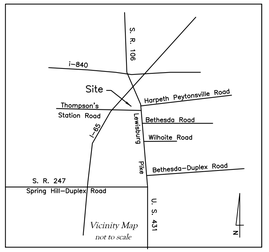
ATHLETIC COMPLEX

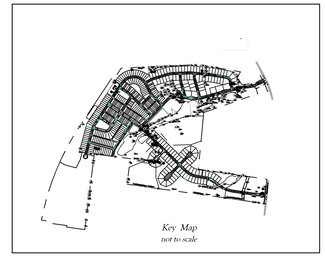
MULTIPURPOSE COURTS
SCALE 1"=20'

PRELIMINARY PLAT
PLEASANT CREEK

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE





TREE PLANTING PLAN NOTES

1. THIS PLAN REPRESENTS THE GENERAL APPEARANCE OF A FINAL PLANTING PLAN THAT WILL OCCUR AS EACH SECTION IS BUILT OUT.

2. THE FINAL PLAN AT A LARGER SCALE WILL MEET OR EXCEED THE REQUIRED TREE REPLACEMENT NUMBER.

3. STREET OR CANOPY TREES WILL BE PLANTED AN AVERAGE OF 50' ON CENTER THROUGHOUT THE PROJECT WHERE SPACE IS SUFFICIENT BETWEEN THE CURB AND SIDEWALK.

4. IN OTHER AREAS TREES WILL BE PLACED BEHIND THE SIDEWALK.

5. WHERE ELECTRICAL OR OTHER UTILITIES ABOVE OR BELOW GROUND CREATE OBSTACLES TO CANOPY TREE PLANTING, UNDERSTORY TREES WILL BE PLANTED.

6. THE PROJECT WILL MEET ALL TREE, SHRUB, AND LANDSCAPE REQUIREMENTS OF THE CITY OF THOMPSON'S STATION.

7. A MINIMUM OF 6 DIFFERENT CANOPY TREES AND 4 DIFFERENT UNDERSTORY TREES WILL BE PLANTED AT THIS TRANSECT DEVLEOPMENT.

8. IN THE T-3 DISTRICT, 2 TREES SHALL BE PLANTED WITHIN THE FRONT SETBACK. (P117 LDO)

9. IN THE T-4 DISTRICT, 1 UNDERSTORY TREE SHALL BE PLANTED WITHIN THE FRONT SETBACK. (P117 LDO)

10. FINAL PLANT SELECTION MAY VARY WITH GROWER AVAILABLITY AT THE TIME OF CONSTRUCTION.

LINE	BEARING	DISTANCE
L1	N82°11'15"W	405.98'
L2	N07°48'45"E	35.08'
L3	N82°11'15"W	400.00'
L4	N07°48'45"E	40.00'
L5	N82°11'15"W	172.00'

TREE PLANTING PLAN

PRELIMINARY PLAT
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

7/17/20

EXISTING TREES

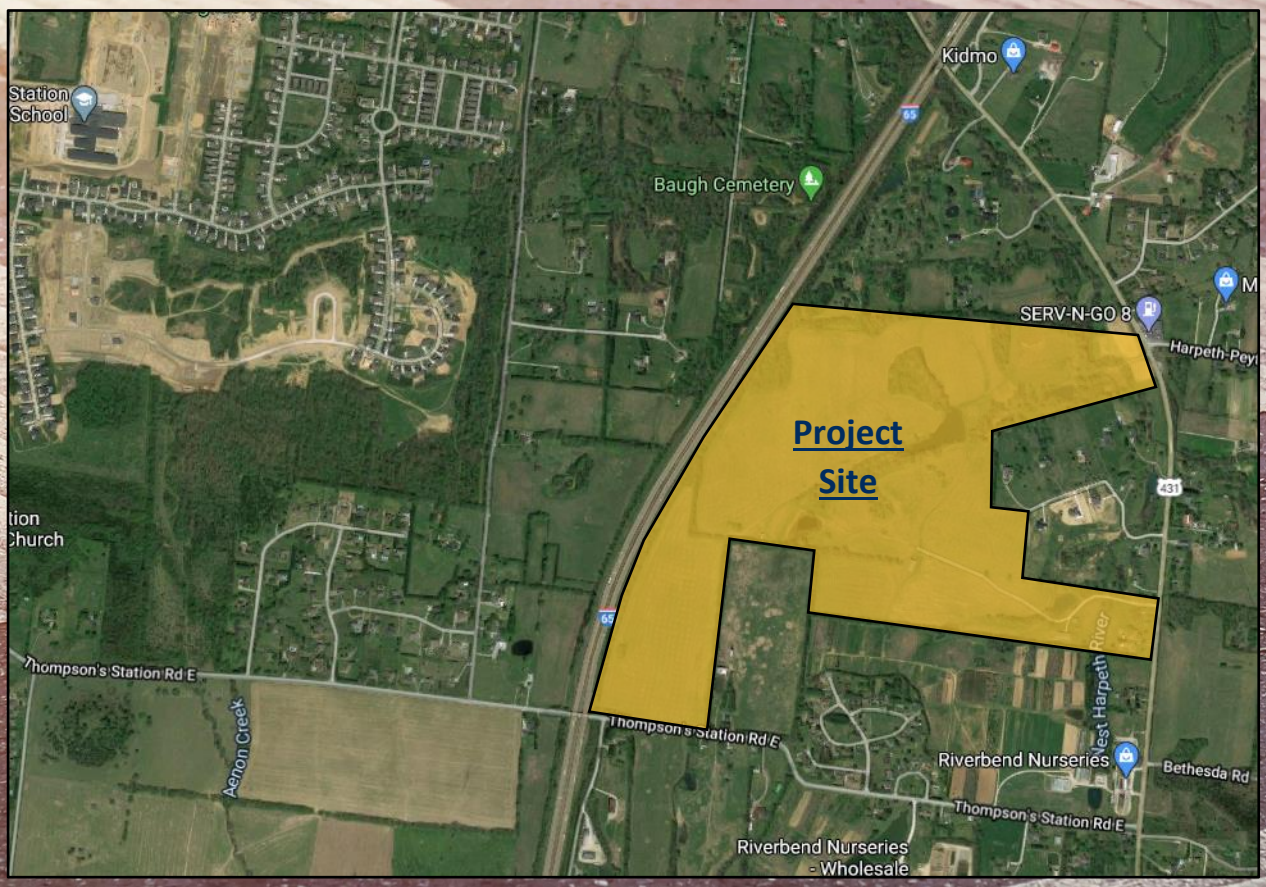
Point	Description															
1	40 oak	51	22 hack	101	32 hack	151	22 maple	201	30 maple	251	28 hack	301	20 cherry	351	22 cherry	401	20 oak
2	40 oak	52	24 hack	102	2-32 hack	152	20 hack	202	20 oak	252	20 oak	302	20 oak	352	22 cherry	402	24 hack
3	40 oak	53	24 hack	103	32 hack	153	20 hack	203	20 hack	253	26 oak	303	20 hack	353	20 hack	403	24 cherry
4	40 oak	54	24 hack	104	24 hack	154	24 oak	204		254	24 oak	304	22 oak	354	2-20 cherry	404	36 hack
5	40 oak	55	24 hack	105	24 hack	155	20 hack	205		255	24 oak	305	22 hack	355	22 oak	405	26 mapel
6	20 pine	56	24 hack	106	24 locus	156	20 hack	206	28 beech	256	24 hack	306	22 hack	356	20 oak	406	30 oak
7	22 maple	57	24 hack	107	20 hack	157	20 hack	207	28 oak	257	22 oak	307	20 cedar	357	22 hack	407	20 oak
8	20 walnut	58	24 oak	108	36 hack	158	22 hack	208	30 sycamore	258	24 mapel	308	22 oak	358	20 sycamore	408	20 oak
9	20 maple	59	36 hack	109	24 hack	159	22 hack	209	28 sycamore	259	22 oak	309	20 oak	359	22 oak	409	22 sycamore
10	20 maple	60	22 oak	110	20 cherry	160	22 oak	210	28 sycamore	260	26 oak	310	20 oak	360	24 hack	410	20 oak
11	22 maple	61	30 oak	111	36 oak	161	24 oak	211	28 mapel	261	24 beech	311	20 oak	361	28 oak	411	22 oak
12	20 maple	62	30 oak	112	40 osage	162	20 sycamore	212	34 oak	262	24 oak	312	24 oak	362	20 oak	412	20 oak
13	22 maple	63	22 oak	113	20 oak	163	28 oak	213	42 oak	263	22 oak	313	22 oak	363	2-22 oak	413	22 hack
14	22 maple	64	22 oak	114	mon	164	48 hack	214	20 oak	264	22 oak	314	20 oak	364	24 hack	414	24 hack
15	20 hack	65	48 oak	115	24 hack	165	20 hack	215	30 mapel	265	22 beech	315	24 oak	365	28 hack	415	20 hack
16	24 hack	66	22 oak	116	20 hack	166	20 hack	216	28 oak	266	24 beech	316	22 hack	366	20 hack	416	22 oak
17	24 hack	67	20 oak	117	20 hack	167	20 hack	217	30 oak	267	20 oak	317	22 oak	367	20 hack	417	20 hack
18	24 hack	68	20 oak	118	22 hack	168	20 oak	218	34 oak	268	20 oak	318	20 hack	368	20 hack	418	24 hack
19	24 hack	69	20 oak	119	26 maple	169	20 hack	219	3-20 oak	269	20 oak	319	2-24 mapel	369	20 hack	419	20 hack
20	28 sycamore	70	30 oak	120	48 oak damaged	170	22 beech	220	30 oak	270	22 oak	320	24 oak	370	20 oak	420	30 hack
21	26 sycamore	71	20 oak	121	36 oak	171	30 sycamore	221	20 oak	271	20 oak	321	24 oak	371	20 oak	421	24 hack
22	26 oak	72	20 cherry	122	24 hack	172	20 oak	222	22 oak	272	20 sycamore	322	28 oak	372	20 hack	422	20 hack
23	36 oak	73	22 oak	123	30 oak	173	30 sycamore	223	20 oak	273	24 oak	323	20 oak	373	36 oak	423	24 hack
24	40 oak	74	22 hickory	124	26 oak	174	20 cherry	224	26 oak	274	22 oak	324	20 oak	374	22 hack	424	20 beech
25	30 hack	75	22 oak	125	28 maple	175	24 sycamore	225	24 oak	275	20 oak	325	30 oak	375	24 oak	425	24 oak
26	30 hack	76	22 oak	126	24 oak	176	30 oak	226	26 oak	276	20 oak	326	22 oak	376	24 hack	426	24 oak
27	30 hack	77	22 oak	127	30 maple	177	30 oak	227	20 oak	277	20 oak	327	22 oak	377	20 hack	427	20 hbsk
28	30 hack	78	32 oak	128	24 hack	178	24 oak	228	22 oak	278	32 beech	328	20 oak	378	22 oak	428	30 oak
29	20 hack	79	24 hack	129	20 oak	179	20 hack	229	24 oak	279	22 oak	329	24 hack	379	24 oak	429	30 hack
30	20 hack	80	22 oak	130	20 oak	180	2-20oak	230	26 sycamore	280	36 beech	330	38 hack	380	24 oak	430	24 oak
31	20 hack	81	22 oak	131	20 oak	181	48 oak	231	28 oak	281	20 oak	331	22 oak	381	24 hack	431	20 hack
32	20 hack	82	30 oak	132	24 hack	182	20 oak	232	22 oak	282	2-22 oak	332	22 oak	382	24 hack	432	20 hack
33	24 hack	83	22 oak	133	28 hack	183	24 oak	233	24 oak	283	22 oak	333	22 oak	383	20 hack	433	20 hack
34	20 hack	84	20 sycamore	134	24 hack	184	20 maple	234	24 oak	284	2-22 oak	334	22 mapel	384	20 hack	434	20 oak
35	20 hack	85	60 sycamore	135	24 hack	185	30 maple	235	20 oak	285	28 oak	335	20 oak	385	26 cherry	435	20 hack
36	30 hack	86	50 oak	136	36 hack	186	22 oak	236	28 oak	286	28 mapel	336	24 oak	386	20 mapel	436	20 hack
37	20 hack	87	24 hack	137	24 oak	187	24 oak	237	20 hack	287	24 oak	337	24 oak	387	20 oak	437	22 hack
38	32 hack	88	36 oak	138	24 oak	188	30 beech	238	20 hickory	288	20 oak	338	24 oak	388	32 hickory	438	24 beech
39	32 hack	89	24 oak	139	24 oak	189	3-20 sycamore	239	20 cherry	289	20 sycamore	339	20 mapel	389	32 oak	439	20 hack
40	30 hack	90	24 oak	140	26 oak	190	30 sycamore	240	20 oak	290	36 oak	340	28 oak	390	20 oak	440	20 hack
41	24 hack	91	20 hack	141	22 oak	191	22 oak damaged	241	20 oak	291	20 oak	341	22 oak	391	20 oak	441	20 tulrk
42	30 hack	92	30 locus	142	22 oak	192	24 hackd	242	20 sycamore	292	28 sycamore	342	24 hickory	392	20 oak	442	20 hack
43	24 hack	93	20 hack	143	24 hack	193	32 hickory	243	26 sycamore	293	28 sycamore	343	20 oak	393	20 oak	443	20 hack
44	24 hack	94	24 hack	144	24 hack	194	30 cmp	244	32 sycamore	294	20 hack	344	24 oak	394	20 oak	444	20 hack
45	20 locus	95	24 oak	145	32 oak	195	30 cmp	245	2-20 oak	295	20 oak	345	34 oak	395	24 oak	TOTAL	10,999 INCHES
46	20 hack	96	20 locus	146	24 oak	196	2-20 oak	246	32 beech	296	20 oak	346	26 hack	396	28 oak		
47	20 hack	97	24 locus	147	22 oak	197	20 beech	247	20 oak	297	22 cherry	347	24 oak	397	20 oak		
48	24 hack	98	24 hack	148	24 hack	198	20 oak	248	22 hack	298	24 oak	348	24 hack	398	20 oak		
49	48 hack	99	32 hack	149	24 beech	199	24 oak	249	24 oak	299	20 oak	349	40 hack	399	20 hack		
50	22 hack	100	32 hack	150	20 oak	200	3-30 sycamore	250	28 hack	300	20 hack	350	38 hack	400	20 hack		

S87°46'39"W 787.60'(R)
DARREL E. REIFSCHNEIDER
DEED BOOK 1662, PAGE 557,
TAX MAP 144, PARCEL 32.00
D1 ZONING
S.L. PARSLEY JR. ER. UX.
DEED BOOK 260
PAGE 286
TAX MAP 144,
PARCEL 34.00
MGA-1 ZONING
N56°21'22"W 50.00'(R)
S0°51'53"W 487.25'(R)
N87°04'55"E 618.23'(R)(C)
N87°29'33"E 810.66'(C)
N87°39'00"E 265.22'
S81°32'41"E 264.86'
S85°35'11"E 1186.91'(R)
N78°30'E 263.00'(R)
S.S.E. 2704 +/- (U.S.E.) 3552.52'(M)
199.86' N11°05'E
306.00'(R)
N87°04'55"E 618.23'(R)(C)
ONIDA DRIVE
DARREL E. REIFSCHNEIDER REV LIV TRUST
DEED BOOK 6753, PAGE 693
TAX MAP 144, PARCEL 80.03
D1 ZONING
N89°29'W 464.50'(R)
S.S.E. 2705.93'(M) 2705.00'(R)
S.S.E. 324.4'(M)
WEST HARPETH RIVER
HARPETH PEYTONSVILLE RD
DARREL E. REIFSCHNEIDER REV LIV TRUST
DEED BOOK 7072, PAGE 346
TAX MAP 144, PARCEL 80
D1 ZONING
DARREL E. REIFSCHNEIDER
DEED BOOK 6727, PAGE 994
TAX MAP 144, PARCEL 80.02
D1 ZONING
CIVIL SPACE 3
CIVIL SPACE 4A
CIVIL SPACE 4B
CIVIL SPACE 5
CIVIL SPACE 2
CIVIL SPACE 1
CIVIL SPACE 6
DETENTION
ADRIEL DRIVE
ACHAK DRIVE
JACY WAY
BIMISI DRIVE
HANIA WAY
ADAHY WAY
NITA DRIVE
WALKING TRAIL
DELSY DRIVE
CHANTON DRIVE
DYANI WAY
APONI COURT
HOWI COURT
FALA COURT
SERNEAS WAY
LEWISBURG PIKE
INTERSTATE I-65
N33°40'46"E 142.41' (M)
S.S.E. 2,549.25'(M)
S70°01'46"W 1095.09'(R)
303.09'(R)
323.67'(R)
298.26'(R)
141.57'(R)
N20°56'57"W 484.67'(R)
N28°21'04"W 728.41'(R)
N28°21'04"W 728.34'(R)
N20°22'W 140.73'(R)
S84°21'33"W 407.32'(R)
S86°48'00"E 356.09'(R)
N03°22'42"E 456.62'(R)
N63°27'42"E 456.62'(R)
134.92'(R)
167.70'(R)
N63°27'42"E 117.3'(R)
141.30'(R)
297.70'(R)
N03°22'42"E 297.58'(R)
N86°06'31"W 565.5' (R)
N00°04'30"E 624.17'(R)
S00°04'30"W 624.17'(R)
N86°48'00"W 351.12'(R)
N81°19'E 352.43'
S86°53'31"W 926.24'
S81°55'07"W 266.91'(M)
N81°35'36"E 4.97'(C)
S00°12'30"W 330.00'(R)
S00°12'30"W 260.69'(R)
260.69'(R)
S00°12'30"W 330.00'(R)
S00°12'30"W 330.00'(R)
S00°12'30"W 330.00

TRAFFIC IMPACT STUDY

PLEASANT CREEK

THOMPSON'S STATION, TENNESSEE



PREPARED FOR:

PLEASANT CREEK INVESTMENTS, LLC

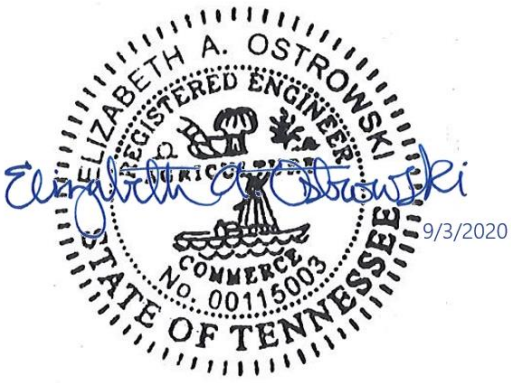
SEPTEMBER 2020

KCI TECHNOLOGIES, INC. // 500 11TH AVENUE NORTH, NASHVILLE, TN 37203 // KCI.COM

TRAFFIC IMPACT STUDY
PLEASANT CREEK
THOMPSON'S STATION, TENNESSEE

PREPARED FOR:

PLEASANT CREEK INVESTMENTS, LLC



PREPARED BY:

KCI TECHNOLOGIES, INC

500 11th Avenue North, Suite 290
Nashville, TN 37203
615.370.8410 office 615.370.8455 fax
www.kci.com

TABLE OF CONTENTS

1. INTRODUCTION AND PROJECT DESCRIPTION 1
2. EXISTING CONDITIONS 3
2.1 Existing Roadway Network 3
2.2 Existing Traffic Volumes 9
2.3 Existing Traffic Operations 11
3. BACKGROUND TRAFFIC VOLUMES 13
3.1 Establishing Background Volumes 13
3.2 Background Traffic Operations 15
4. IMPACTS 17
4.1 Trip Generation 17
4.2 Trip Distribution and Traffic Assignment 18
4.3 Capacity / Level of Service Analyses 21
4.4 Queue Length Analysis 26
4.5 Signal Warrant Analysis 27
5. ANALYSIS OF SITE PLAN 33
5.1 Site Access Review 33
5.2 Pedestrian, Bicycle, and Transit Access 33
5.3 Sight Distance Analysis 33
5.4 Lane Warrant Analysis 34
5.5 Evaluation of Off-Site Intersections 35
6. RECOMMENDATIONS 37
APPENDICES 39

LIST OF FIGURES

FIGURE 1. LOCATION OF THE PROJECT SITE 2
FIGURE 2. EXISTING LANEAGE 8
FIGURE 3. EXISTING PEAK HOUR TRAFFIC VOLUMES 10
FIGURE 4. BACKGROUND PEAK HOUR TRAFFIC VOLUMES 14
FIGURE 5. DISTRIBUTION OF TRAFFIC GENERATED BY THE PROJECT SITE 19
FIGURE 6. ASSIGNMENT OF TRAFFIC GENERATED BY THE PROJECT SITE 20
FIGURE 7. TOTAL PROJECTED PEAK HOUR TRAFFIC VOLUMES 23
FIGURE 8. WARRANT 2, FOUR-HOUR VEHICULAR VOLUME (EXISTING) 29
FIGURE 9. WARRANT 2, FOUR-HOUR VEHICULAR VOLUME (PROJECTED) 30
FIGURE 10. WARRANT 3, PEAK-HOUR VEHICULAR VOLUME (EXISTING) 31
FIGURE 11. WARRANT 3, PEAK-HOUR VEHICULAR VOLUME (PROJECTED) 31

LIST OF TABLES

TABLE 1. TDOT COUNT STATION DATA 9
TABLE 2. DESCRIPTIONS OF LEVEL OF SERVICE 11
TABLE 3. EXISTING PEAK HOUR LEVELS OF SERVICE 12
TABLE 4A. BACKGROUND AM PEAK HOUR LEVELS OF SERVICE 16
TABLE 4B. BACKGROUND PM PEAK HOUR LEVELS OF SERVICE 16
TABLE 5. DEVELOPMENT TRIP GENERATION 17
TABLE 6A. PROJECTED AM PEAK HOUR LEVELS OF SERVICE 24
TABLE 6B. PROJECTED PM PEAK HOUR LEVELS OF SERVICE 25
TABLE 7. STUDY INTERSECTIONS 95TH PERCENTILE QUEUE LENGTH 26
TABLE 8. MINIMUM VEHICULAR VOLUMES FOR WARRANT 1A 27
TABLE 9. MINIMUM VEHICULAR VOLUMES FOR WARRANT 1B 28
TABLE 10. TRAFFIC SIGNAL WARRANT ANALYSIS 32
TABLE 11. INTERSECTION SIGHT DISTANCE ANALYSIS 34

EXECUTIVE SUMMARY

Project Description

The proposed Pleasant Creek development is located on the west side of Lewisburg Pike (SR 106/US 431), east of I-65 in Thompson's Station, Tennessee. According to the developer, the proposed development includes approximately 327 single-family residential homes, 90 single-family townhomes, 5,500 square feet of retail, 2,000 square feet of fitness center, and 2,000 square feet of bank on approximately 179 acres. Access to the development is planned to be provided by two access drives, located along Lewisburg Pike (SR 106/US 431). The northern access will be provided via the new eastbound approach to the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth Peytonsville Road. The southern access will be located approximately 1,100 feet north of the intersection of Lewisburg Pike (SR 106/US 431) and Bethesda Road. The purpose of this study is to analyze the access plan and the traffic impacts associated with this proposed development.

Data Collection

In order to provide data for the traffic impact analysis, manual traffic counts were conducted at the following intersections:

1. Lewisburg Pike (SR 106/US 431) and Thompson's Station Road East (unsignalized)
2. Lewisburg Pike (SR 106/US 431) and Bethesda Road (unsignalized)
3. Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road (unsignalized)
4. Thompson's Station Road East and Buckner Lane (signalized)
5. Thompson's Station Road East and Pantall Road (unsignalized)

KCI Technologies, Inc. conducted the traffic counts from 7:00 – 9:00 AM and 4:00 – 6:00 PM on a typical weekday in July 2020; however, given the changes in traffic patterns resulting from Covid-19, these counts were compared to historic counts as a point of reference. Traffic volumes from counts gathered as part of Thompson's Station 2015 Comprehensive Traffic Study were grown at an annual growth rate of 7% for five years to make this evaluation. The growth rate was based upon historic TDOT AADT data from nearby count stations. To be conservative, the maximum turning movement volumes from either of the count methodologies (i.e., the existing (2020) volumes or the grown volumes using 2015 counts) were utilized for this study.

Projection of Future Traffic Volumes

In order to account for the traffic growth prior to the completion of the proposed project, background traffic volumes were established. Then, the estimated total project-generated traffic volumes for the proposed development were added to the background peak hour traffic volumes in order to obtain the total projected peak hour traffic volumes for the study area intersections.

Conclusions and Recommendations

The analyses presented in this study indicate that the impacts of the proposed project on the existing street network will be manageable by providing the recommendations below. These specific recommendations will provide safe and efficient traffic operations within the study area following the completion of the proposed project. The recommendations are as follows:

Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A

- Preliminary signal warrant analysis determined that a signal is warranted under existing conditions. However, these preliminary analyses were based on traffic projections made due to Covid-19 and not on actual counts representing traffic conditions without the impacts of Covid-19. Therefore, a full signal warrant analysis should be completed when traffic conditions have stabilized and prior to the completion of 35 lots within the Pleasant Creek development.
- Until a signal is installed, the eastbound approach of Site Access A should be stop-controlled, and a stop bar and R1-1 'Stop' sign should be installed on the egress approach.
- Site Access A should be designed to include sufficient width for one entering lane and three exiting lanes. The exiting approach should include one left-turn lane with a minimum of 125 feet of storage, one through lane, and one right-turn lane with a minimum of 125 feet of storage.
- Provide a northbound left-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 150 feet of storage length.
- Provide a southbound right-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 75 feet of storage length.

Lewisburg Pike (SR 106/US 431) and Site Access B

- The eastbound approach of Site Access B should be stop-controlled, and a stop bar and R1-1 'Stop' sign should be installed on the egress approach.

- Site Access B should be designed to include sufficient width for one entering lane and two exiting lanes. The exiting approach should include one left-turn lane and one right-turn lane.
- Provide a northbound left-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 150 feet of storage length.
- Provide a southbound right-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 75 feet of storage length.

Additional Recommendations

- As part of the construction of the project, all internal and external roadway connections should be designed such that the departure sight triangles, as specified by AASHTO, will be clear of all sight obstructions, including landscaping, existing vegetation, monument signs/walls, fences, etc.
- Final design of internal roadways and parking should meet all Town of Thompson's Station standards. Internal intersections should be two-way stop-controlled unless all-way stop control warrants are met.

In summary, based on the analyses conducted, no further recommendations are presented for the proposed Pleasant Creek development.

1. INTRODUCTION AND PROJECT DESCRIPTION

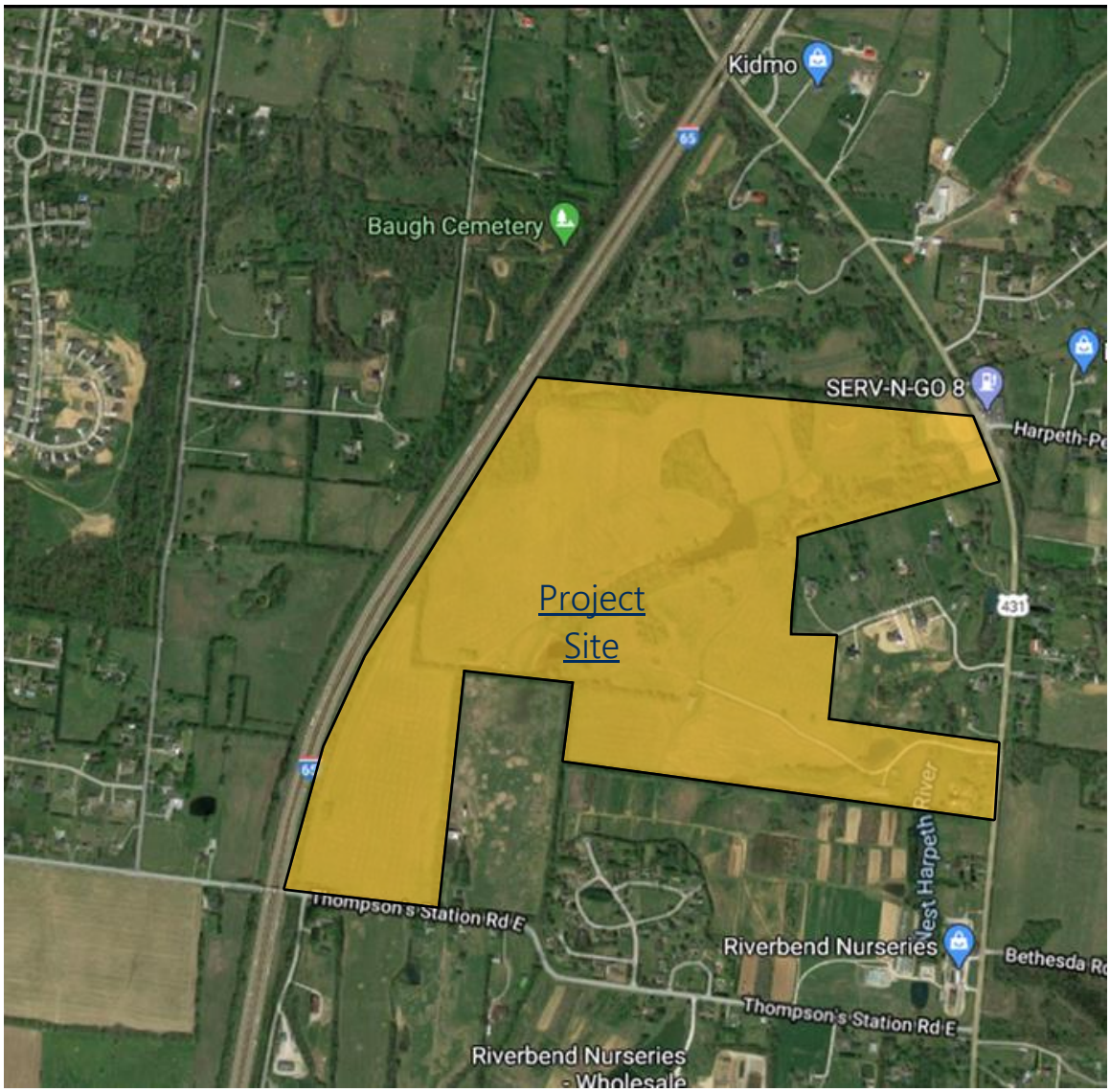
The purpose of this study is to analyze the traffic impacts and access plan associated with the proposed Pleasant Creek development located on the west side of Lewisburg Pike (SR 106/US 431), east of I-65 in Thompson's Station, Tennessee. According to the developer, the proposed development includes approximately 327 single-family residential homes, 90 single-family townhomes, 5,500 square feet of retail, 2,000 square feet of fitness center, and 2,000 square feet of bank on approximately 179 acres.

As shown by Figure 1, the property is located along Lewisburg Pike (SR 106/US 431) northwest of the intersection of Lewisburg Pike (SR 106/US 431) and Thompson's Station Road East. The property is currently zoned TC (Transect Community). The proposed development is within an area that is characterized by low-density land uses. The property is generally bounded on the west by I-65, on the south by Thompson Station Road and existing residential developments, on the east by Lewisburg Pike (SR 106/US 431), and on the north by undeveloped land and residential developments.

The current site plan for the Pleasant Creek development is shown in Appendix A. Based on this site plan, proposed vehicular access for the development is planned to be provided by two access drives, located along Lewisburg Pike (SR 106/US 431). The northern access will be provided via the new eastbound approach to the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth Peytonsville Road. The southern access will be located approximately 1,100 feet north of the intersection of Lewisburg Pike (SR 106/US 431) and Bethesda Road. Surface parking is planned to accommodate the proposed development.

In this study, the current operating characteristics of the adjacent roadways and intersections in the vicinity of the project site are evaluated. The expected trips generated by the proposed development are determined and distributed to the roadway network. The adjacent roadways and intersections are then reevaluated to determine the anticipated traffic impacts of the project. Finally, recommendations are presented, including roadway improvements and/or traffic control improvements that are needed to accommodate the expected traffic.

FIGURE 1. LOCATION OF THE PROJECT SITE



N

Location of the Project Site
(Not to Scale)

Figure 1.

2. EXISTING CONDITIONS

2.1 Existing Roadway Network

Local access to the site will be provided by Lewisburg Pike (SR 106/US 431), Thompson's Station Road East, Bethesda Road, Harpeth-Peytonsville Road, Buckner Lane, and Pantall Road. A description of these roadways within the project vicinity is as follows:

Lewisburg Pike (SR 106/US 431) is a two-way roadway that generally travels in a north-south direction with one travel lane in each direction. Within the study area, Lewisburg Pike (SR 106/US 431) provides connection between I-840 to the north and Thompson's Station Road East to the south. According to the Thompson's Station's *Major Thoroughfare Plan*, Lewisburg Pike (SR 106/US 431) is categorized as an urban arterial in the vicinity of the project site. The posted speed limit on Lewisburg Pike (SR 106/US 431) is 55 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Lewisburg Pike (SR 106/US 431) near the project site.

Lewisburg Pike looking north, east of the project site

Thompson's Station Road East is a two-way roadway that generally travels in an east-west direction with one travel lane in each direction. Thompson's Station Road East provides connection between US 31 to the west and Lewisburg Pike (SR 106/US 431) to the east. According to the Thompson's Station's *Major Thoroughfare Plan*, Thompson's Station Road East is categorized as an urban collector in the vicinity of the project site. The posted speed limit on Thompson's Station Road East is 45 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Thompson's Station Road East near the project site.

Thompson's Station Road East looking east, south of the project site

Bethesda Road is a two-way roadway that generally travels in an east-west direction with one travel lane in each direction. Within the study area, Bethesda Road provides connection between Lewisburg Pike (SR 106/US 431) to the west and Bethesda-Duplex Road to the east. Because Bethesda Road is within Williamson County, and outside the boundaries of Thompson's Station, it is not functionally classified in the Town of Thompson's Station's *Major Thoroughfare Plan*. However, according to TDOT's Functional Classification Map, Bethesda Road is categorized as a minor collector in the vicinity of the project site. The posted speed limit on Bethesda Road is 45 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Bethesda Road near the project site.

Bethesda Road looking east, east of the project site

Harpeth-Peytonsville Road is a two-way that generally travels in an east-west direction with one travel lane in each direction. Within the study area, Harpeth-Peytonsville Road provides connection between Lewisburg Pike (SR 106/US 431) to the west and Peytonsville-Trinity Road near I-840 to the east. Because Harpeth-Peytonsville Road is within Williamson County, and outside the boundaries of Thompson's Station, it is not functionally classified in the Town of Thompson's Station's *Major Thoroughfare Plan*. However, according to TDOT's Functional Classification Map, Harpeth-Peytonsville is categorized as a minor collector in the vicinity of the project site. The posted speed limit on Harpeth-Peytonsville Road is 50 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Harpeth-Peytonsville Road near the project site.

Harpeth-Peytonsville looking east, east of the project site

Buckner Lane looking north, south of the project site

Buckner Lane is a two-way roadway that generally travels in a north-south direction with one travel lane in each direction. Within the study area, Buckner Lane provides connection between Thompson's Station Road East to the north and Highway 247 to the south. Because Buckner Lane is within the City of Spring Hill, it is not functionally classified in the Town of Thompson's Station's *Major Thoroughfare Plan*. However, according to the *TDOT Functional Classification Map*, Buckner Lane is categorized as a major collector in the vicinity of the project site. The posted speed limit on Buckner Lane is 40 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Buckner Lane near the project site.

Pantall Road looking north, west of the project site

Pantall Road is a two-way roadway that generally travels in a north-south direction with one travel lane in each direction. Within the study area, Pantall Road provides connection between Thompson's Station Road East to the south and Critz Lane to the north, near Lewisburg Pike (SR 106/US 431). According to the Thompson's Station's *Major Thoroughfare Plan*, Pantall Road is categorized as an urban collector in the vicinity of the project site. The posted speed limit on Pantall Road is 40 mph near the project site. No sidewalks, on-street parking, transit, or bicycle facilities are provided on Pantall Road near the project site.

The study area includes five existing intersections described as follows:

Lewisburg Pike (SR 106/US 431) and Thompson's Station Road East is an unsignalized intersection with three approaches. The northbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. The eastbound approach of Thompson's Station Road East is stop-controlled and includes one lane for all movements. The southbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. No pedestrian, bicycle, or transit facilities exist at the intersection.

Looking north on Lewisburg Pike at Thompson's Station Road East

Lewisburg Pike (SR 106/US 431) and Bethesda Road is an unsignalized intersection with three approaches. The northbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. The southbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. The westbound approach of Bethesda Road is stop-controlled and includes one lane for all movements. No pedestrian, bicycle, or transit facilities exist at the intersection.

Looking south on Lewisburg Pike at Bethesda Road

Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road is an unsignalized intersection with three approaches. The northbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. The southbound approach of Lewisburg Pike (SR 106/US 431) operates freely and includes one lane for all movements. The westbound approach of Harpeth-Peytonsville Road is stop-controlled and includes one lane for all movements. No pedestrian, bicycle, or transit facilities exist at the intersection.

Looking south on Lewisburg Pike at Harpeth-Peytonsville Road

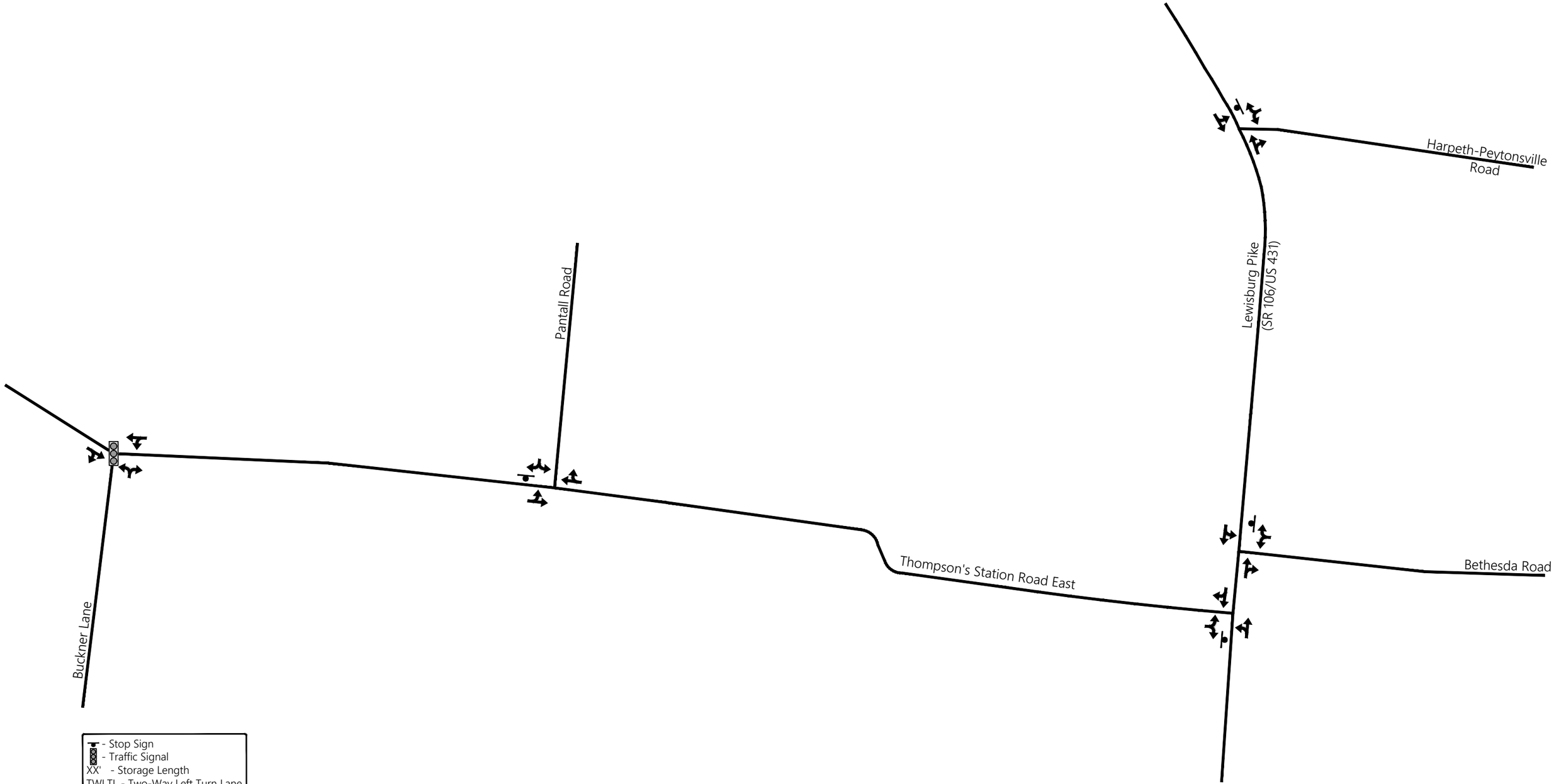
Thompson's Station Road East and Buckner Lane is a signalized intersection with three approaches. The northbound approach of Buckner Lane incudes one lane for all movements. The eastbound approach of Thompson's Station Road East includes one lane for all movements. The westbound approach of Thompson's Station Road East includes one lane for all movements. Protected-permitted left-turn signal phasing is provided on the westbound approach. No pedestrian, bicycle, or transit facilities exist at the intersection.

Looking west on Thompson's Station Road East at Buckner Lane

Thompson's Station Road East and Pantall Road is an unsignalized intersection with three approaches. The eastbound approach of Thompson's Station Road East operates freely and includes one lane for all movements. The southbound approach of Pantall Road is stop-controlled and includes one lane for all movements. The westbound approach of Thompson's Station Road East operates freely and includes one lane for all movements. No pedestrian, bicycle, or transit facilities exist at the intersection.

Looking south on Pantall Road at Thompson's Station Road East

The existing laneage at the study intersections is illustrated in Figure 2.



Existing Laneage
(Not to Scale)

Figure 2.

2.2 Existing Traffic Volumes

In order to provide data for the traffic impact analysis, traffic counts were conducted at the following intersections:

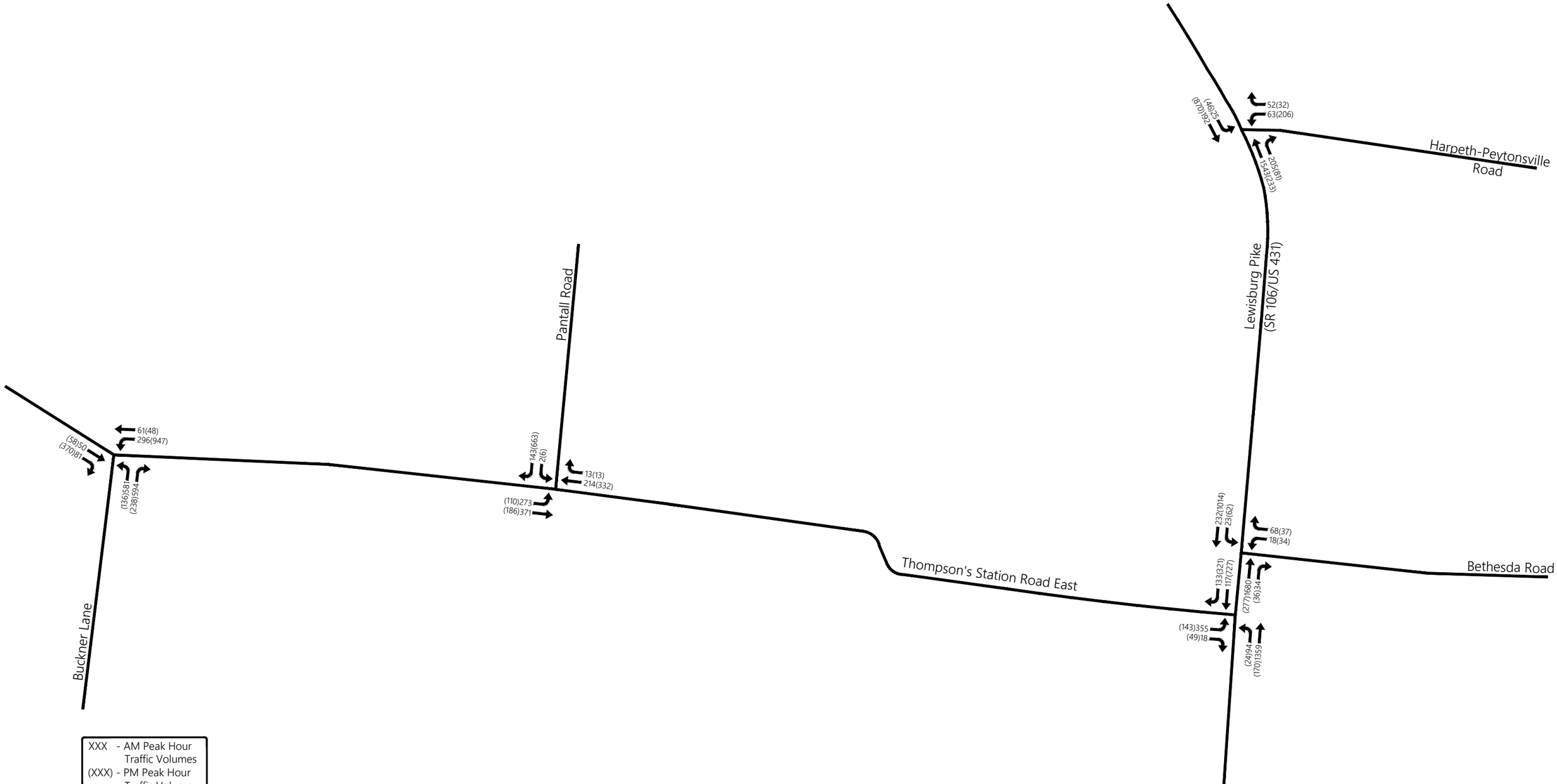
1. Lewisburg Pike (SR 106/US 431) and Thompson's Station Road East (unsignalized)
2. Lewisburg Pike (SR 106/US 431) and Bethesda Road (unsignalized)
3. Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road (unsignalized)
4. Thompson's Station Road East and Buckner Lane (signalized)
5. Thompson's Station Road East and Pantall Road (unsignalized)

KCI Technologies, Inc. conducted traffic counts from 7:00 – 9:00 AM and 4:00 – 6:00 PM on a typical weekday in July 2020; however, given the changes in traffic patterns resulting from Covid-19, these counts were compared to historic counts. Traffic counts gathered as part of Thompson's Station 2015 Comprehensive Traffic Study were grown at an annual growth rate of 7% for five years to make this evaluation. The growth rate was based upon historic TDOT AADT data from nearby count stations. To be conservative, the maximum turning movement volumes from either of the count methodologies (i.e., the existing (2020) volumes or the grown volumes using 2015 counts) were utilized for this study. These volumes were then balanced between all study intersections. The existing peak hour turning movement volumes are presented in Figure 3. A detailed summary of the traffic counts is included in Appendix B.

In addition to the above information, average daily traffic volumes were obtained from the Tennessee Department of Transportation (TDOT). There are four TDOT count stations located in the vicinity of the project site. The count station locations and annual average daily traffic (AADT) in 2018 are shown in Table 1. Additional TDOT Count Station data is included in Appendix C.

TABLE 1. TDOT COUNT STATION DATA

ROADWAY	LOCATION	STATION NO.	2018 AADT (vpd)
Lewisburg Pike (SR 106/US 431)	East of I-65; Between Cascade Eastgate Boulevard and Wilhoite Road	65	6,188
Thompson's Station Road East	West of I-65; Between Columbia Pike and Village Drive	66	4,009
Bethesda Road	East of Lewisburg Pike (SR 106/US 431); Between Lewisburg Pike and Marlin Way	64	2,062
Harpeth-Peytonsville Road	East of Lewisburg Pike (SR 106/US 431); Between Dotson Road and Herbert Smithson Road	93	1,608



Existing Peak Hour Traffic Volumes
(Not to Scale)

Figure 3.

2.3 Existing Traffic Operations

To determine the current operation of the study intersections, capacity analyses were performed for the AM and PM peak hours. The capacity calculations were performed according to the methods outlined in the *Highway Capacity Manual*, 6th Edition. However, it should be noted that due to the limitations of HCM 6th Edition regarding intersections with non-NEMA phasing, the signalized intersection of Thompson's Station Road East and Buckner Road was analyzed using HCM 2000 methodologies under existing conditions only. The capacity analyses result in the determination of a Level of Service (LOS) for an intersection. The LOS is a concept used to describe how well an intersection or roadway operates. LOS A is the best, while LOS F is the worst. LOS D is typically considered as the minimum acceptable LOS for an intersection in an urbanized area. Table 2 presents the descriptions of LOS for signalized and unsignalized intersections.

TABLE 2. DESCRIPTIONS OF LEVEL OF SERVICE

LEVEL OF SERVICE	DESCRIPTION	UNSIGNALIZED CONTROL DELAY (sec/veh)	SIGNALIZED CONTROL DELAY (sec/veh)
A	Little or no delay	≤ 10.0	≤ 10.0
B	Short traffic delay	>10 and ≤ 15	>10 and ≤ 20
C	Average traffic delay	>15 and ≤ 25	>20 and ≤ 35
D	Long traffic delay	>25 and ≤ 35	>35 and ≤ 55
E	Very long traffic delay	>35 and ≤ 50	>55 and ≤ 80
F	Extreme traffic delay	> 50.0	> 80.0

Source: *Highway Capacity Manual*, TRB 2010

The results of the capacity analyses for the existing conditions at the study intersections are presented in Table 3. As shown, the overall intersection and critical movements for the study intersections operate at LOS D or better in the AM and PM peak hours with the following exceptions:

- Lewisburg Pike (SR 106/US 431) and Thompson's Station Road East
  - The eastbound approach operates at LOS F in the AM and PM peak hours.
- Lewisburg Pike (SR 106/US 431) and Bethesda Road
  - The westbound approach operates at LOS F in the AM peak and LOS E in the PM peak hour.

- Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road
  - The westbound approach operates at LOS F in the AM and PM peak hours.
- Thompson's Station Road East and Buckner Lane
  - The overall intersection operates at LOS F in the AM and PM peak hours.
- Thompson's Station Road East and Pantall Road
  - The southbound approach operates at LOS F in the PM peak hour.

Capacity analyses worksheets are included in Appendix D.

TABLE 3. EXISTING PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Approach Delay in sec/veh)	
		AM Peak Hour	PM Peak Hour
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	A (8.0)	B (11.1)
	Eastbound Approach	F (>300)	F (102.3)
Lewisburg Pike and Bethesda Road	Westbound Approach	F (259.8)	E (36.1)
	Southbound Left-Turn	C (17.0)	A (8.1)
Lewisburg Pike and Harpeth-Peytonsville Road	Westbound Approach	F (>300)	F (299.8)
	Southbound Left-Turn	C (15.1)	A (7.9)
Thompson's Station Road East and Buckner Lane[2]	Overall Intersection	F (111.2)	F (244.4)
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	A (8.5)	A (8.4)
	Southbound Approach	B (11.1)	F (84.3)

Notes: 1 - For stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection.
2 – HCM 2000 methods were used due to the incompatibility with NEMA phasing, which is not supported by HCM 6th Edition methods.

3. BACKGROUND TRAFFIC VOLUMES

3.1 Establishing Background Volumes

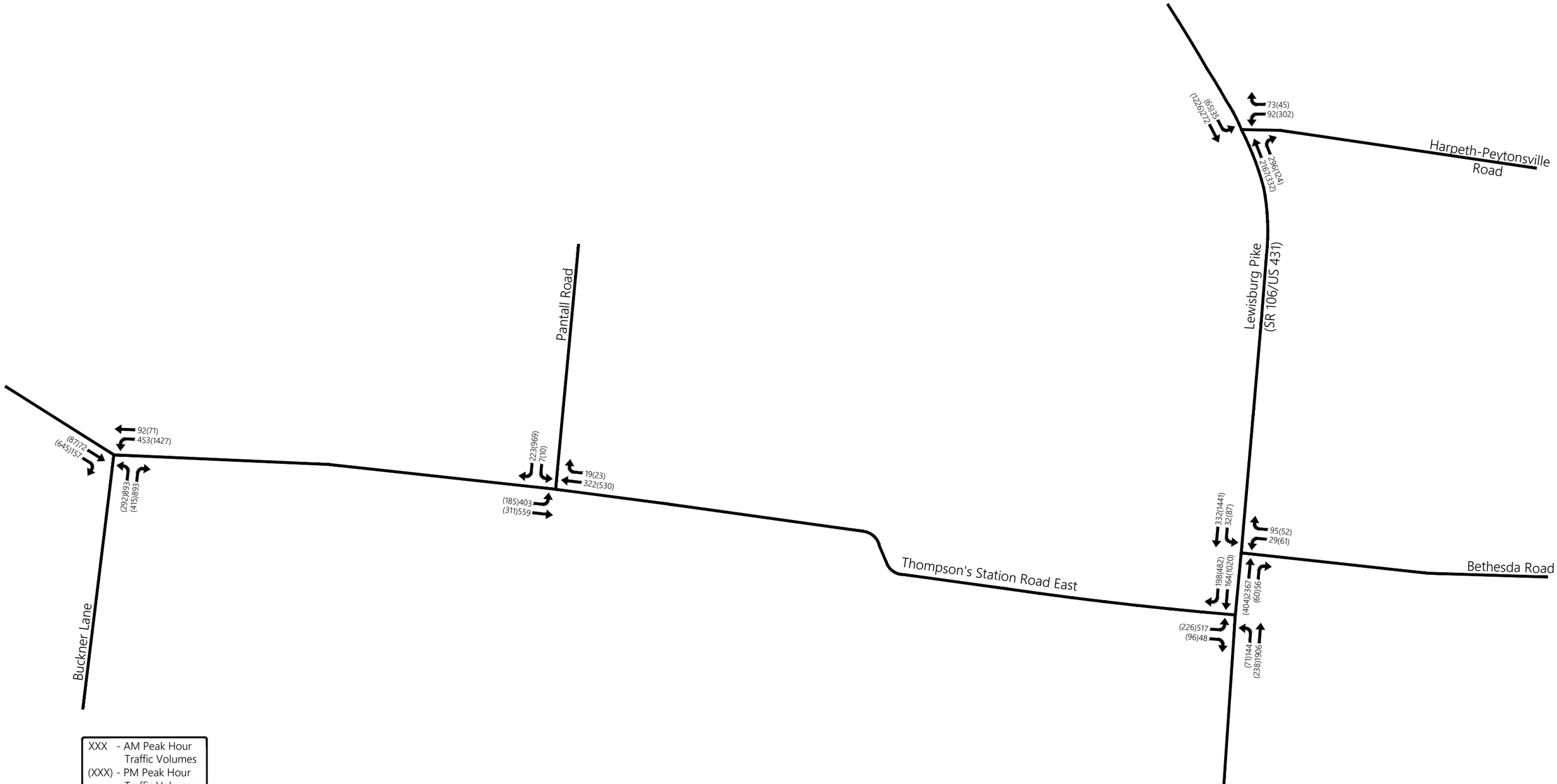
In order to account for the traffic growth prior to the completion of the proposed project, background traffic volumes were established. For the purposes of this traffic study, the proposed development was assumed to be completed by the year 2025, which is a 5-year horizon. Historical daily traffic volumes were obtained from the four TDOT count stations located in the vicinity of the project site. Since 2013, the combined traffic at these four TDOT count stations has increased by an average of 6.7 per year. The TDOT count station data is included in Appendix C.

A growth factor was applied to the existing peak hour traffic volumes to account for background growth for the future conditions. The existing peak hour traffic volumes at the study intersections were increased by 7.0% per year for five years to account for anticipated background traffic growth within the study area.

Additionally, per the scoping meeting with the City of Thompson's Station, the peak hour traffic volumes generated by the following developments were included as background traffic:

- Alexander Property – Located on southeast corner of the intersection of Thompson's Station Road East and Buckner Lane, approximately 1.25 miles west of the project site.
- Littlebury – Located on east side of Pantall Road, approximately 3,500 feet west of the project site.

Trip assignment for the background developments are included in Appendix E. The background peak hour traffic volumes for horizon year 2025 are presented in Figure 4. These volumes represent the peak hour traffic that is expected to be on the roadway in 2025 even if the proposed Pleasant Creek development is not completed.



Background Peak Hour Traffic Volumes
(Not to Scale)

Figure 4.

3.2 Background Traffic Operations

To determine the operation of the study area intersections under background conditions, capacity analyses were performed for the AM and PM peak hours. The analyses for the background conditions were based on the same lane configurations and signal timings as the existing conditions with some exceptions. The following roadway improvements were recommended by the Alexander Property traffic impact study. The improvements were incorporated into the network configuration of the background conditions.

Thompson's Station Road East and Buckner Lane

- Realign Buckner Lane between Thompson's Station Road East and Buckner Road. This realignment would relocate this intersection to approximately 600 feet west of Sherrie Street.
- Widen Thompson's Station Road East in order to provide a westbound left-turn lane.
- Widen Thompson's Station Road East in order to provide an eastbound right-turn lane with channelization to an added lane on Bucker Lane in the southbound direction.
- Install traffic signal control with permissive/protected left-turn signal phasing for Thompson's Station Road East.

As shown in Tables 4A and 4B, under background conditions, the capacity analyses indicate that the operational performances of the critical movements at the study intersections are generally expected to continue to operate at the same level of service as under existing conditions or continue to operate at LOS D or better in the AM and PM peak hours with the following exceptions:

- Lewisburg Pike (SR 106/US 431) and Bethesda Road
    - The westbound approach is expected to deteriorate from LOS E to LOS F in the PM peak hour.

It is important to note that the intersection of Thompson's Station Road East and Bucker Lane has improved operations between existing and background conditions due to the incorporated background improvements. Capacity analyses worksheets are included in Appendix D.

TABLE 4A. BACKGROUND AM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Approach Delay in sec/veh)	
		EXISTING	BACKGROUND
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	A (8.0)	A (8.6)
	Eastbound Approach	F (>300)	F (>300)
Lewisburg Pike and Bethesda Road	Westbound Approach	F (259.8)	F (>300)
	Southbound Left-Turn	C (17.0)	D (33.4)
Lewisburg Pike and Harpeth-Peytonsville Road	Westbound Approach	F (>300)	F (>300)
	Southbound Left-Turn	C (15.1)	D (26.1)
Thompson's Station Road East and Buckner Lane	Overall Intersection	F (111.2)	D (41.9)
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	A (8.5)	A (9.8)
	Southbound Approach	B (11.1)	C (23.2)

Note: 1 - For stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection.

TABLE 4B. BACKGROUND PM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Approach Delay in sec/veh)	
		EXISTING	BACKGROUND
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	B (11.1)	C (16.2)
	Eastbound Approach	F (102.3)	F (>300)
Lewisburg Pike and Bethesda Road	Westbound Approach	E (36.1)	F (>300)
	Southbound Left-Turn	A (8.1)	A (8.7)
Lewisburg Pike and Harpeth-Peytonsville Road	Westbound Approach	F (299.8)	F (>300)
	Southbound Left-Turn	A (7.9)	A (8.2)
Thompson's Station Road East and Buckner Lane	Overall Intersection	F (244.4)	F (118.5)
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	A (8.4)	A (9.6)
	Southbound Approach	F (84.3)	F (>300)

Note: 1 - For stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection.

4. IMPACTS

4.1 Trip Generation

A traffic generation process was used to estimate the amount of traffic expected to be generated by the proposed Pleasant Creek development. Factors for the trip generation were taken from ITE's *Trip Generation*, 10th Edition. According to the developer, the proposed development includes approximately 327 single-family residential homes, 90 single-family townhomes, 5,500 square feet of retail, 2,000 square feet of fitness center, and 2,000 square feet of bank. It should be noted that the 90 single-family townhomes will be analyzed using LUC 210 due to the planned nature of the development, as well as, LUC being more conservative than LUC 220 (Low Rise Multi-Family). Therefore, the total units for analysis is 417. Additionally, the fitness center will be analyzed using LUC 820 due to the planned nature of the development, as well as, LUC being more conservative than LUC 492 (Health/Fitness Club).

No reductions were applied to the base trip generation to account for internal capture, alternative modes, or pass-by trips.

Table 5 presents the daily, AM and PM peak hour trip generation for the proposed development. As shown in Table 5, the proposed development can be expected to generate approximately 5,164 new vehicle trips per day. The AM and PM peak hour trip generations will equal approximately 327 and 545 new trips, respectively. These trips represent the new traffic that will be generated by the proposed Pleasant Creek development. The calculations for trip generation are included in Appendix F.

TABLE 5. DEVELOPMENT TRIP GENERATION

LAND USE	SIZE	GENERATED TRAFFIC				
		DAILY TRAFFIC	AM PEAK		PM PEAK	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (LUC 210)	417 Units	3,868	75	226	252	148
Shopping Center (LUC 820)	1,500 s.f.	346	1	0	12	12
Shopping Center (LUC 820)	4,000 s.f.	674	2	2	24	26
Shopping Center (LUC 820)	2,000 s.f.	76	1	1	14	16
Drive-In Bank (LUC 912)	2,000 s.f.	200	11	8	21	21
NEW TRIPS		5,164	90	237	322	223
			327		545	

Source: *Trip Generation*, 10th Edition

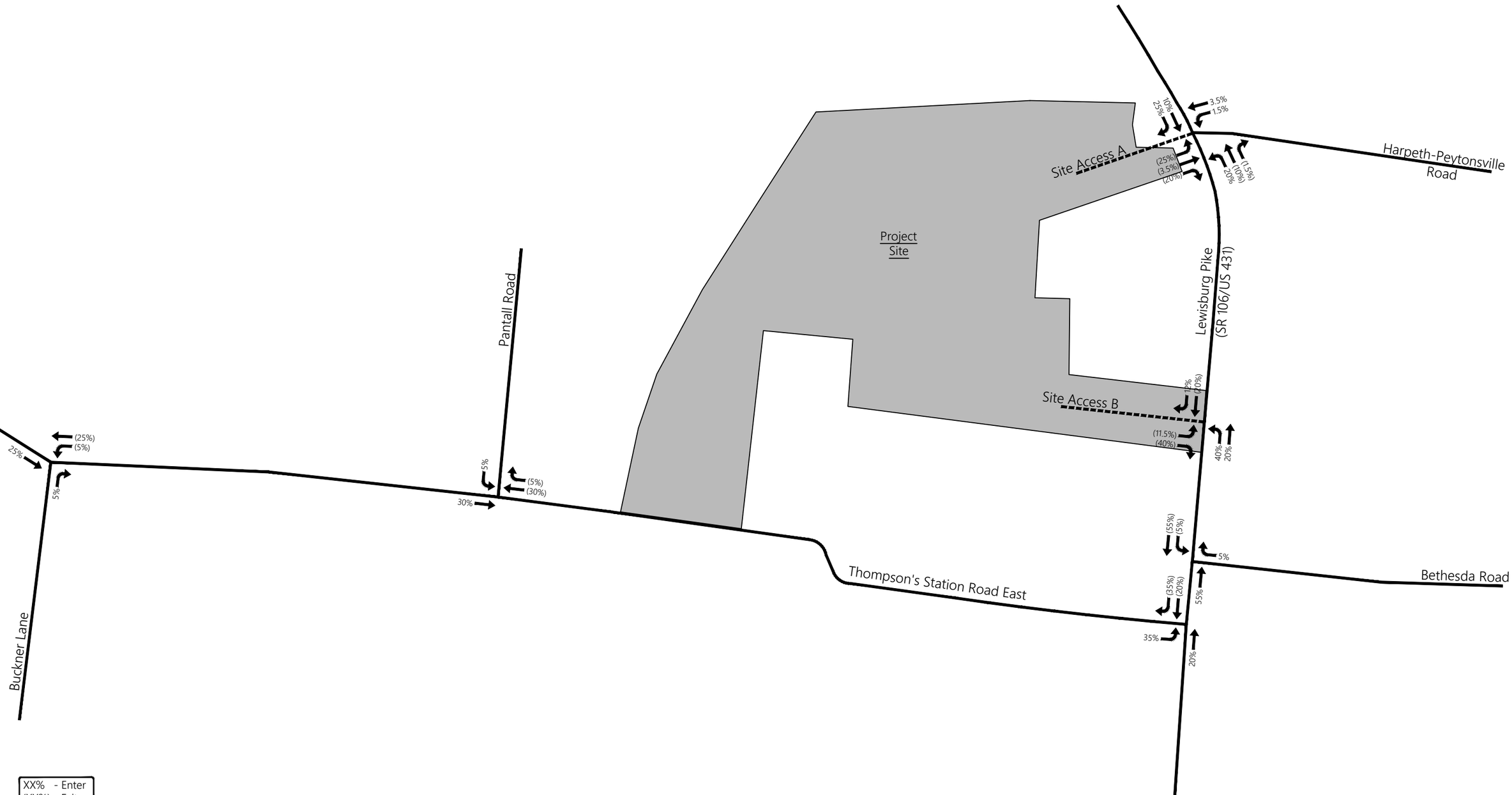
4.2 Trip Distribution and Traffic Assignment

A directional distribution of traffic generated by the proposed project was established based on the proposed access, the existing roadway network, and the existing travel patterns developed from the existing peak hour traffic counts. As previously discussed, access to the development is planned to be provided by two access drives, located along Lewisburg Pike (SR 106/US 431). The northern access will be provided via the new eastbound approach to the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth Peytonsville Road. The southern access will be located approximately 1,100 feet north of the intersection of Lewisburg Pike (SR 106/US 431) and Bethesda Road.

The directional distribution for the proposed development is shown in Figure 5. As shown in the figure,

- approximately 35% of the traffic generated by the development will be oriented to the north on Lewisburg Pike (SR 106/US 431),
- 25% to the west on Thompson's Station Road East,
- 20% to the south on Lewisburg Pike (SR 106/US 431),
- 5% to the east on Harpeth-Peytonsville Road,
- 5% to the east on Bethesda Road,
- 5% to the north on Pantall Road, and
- 5% to the south on Buckner Lane.

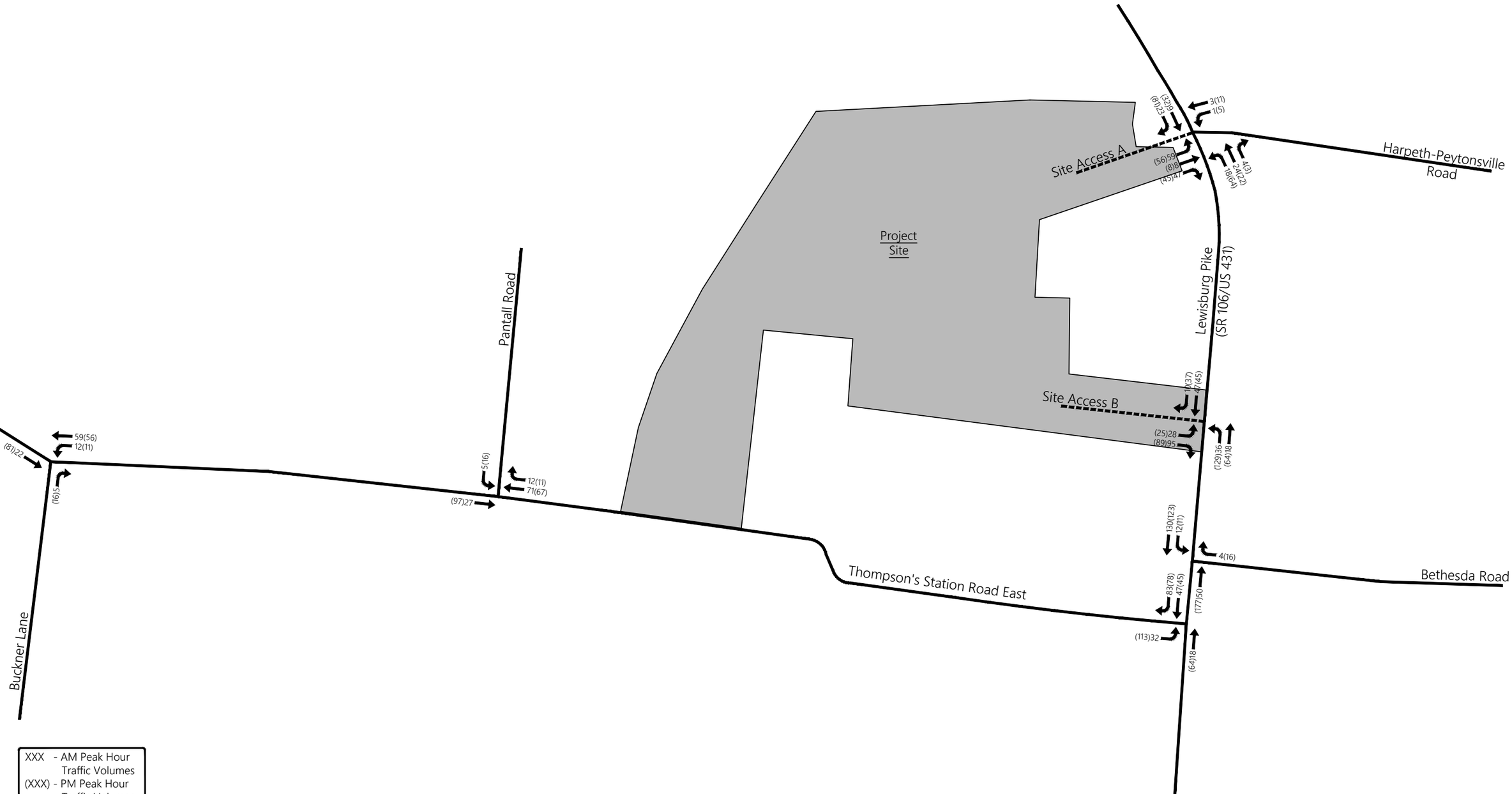
Based on the directional distribution, the project-generated traffic for the AM and PM peak hour was assigned to the roadway network. The traffic assignment for the proposed development is shown in Figure 6. It should be noted that the 20% of vehicles distributed to the south on Lewisburg Pike (SR 106/US 431) is due to the proposed I-65 interchange located along Buckner Road. This interchange is being constructed in tandem with the Alexander Property background development.



XX% - Enter
(XX%) - Exit

Assignment of Peak Hour Traffic Volumes
Generated by the Project Site
(Not to Scale)

Figure 5.



Distribution of Peak Hour Traffic Volumes
Generated by the Project Site
(Not to Scale)

Figure 6.

4.3 Capacity / Level of Service Analyses

The total site-generated traffic volumes were added to the background peak hour traffic volumes for the proposed development in order to obtain the total projected traffic volumes for the study intersections. Figure 7 presents the total projected AM and PM peak hour traffic volumes expected at the completion of the proposed development.

Capacity analyses were performed in order to determine the impact of the project on the study intersections. These capacity analyses were also used to evaluate the need for roadway and traffic control improvements at the intersections studied. The capacity calculations were performed according to the methods outlined in the *Highway Capacity Manual*, TRB 2010. The results of the capacity analyses for the projected conditions at the study area intersections are presented in Tables 6A and 6B. For the analyses, the intersection configurations and signal timings were the same as the existing and background conditions.

Based on preliminary lane warrant analysis, the intersections with proposed site accesses are expected to operate as follows:

- Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A
    - The northbound approach of Lewisburg Pike (SR 106/US 431) should include one left-turn lane and one shared through/right-turn lane.
    - The southbound approach of Lewisburg Pike (SR 106/US 431) should include one shared through/left-turn lane and one right-turn lane.
    - The eastbound approach of Site Access A should be designed to include one ingress lane and three egress lanes. The egress lanes should include one left-turn lane, one through lane, and one right-turn lane.
    - The westbound approach of Harpeth-Peytonsville Road should include one shared lane for all movements.
- Lewisburg Pike (SR 106/US 431) and Site Access B
    - The northbound approach of Lewisburg Pike (SR 106/US 431) should include one left-turn lane and one through lane.
    - The southbound approach of Lewisburg Pike (SR 106/US 431) should include one through lane and one right-turn lane.
    - The eastbound approach of Site Access B should be designed to include one ingress lane and two egress lanes. The egress lanes should include one left-turn lane and one right-turn lane.

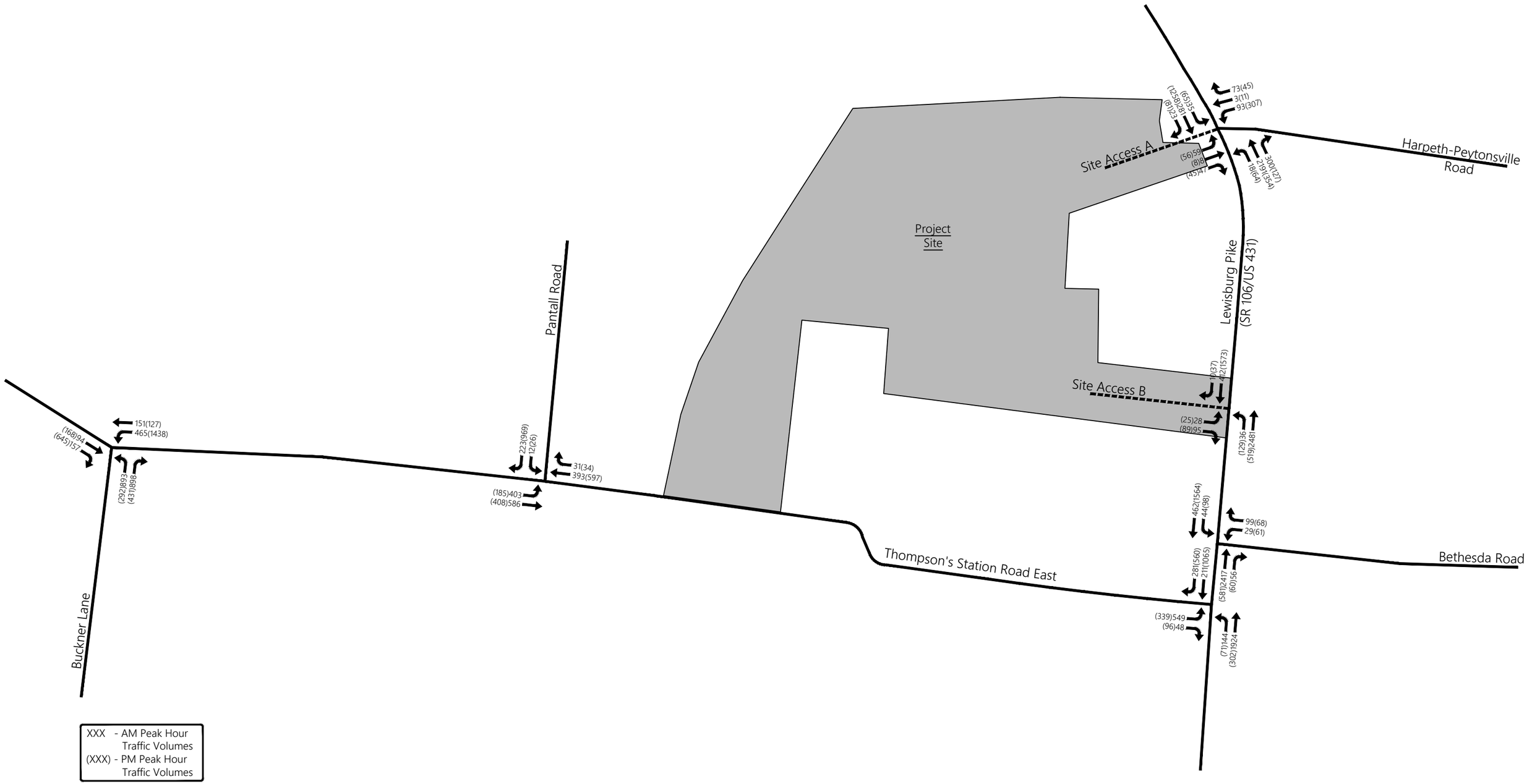
As shown in Tables 6A and 6B, under projected conditions, the capacity analyses indicate that the operational performances of the critical movements at the study intersections are generally expected to continue to operate at the same level of service as under background conditions or continue to operate at LOS D or better in the AM and PM peak hours with the following exceptions:

- Lewisburg Pike (SR 106/US 431) and Bethesda Road
  - The southbound left-turn movement is expected to deteriorate from LOS D to LOS E in the AM peak hour.
- Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A
  - The eastbound shared through/left-turn lane is expected to operate at LOS F in the AM and PM peak hours.
- Thompson's Station Road East and Pantall Road
  - The southbound approach is expected to deteriorate from LOS C to LOS F in the AM peak hour.
- Lewisburg Pike (SR 106/US 431) and Site Access B
  - The eastbound left-turn movement is expected to operate at LOS F in the AM and PM peak hours.
  - The eastbound right-turn movement is expected to operate at LOS F in the PM peak hour.

Additional analyses were conducted under a "projected with improvements" scenario to evaluate the benefits of adding the following roadway improvements:

- Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A
  - The intersection was assumed to be signalized with all approaches operating as permissive-only left-turn phasing. The signal was optimized for both cycle length and splits.

Capacity analyses results for the "projected with improvements" scenario are presented in bold in Tables 6A and 6B. Capacity analyses worksheets are included in Appendix D.



Total Projected Peak Hour Traffic Volumes
(Not to Scale)

Figure 7.

TABLE 6A. PROJECTED AM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Approach Delay in sec/veh)		
		EXISTING	BACKGROUND	PROJECTED
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	A (8.0)	A (8.6)	A (9.1)
	Eastbound Approach	F (>300)	F (>300)	F (>300)
Lewisburg Pike and Bethesda Road	Westbound Approach	F (259.8)	F (>300)	F (>300)
	Southbound Left-Turn	C (17.0)	D (33.4)	E (38.9)
Lewisburg Pike and Harpeth-Peytonsville Road/Site Access A	Overall Intersection	--	--	F (249.8)
	Northbound Left-Turn	--	--	A (8.0)
	Eastbound Left-Turn	--	--	F (>300)
	Eastbound Right-Turn	--	--	B (10.3)
	Westbound Approach	F (>300)	F (>300)	F (>300)
	Southbound Left-Turn	C (15.1)	D (26.1)	D (26.8)
Thompson's Station Road East and Buckner Lane	Overall Intersection	F (111.2)	D (41.9)	D (42.0)
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	A (8.5)	A (9.8)	B (10.4)
	Southbound Approach	B (11.1)	C (23.2)	F (65.0)
Lewisburg Pike and Site Access B	Northbound Left-Turn	--	--	A (8.4)
	Eastbound Left-Turn	--	--	F (>300)
	Eastbound Right-Turn	--	--	B (12.1)

Note: 1 - For stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection.
'Projected with Improvements' Scenario Results

TABLE 6B. PROJECTED PM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Approach Delay in sec/veh)		
		EXISTING	BACKGROUND	PROJECTED
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	B (11.1)	C (16.2)	C (18.0)
	Eastbound Approach	F (102.3)	F (>300)	F (>300)
Lewisburg Pike and Bethesda Road	Westbound Approach	E (36.1)	F (>300)	C (16.2)
	Southbound Left-Turn	A (8.1)	A (8.7)	A (9.5)
Lewisburg Pike and Harpeth-Peytonsville Road/Site Access A	Overall Intersection	--	--	E (71.2)
	Northbound Left-Turn	--	--	B (14.1)
	Eastbound Left-Turn	--	--	F (>300)
	Eastbound Right-Turn	--	--	D (32.3)
	Westbound Approach	F (299.8)	F (>300)	F (>300)
	Southbound Left-Turn	A (7.9)	A (8.2)	A (8.3)
Thompson's Station Road East and Buckner Lane	Overall Intersection	F (244.4)	F (118.5)	F (135.2)
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	A (8.4)	A (9.6)	B (10.1)
	Southbound Approach	F (84.3)	F (>300)	F (>300)
Lewisburg Pike and Site Access B	Northbound Left-Turn	--	--	C (21.4)
	Eastbound Left-Turn	--	--	F (>300)
	Eastbound Right-Turn	--	--	F (122.4)

Notes: 1 - For stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection.
'Projected with Improvements' Scenario Results

4.4 Queue Length Analysis

95th percentile queue lengths for the critical movements of the study intersections that are expected to be impacted by the proposed development were also analyzed and evaluated under the projected conditions. Table 7 indicates the results of the queue length analyses for the study intersection.

TABLE 7. STUDY INTERSECTIONS 95TH PERCENTILE QUEUE LENGTH

INTERSECTION	TURNING MOVEMENT	STORAGE LENGTH (FEET)	95th PERCENTILE QUEUE LENGTH (FEET)			
			BACKGROUND		PROJECTED	
			AM	PM	AM	PM
Lewisburg Pike and Thompson's Station Road East	Northbound Left-Turn	--	13′	18′	13′	20′
	Eastbound Approach	--	1910′	915′	2030′	1368′
Lewisburg Pike and Bethesda Road	Westbound Approach	--	430′	375′	455′	33′
	Southbound Left-Turn	--	20′	8′	30′	10′
Lewisburg Pike and Harpeth-Peytonsville Road/Site Access A	Northbound Left-Turn	**125′**	--	--	0′ **8′**	13′ **#127′**
	Eastbound Left-Turn	**125′**	--	--	-- **113′**	208′ **82′**
	Eastbound Right-Turn	**125′**	--	--	5′ **42′**	28′ **34′**
	Westbound Approach	--	575′	1053′	628′	1260′
	Southbound Left-Turn	--	18′	5′	18′	5′
Thompson's Station Road East and Buckner Lane	Eastbound Right-Turn	**200**	23′	#771′	29′	#907′
	Westbound Left-Turn	**300**	#538′	#1552′	#601′	#1996′
	Northbound Left-Turn	--	#983′	#386′	#1050′	#450′
	Northbound Right-Turn	--	197′	19′	283′	76′
Thompson's Station Road East and Pantall Road	Eastbound Left-Turn	--	43′	20′	48′	20′
	Southbound Approach	--	85′	1915′	195′	2198′
Lewisburg Pike and Site Access B	Northbound Left-Turn	**75**	--	--	3′	45′
	Eastbound Left-Turn	--	--	--	120′	95′
	Eastbound Right-Turn	--	--	--	15′	128′

 # - 95th percentile volume exceeds capacity; queue may be longer.

4.5 Signal Warrant Analysis

As noted in the capacity analysis, the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A is expected to operate at poor LOS under unsignalized projected conditions in the AM and PM peak hours:

A traffic signal should normally be installed at an intersection only when specific warrants are satisfied. Therefore, traffic signal warrant analyses were performed with available data for the intersections based on the anticipated traffic conditions at completion of the development.

The *Manual on Uniform Traffic Control Devices* (MUTCD) sets forth nine different warrants that have been developed by the traffic engineering profession to facilitate the determination of whether a signal is warranted. These warrants include minimum conditions that normally indicate when a traffic signal is justified at a particular location. The MUTCD states "traffic control signals should not be installed unless one or more of the signal warrants in the manual are met."

Although the MUTCD provides nine different warrants, only three of these are potentially applicable at the intersection under study. These three warrants, described in the MUTCD, are the volume-related signal warrants, which are described as follows:

WARRANT 1A, MINIMUM VEHICULAR VOLUME

The Minimum Vehicular Volume warrant is intended for application where the volume of intersecting traffic is the principal reason for consideration of signal installation. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes given below in Table 8 exist on the major street and on the higher volume minor street approach to the intersection.

TABLE 8. MINIMUM VEHICULAR VOLUMES FOR WARRANT 1A

Number of lanes for moving traffic on each approach		Vehicles per hour on major street	Vehicles per hour on higher volume minor approach
Major Street	Minor Street	Total of Both Approaches	One Direction Only
1 Lane	1 Lane	500	150
2 Lanes or more	1 Lane	600	150
2 Lanes or more	2 Lanes or more	600	200
1 Lane	2 Lanes or more	500	200

When the 85th percentile speed of the major street traffic exceeds 40 mph in either an urban or a rural area, or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the Minimum Vehicular Volume warrant is 70% of the requirements in Table 8. The speed limit on Lewisburg Pike (SR 106/US 431) is 55 mph; therefore, the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A does qualify for this reduction.

WARRANT 1B, INTERRUPTION OF CONTINUOUS TRAFFIC

The Interruption of Continuous Traffic warrant applies to operating conditions where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or hazard when entering or crossing the major street. The warrant is satisfied when, for each of any eight hours of an average day, the traffic volumes given below in Table 9 exist on the major street and on the higher volume minor street approach to an intersection. In addition, the signal installation shall not seriously disrupt progressive traffic flow.

TABLE 9. MINIMUM VEHICULAR VOLUMES FOR WARRANT 1B

Number of lanes for moving traffic on each approach		Vehicles per hour on major street	Vehicles per hour on higher volume minor approach
Major Street	Minor Street	Total of Both Approaches	One Direction Only
1 Lane	1 Lane	750	75
2 Lanes or more	1 Lane	900	75
2 Lanes or more	2 Lanes or more	900	100
1 Lane	2 Lanes or more	750	100

When the 85th percentile speed of the major street traffic exceeds 40 mph in either an urban or a rural area, or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the Minimum Vehicular Volume warrant is 70% of the requirements in Table 9. The speed limit on Lewisburg Pike (SR 106/US 431) is 55 mph; therefore, the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A does qualify for this reduction.

WARRANT 1C, COMBINATION WARRANT

In exceptional cases, traffic signals occasionally may be justified where no single warrant is satisfied but where Warrants 1A and 1B are satisfied to the extent of 80 percent or more of the stated values. This warrant is referred to as Warrant 1C (Combination Warrant).

When only peak hour data is collected, preliminary traffic signal warrant analyses can be based on estimates of the eighth highest hour of a typical day, based off the highest peak hour. The method for this estimation is described in the Manual of Traffic Signal Design, by Iris Fullerton and James H. Kell. This estimation procedure is based on the assumption that the eight highest hours will each exceed 6.25% of the ADT and that the peak hour traffic volume is approximately 10% of the ADT.

WARRANT 2, FOUR HOUR VOLUME

The Four Hour Volume warrant is satisfied when for each of any four high hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) all fall above the curve in Figure 8 and Figure 9 for the appropriate combination of approach lanes. It should be noted that when the 85th percentile speed of the major street traffic exceeds 40 mph or when the intersection lies within a built-up area of an isolated community having a population less than 10,000, the peak hour volume requirements are reduced by 30%. Figure 8 shows the existing traffic volumes at the study intersection as applied to Warrant 2 thresholds, and Figure 9 shows the projected traffic volumes at the study intersections as applied to Warrant 2 thresholds.

FIGURE 8. WARRANT 2, FOUR-HOUR VEHICULAR VOLUME (EXISTING)

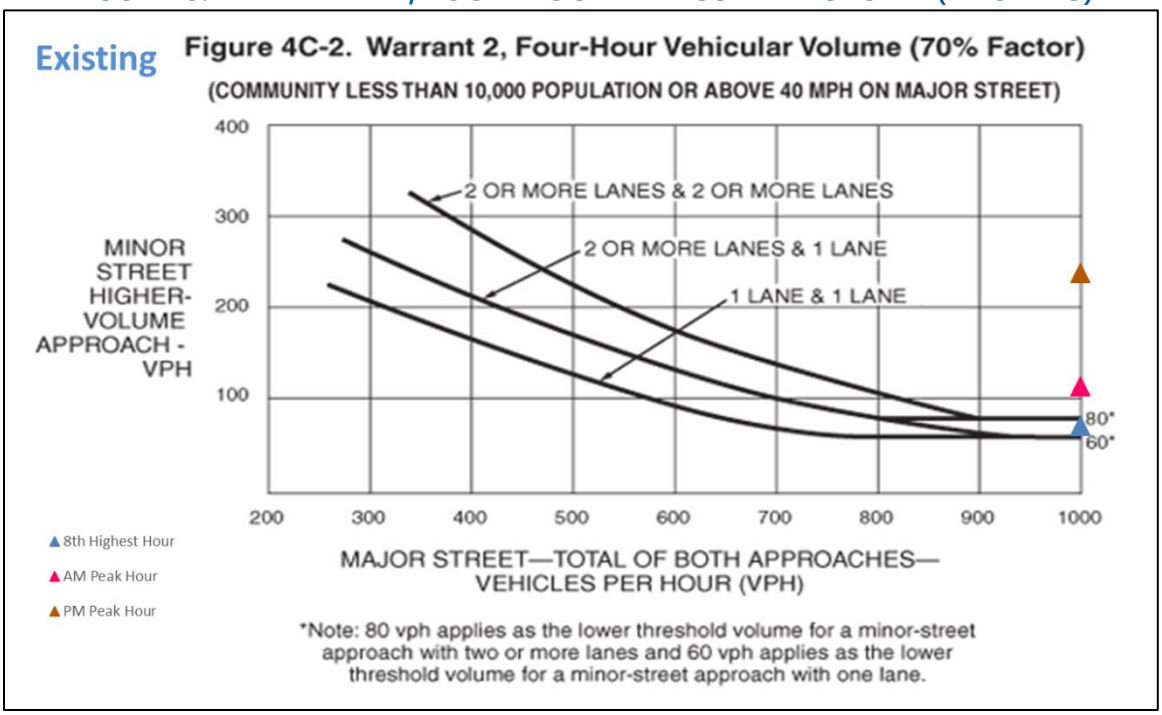
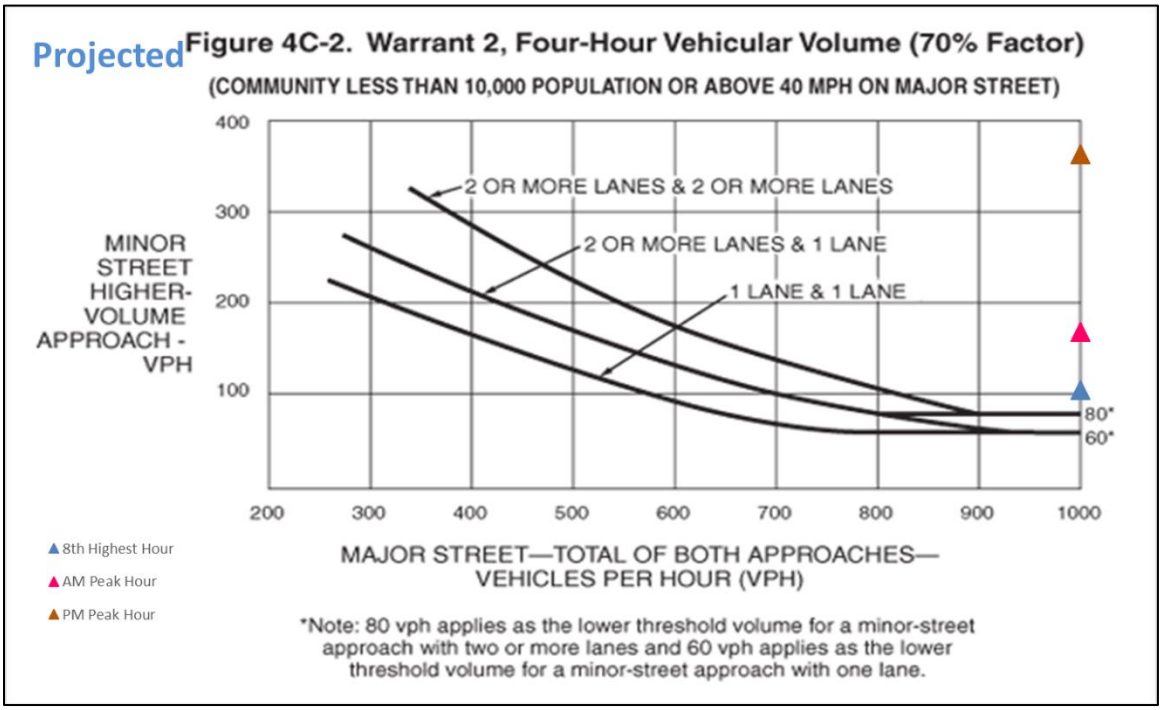


FIGURE 9. WARRANT 2, FOUR-HOUR VEHICULAR VOLUME (PROJECTED)



WARRANT 3, PEAK HOUR VOLUME

The Peak Hour Volume warrant is intended for application when traffic conditions are such that for one hour of the day, minor street traffic suffers undue traffic delay in entering or crossing the major street. The Peak Hour Volume warrant is satisfied when the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher volume minor street approach (one direction only) for one hour (any four consecutive 15 minute periods) of an average day falls above the curve in Figure 10 and Figure 11 for the appropriate combination of approach lanes. It should be noted that when the 85th percentile speed of the major street traffic exceeds 40 mph or when the intersection lies within a built-up area of an isolated community having a population less than 10,000, the peak hour volume requirements are reduced by 30%. Figure 10 shows the existing traffic volumes at the study intersection as applied to Warrant 3 thresholds, and Figure 11 shows the projected traffic volumes at the study intersections as applied to Warrant 3 thresholds.

FIGURE 10. WARRANT 3, PEAK-HOUR VEHICULAR VOLUME (EXISTING)

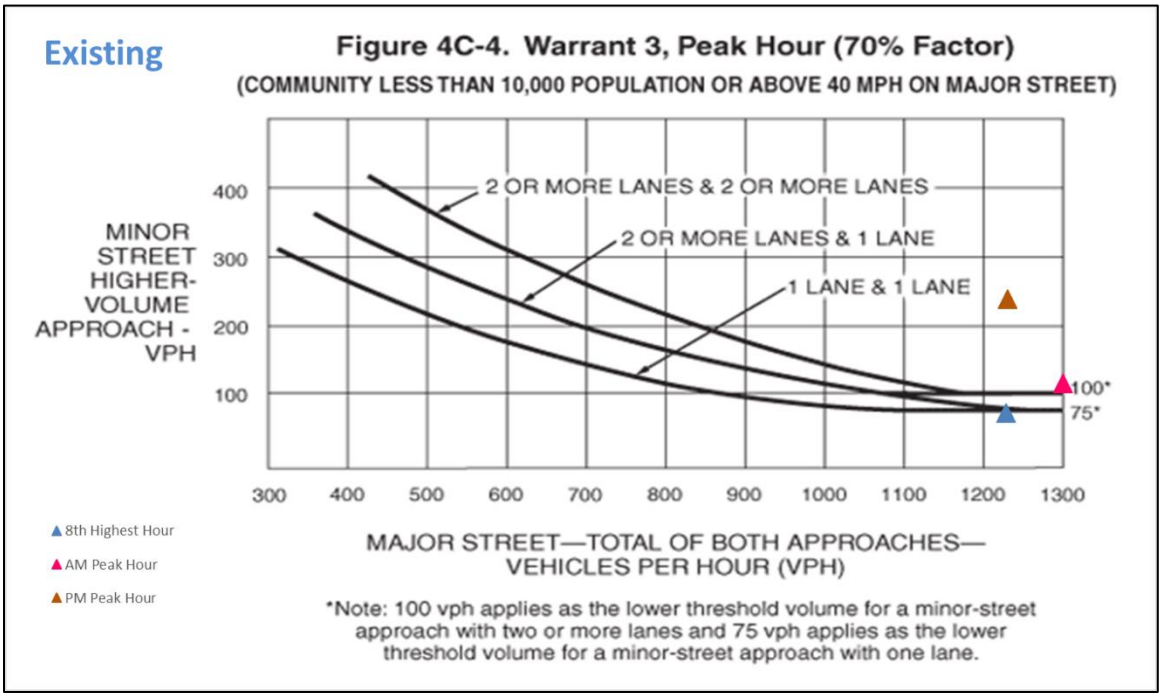
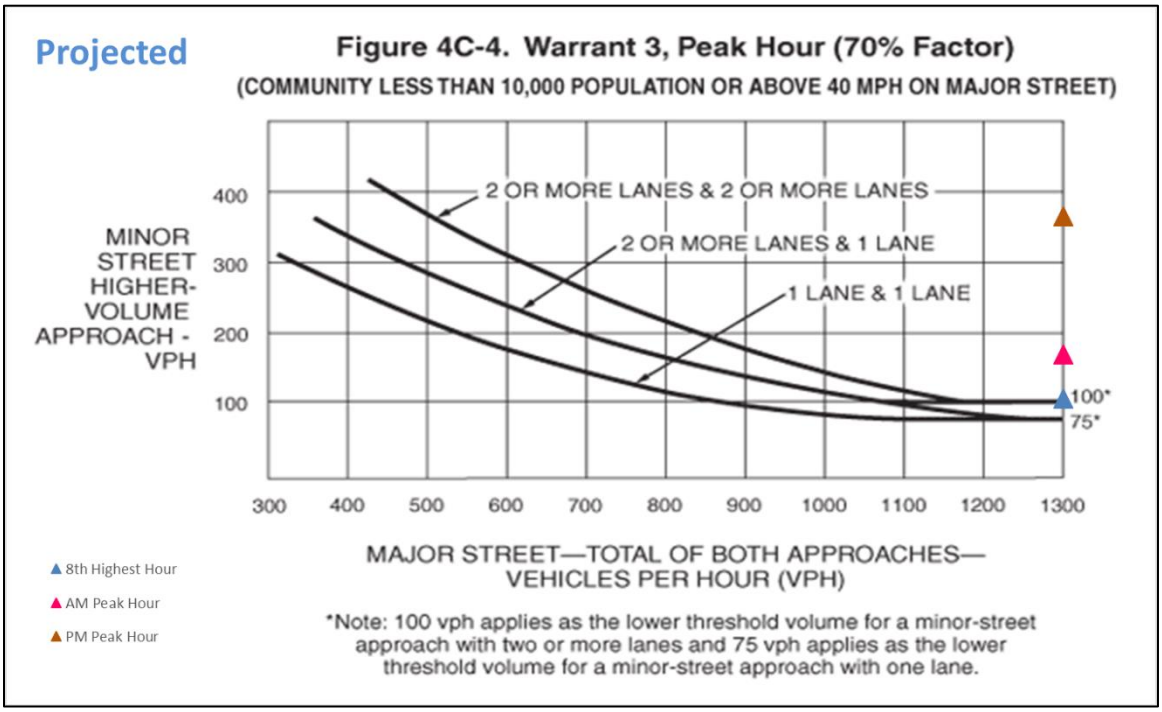


FIGURE 11. WARRANT 3, PEAK-HOUR VEHICULAR VOLUME (PROJECTED)



TRAFFIC SIGNAL WARRANT ANALYSIS RESULTS

Based on the geometry of the intersection, the analyses were performed based on one lane on the major street, Lewisburg Pike (SR 106/US 431), and one lane on the minor street (Harpeth-Peytonsville Road/Site Access A). The results of the warrant analyses indicated that under existing, background, and at the completion of the development, the traffic volumes at the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A will warrant a traffic signal.

Under existing and background conditions, the intersection is expected to meet Warrant 1B for the eighth highest hour, Warrant 2 in the AM and PM peak hours, and Warrant 3 in the AM and PM peak hours. Under projected conditions, the intersection is expected to meet Warrant 1A for the eighth highest hour, Warrant 1B for the eighth highest hour, Warrant 2 in the AM and PM peak hours, and Warrant 3 in the AM and PM peak hours. Results of the warrant analyses are shown in Table 10.

TABLE 10. TRAFFIC SIGNAL WARRANT ANALYSIS

	Hour	Main Street Both Directions	Minor Street Highest Approach	1A	1B	1C	2	3
Existing	8th Highest Hour	1228	72	No	Yes	n/a	n/a	n/a
	AM Peak Hour	1965	115	n/a	n/a	n/a	Yes	Yes
	PM Peak Hour	1230	238	n/a	n/a	n/a	Yes	Yes
Background	8th Highest Hour	1731	103	No	Yes	n/a	n/a	n/a
	AM Peak Hour	2770	165	n/a	n/a	n/a	Yes	Yes
	PM Peak Hour	1747	347	n/a	n/a	n/a	Yes	Yes
Projected	8th Highest Hour	1780	106	Yes	Yes	n/a	n/a	n/a
	AM Peak Hour	2848	169	n/a	n/a	n/a	Yes	Yes
	PM Peak Hour	1949	363	n/a	n/a	n/a	Yes	Yes

5. ANALYSIS OF SITE PLAN

5.1 Site Access Review

According to the information provided by the developer, the proposed Pleasant Creek development includes approximately 327 single-family residential homes, 90 single-family townhomes, 5,500 square feet of retail, 2,000 square feet of fitness center, and 2,000 square feet of bank.

Access to the development is planned to be provided via two access drives, located along Lewisburg Pike (SR 106/US 431). The northern access will be provided via the new eastbound approach to the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth Peytonsville Road. The southern access will be located approximately 1,100 feet north of the intersection of Lewisburg Pike (SR 106/US 431) and Bethesda Road.

5.2 Pedestrian, Bicycle, and Transit Access

No sidewalks, pedestrian infrastructure, bicycle facilities, or transit services are currently provided in the vicinity of the project site.

5.3 Sight Distance Analysis

Field investigation and sight distance measurements were conducted to determine if adequate sight distance is available for accessing the project site. For the 55 mph on Lewisburg Pike (SR 106/US 431), the guidelines from *A Policy on Geometric Design of Highways and Streets*, by the American Association of State Highway and Transportation Officials (AASHTO), call for a minimum stopping sight distance of 495 feet. These are the distances required for motorist to detect an object in the roadway necessitating a stop and be able to stop before reaching the object.

AASHTO also provides minimum design values for intersection sight distance which, allows enough time gap for a motorist to turn from Site Access A and Site Access B onto Lewisburg Pike (SR 106/US 431) without requiring motorists on Lewisburg Pike (SR 106/US 431) to significantly reduce speed. For a speed of 55 mph, the design value for intersection sight distance for a motorist turning from a stop is 530 feet for right-turns and 610 feet for left-turns. Therefore, it is desirable to provide a minimum of 530 feet looking north on Lewisburg Pike (SR 106/US 431) from Site Access A and Site Access B and 610 feet looking to the south on Lewisburg Pike (SR 106/US 431) from Site Access A and Site Access B. The design and available intersection sight distance for each of the site accesses are shown in Table 11.

TABLE 11. INTERSECTION SIGHT DISTANCE ANALYSIS

INTERSECTION	INTERSECTION SIGHT DISTANCE FOR LEFT-TURNS FROM STOP (FEET)		INTERSECTION SIGHT DISTANCE FOR RIGHT-TURNS FROM STOP (FEET)	
	DESIGN	AVAILABLE	DESIGN	AVAILABLE
Lewisburg Pike (SR 106/US 431) and Site Access A	610	610	530	600
Lewisburg Pike (SR 106/US 431) and Site Access B	610	610	530	600

The field investigations indicate that the existing sight distance available at the proposed intersections of Lewisburg Pike (SR 106/US 431) and Site Access A and Lewisburg Pike and Site Access B will be adequate for left-turns and right-turns onto Lewisburg Pike (SR 106/US 431).

5.4 Lane Warrant Analysis

The southbound approach of Lewisburg Pike (SR 106/US 431) at Site Access A was evaluated for the need to provide a right-turn lane based on the projected traffic volumes during the AM and PM peak hours. This analysis was based on the procedures outlined in the Intersection Channelization Design Guide (NCHRP 279). The results of the analysis indicate that a right-turn lane is warranted in the PM peak hour.

The northbound approach of Lewisburg Pike (SR 106/US 431) at Site Access A was evaluated for the need to provide a left-turn lane based on the projected traffic volumes during the AM and PM peak hours. This analysis was based on the procedures outlined in M.D. Harmelink's *Volume Warrants for Left-Turn Storage Lanes at Unsignalized Intersections*. The results of the analysis indicate that a left-turn lane is warranted in the AM and PM peak hours.

The eastbound approach of proposed Site Access A was evaluated for the need to provide a two-lane approach based on the projected traffic volumes during the AM and PM peak hours. According to *Evaluating Intersection Improvements: An Engineering Study Guide* (NCHRP 457) Figure 2-4, a two-lane approach is warranted for the eastbound approach of Site Access A during the AM and PM peak hours.

The southbound approach of Lewisburg Pike (SR 106/US 431) at Site Access B was evaluated for the need to provide a right-turn lane based on the projected traffic volumes during the AM and PM peak hours. This analysis was based on the procedures outlined in the Intersection Channelization Design Guide (NCHRP 279). The results of the analysis indicate that a right-turn lane is warranted in the PM peak hour.

The northbound approach of Lewisburg Pike (SR 106/US 431) at Site Access B was evaluated for the need to provide a left-turn lane based on the projected traffic volumes during the AM and PM peak hours. This analysis was based on the procedures outlined in M.D. Harmelink's *Volume Warrants for Left-Turn Storage Lanes at Unsignalized Intersections*. The results of the analysis indicate that a left-turn lane is warranted in the AM and PM peak hours.

The eastbound approach of proposed Site Access B was evaluated for the need to provide a two-lane approach based on the projected traffic volumes during the AM and PM peak hours. According to *Evaluating Intersection Improvements: An Engineering Study Guide* (NCHRP 457) Figure 2-4, a two-lane approach is warranted for the eastbound approach of Site Access B during the AM and PM peak hours.

All warrant analyses are included in Appendix I.

5.5 Evaluation of Off-Site Intersections

As described previously, off-site intersections that were analyzed for this study either currently experience poor LOS or will under background conditions. With the exception of the intersection of Thompson's Station Road East and Buckner Lane, each of these intersections has been evaluated and recommendations have been previously presented in the Town of Thompson's Station's *Major Thoroughfare Plan* or in the Town's *2015 Traffic Impact Study Comprehensive Update*. Also, as previously discussed the intersection of Thompson's Station Road East and Buckner Lane is planned to be realigned and improved as part of the proposed Alexander Property development in the city of Spring Hill. Descriptions of the recommendations for the remaining off-site intersections as presented in the Town of Thompson's Station's *Major Thoroughfare Plan* and the *2015 Traffic Impact Study Comprehensive Update* are discussed below:

Lewisburg Pike

Major Thoroughfare Plan Recommendations

"Expand existing route to 4-lane, median-divided facility to provide congestion relief and improve safety. 11' travel lanes and landscaped median to be provided in carriageway with pocket turn lanes at major intersections. Corridor would narrow to 2-lane section with turn lanes north of the I-840 interchange. The new road will include a greenway facility from T.S. Road East to Critz Lane. A curbless section with paved shoulders and drainage swales will be provided to maintain rural character."

2015 Traffic Impact Study Comprehensive Update Recommendations

"Signalize the intersection of Lewisburg Pike and Thompson's Station Road."

"Construct a northbound left turn lane with approximately 150 feet of storage at the intersection of Lewisburg Pike and Thompson's Station Road."

Thompson's Station Road East

Major Thoroughfare Plan Recommendation

"Conduct safety improvements by providing 11' travel lanes and 2' shoulders throughout as well as turn lanes at major intersections. The majority will be a 2-3 lane section, but limited portions between Clayton Arnold and Pantall Roads may consist of a 4-lane section to accommodate EB and WB turn lanes. The new road will include a greenway facility along some of its length. The project also presents an opportunity to realign several S-curves along the corridor pending further safety and right-of-way studies."

2015 Traffic Impact Study Comprehensive Update Recommendations

"Signalize the intersection of Buckner Lane and Thompson's Station Road."

"Construct a westbound left turn lane with approximately 150 feet of storage at the intersection of Thompson's Station Road and Buckner Lane."

"Construct a northbound right turn lane with approximately 150 feet of storage at the intersection of Buckner Lane and Thompson's Station Road."

"Construct an eastbound left turn lane with approximately 150 feet of storage at the intersection of Thompson's Station Road and Lewisburg Pike."

"Signalize the intersection of Thompson's Station Road and Pantall Road."

"Construct an eastbound left turn lane with approximately 150 feet of storage at the intersection of Thompson's Station Road and Pantall Road."

Pantall Road

Major Thoroughfare Plan Recommendation

"Conduct safety improvements along Pantall Road to provide 11' travel lanes and 2' shoulders throughout as well as turn lanes at major intersections."

Impact of Planned I-65 Interchange South of Thompson's Station Road

As previously mentioned, a new interchange with I-65 south of Thompson's Station Road is planned by TDOT and the City of Spring Hill. Included in this construction project is a new east/west road that will be an extension of Buckner Road and will travel between Buckner Lane and Lewisburg Pike and form an interchange with I-65. This new interchange will be completed by September 2025. With the completion of this interchange, traffic patterns in the area will change significantly. In particular, the interchange will provide a direct connection to I-65 from Buckner Road which is expected to reduce traffic on Thompson's Station Road, Buckner Lane, and Lewisburg Pike between Thompson's Station Road and I-840.

6. RECOMMENDATIONS

The proposed Pleasant Creek development is located on the north side of Thompson's Station Road East, east of I-65 in Thompson's Station, Tennessee. According to the developer, the proposed development includes approximately 327 single-family residential homes, 90 single-family townhomes, 5,500 square feet of retail, 2,000 square feet of fitness center, and 2,000 square feet of bank. Access to the project site is planned to be provided by two access drives, located along Lewisburg Pike (SR 106/US 431). The northern access will be provided via the new eastbound approach to the intersection of Lewisburg Pike (SR 106/US 431) and Harpeth Peytonsville Road. The southern access will be located approximately 1,100 feet north of the intersection of Lewisburg Pike (SR 106/US 431) and Bethesda Road. The analyses presented in this study indicate that the impacts of the proposed project on the existing street network will be manageable by providing the recommendations below. The recommendations are as follows:

Lewisburg Pike (SR 106/US 431) and Harpeth-Peytonsville Road/Site Access A

- Preliminary signal warrant analysis determined that a signal is warranted under existing conditions. However, these preliminary analyses were based on traffic projections made due to Covid-19 and not on actual counts representing traffic conditions without the impacts of Covid-19. Therefore, a full signal warrant analysis should be completed when traffic conditions have stabilized and prior to the completion of 35 lots within the Pleasant Creek development.
- Until a signal is installed, the eastbound approach of Site Access A should be stop-controlled, and a stop bar and R1-1 'Stop' sign should be installed on the egress approach.
- Site Access A should be designed to include sufficient width for one entering lane and three exiting lanes. The exiting approach should include one left-turn lane with a minimum of 125 feet of storage, one through lane, and one right-turn lane with a minimum of 125 feet of storage.
- Provide a northbound left-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 150 feet of storage length.
- Provide a southbound right-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 75 feet of storage length.

Lewisburg Pike (SR 106/US 431) and Site Access B

- The eastbound approach of Site Access B should be stop-controlled, and a stop bar and R1-1 'Stop' sign should be installed on the egress approach.

- Site Access B should be designed to include sufficient width for one entering lane and two exiting lanes. The exiting approach should include one left-turn lane and one right-turn lane.
- Provide a northbound left-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 150 feet of storage length.
- Provide a southbound right-turn lane on Lewisburg Pike (SR 106/US 431) with a minimum of 75 feet of storage length.

Additional Recommendations

- As part of the construction of the project, all internal and external roadway connections should be designed such that the departure sight triangles, as specified by AASHTO, will be clear of all sight obstructions, including landscaping, existing vegetation, monument signs/walls, fences, etc.
- Final design of internal roadways and parking should meet all Town of Thompson's Station standards. Internal intersections should be two-way stop-controlled unless all-way stop control warrants are met.

In summary, based on the analyses conducted, no further recommendations are presented for the proposed Pleasant Creek development.

APPENDICES

APPENDIX A
PRELIMINARY SITE PLAN

APPENDIX B
DETAILED TURNING MOVEMENT COUNTS

APPENDIX C
TDOT COUNT DATA

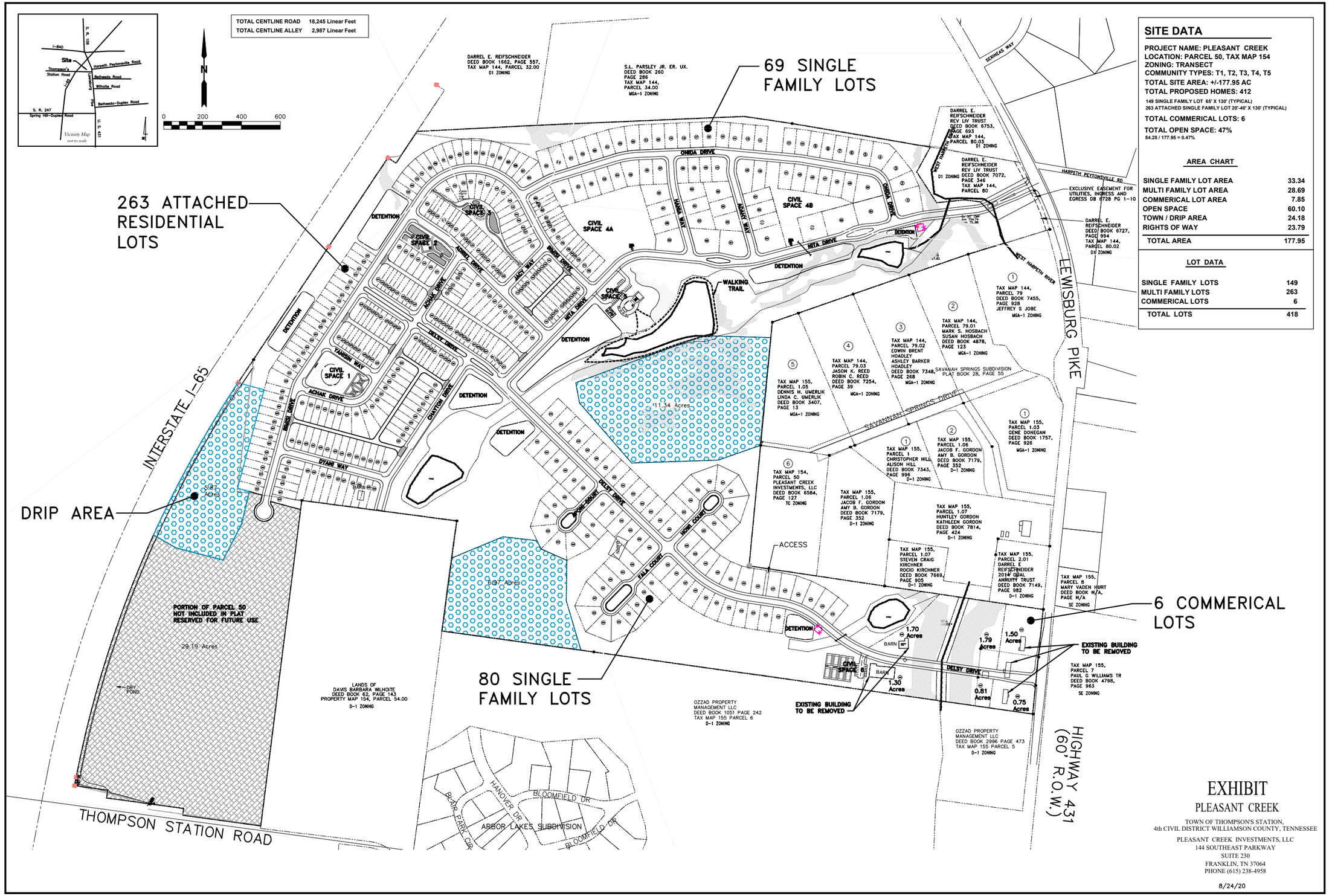
APPENDIX D
CAPACITY ANALYSES

APPENDIX E
BACKGROUND DEVELOPMENTS

APPENDIX F
TRIP GENERATION CALCULATIONS

APPENDIX G
WARRANT ANALYSIS

APPENDIX A
PRELIMINARY SITE PLAN



SITE DATA

PROJECT NAME: PLEASANT CREEK
LOCATION: PARCEL 50, TAX MAP 154
ZONING: TRANSECT
COMMUNITY TYPES: T1, T2, T3, T4, T5
TOTAL SITE AREA: +/-177.95 AC
TOTAL PROPOSED HOMES: 412
149 SINGLE FAMILY LOT 65' X 130' (TYPICAL)
263 ATTACHED SINGLE FAMILY LOT 20'-40' X 130' (TYPICAL)
TOTAL COMMERICAL LOTS: 6
TOTAL OPEN SPACE: 47%
84.28 / 177.95 = 0.47%

AREA CHART

SINGLE FAMILY LOT AREA	33.34
MULTI FAMILY LOT AREA	28.69
COMMERICAL LOT AREA	7.85
OPEN SPACE	60.10
TOWN / DRIP AREA	24.18
RIGHTS OF WAY	23.79
TOTAL AREA	177.95

LOT DATA

SINGLE FAMILY LOTS	149
MULTI FAMILY LOTS	263
COMMERICAL LOTS	6
TOTAL LOTS	418

EXHIBIT

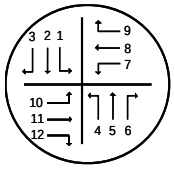
PLEASANT CREEK

TOWN OF THOMPSON'S STATION,
4th CIVIL DISTRICT WILLIAMSON COUNTY, TENNESSEE

PLEASANT CREEK INVESTMENTS, LLC
144 SOUTHEAST PARKWAY
SUITE 230
FRANKLIN, TN 37064
PHONE (615) 238-4958

8/24/20

APPENDIX B
DETAILED TURNING MOVEMENT COUNTS

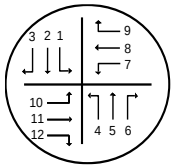


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: 1 - Lewisburg Hwy & Thompson Station Rd East
DATE: 7/21/2020
RECORDER: Darryl Glascock
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	**Lewisburg Hwy**			**Lewisburg Hwy**			**private drive**			**Thompson Station E**			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													
6:15-6:30													**168**
6:30-6:45													**320**
6:45-7:00													**509**
7:00-7:15		26	8	10	94					21		9	**670**
7:15-7:30		20	7	14	97					11		3	**657**
7:30-7:45		38	15	17	97		1			17		4	**644**
7:45-8:00		26	9	6	93					19		8	**580**
8:00-8:15		33	10	4	92					13		3	**542**
8:15-8:30		30	14	8	63		1			17		6	**387**
8:30-8:45		28	8	3	65					18		3	**248**
8:45-9:00		35	18	6	47					14		3	**123**
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**303**
3:30-3:45													**494**
3:45-4:00													**686**
4:00-4:15		148	34	14	49					36		22	**906**
4:15-4:30		90	24	7	39	1				19		11	**823**
4:30-4:45		98	29	3	31		1			22		8	**841**
4:45-5:00		119	30	7	40					14		10	**830**
5:00-5:15		106	28	10	44	1			1	16		14	**769**
5:15-5:30		119	31	4	30					16		9	**549**
5:30-5:45		107	28	4	25					14		3	**340**
5:45-6:00		89	17	6	28					12		7	**159**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL		1,112	310	123	934	2	3		1	279		123	
AM PK HR		117	41	41	379		1			60		18	7:15 AM - 8:15 AM
MID PK HR													
PM PK HR		442	118	24	145	1	1		1	68		41	4:30 PM - 5:30 PM

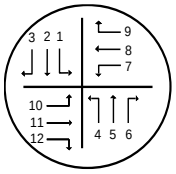


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: 2 Lewisburg Hwy & Bethesda
DATE: 7/21/2020
RECORDER: Darryl Glascock
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Road A			Road B			Road C			Road D			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													
6:15-6:30													**162**
6:30-6:45													**315**
6:45-7:00													**516**
7:00-7:15	2	30			115		2		13				**672**
7:15-7:30	6	25			104	4	2		12				**677**
7:30-7:45	5	48			113	1	5		29				**661**
7:45-8:00	3	32			109	3	3		6				**607**
8:00-8:15	9	40			104	1	1		12				**586**
8:15-8:30	4	40			79	1	2		11				**419**
8:30-8:45	9	35			77	6	1		19				**282**
8:45-9:00	8	48			61	2	4		12				**135**
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**202**
3:30-3:45													**403**
3:45-4:00													**615**
4:00-4:15	15	120			50	7	3		7				**841**
4:15-4:30	12	116			56	3	4		10				**835**
4:30-4:45	22	120			42	11	6		11				**859**
4:45-5:00	9	145			54	6	4		8				**843**
5:00-5:15	16	108			56	4	5		7				**774**
5:15-5:30	12	150			46	6	3		8				**578**
5:30-5:45	23	124			36	3	2		8				**353**
5:45-6:00	11	100			34	7	4		1				**157**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL	166	1,281			1,136	65	51		174				
AM PK HR	23	145			430	9	11		59				7:15 AM - 8:15 AM
MID PK HR													
PM PK HR	59	523			198	27	18		34				4:30 PM - 5:30 PM

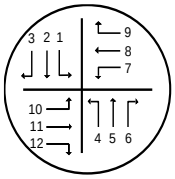


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: 3 Lewsiburg Hwy & Harpeth Peytonsville
DATE: 7/21/2020
RECORDER: Darryl Glascock
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Lewisburg			Lewisburg			Harpeth Peytonsville			na			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													
6:15-6:30													**174**
6:30-6:45													**341**
6:45-7:00													**530**
7:00-7:15	4	27			103	23	8		9				**693**
7:15-7:30	6	24			104	18	7		8				**692**
7:30-7:45	6	38			115	16	9		5				**671**
7:45-8:00	10	27			97	16	6		7				**644**
8:00-8:15	3	40			100	14	9		7				**619**
8:15-8:30	5	36			79	12	10		4				**446**
8:30-8:45	3	40			92	12	9		6				**300**
8:45-9:00	1	42			62	13	11		9				**138**
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**210**
3:30-3:45													**403**
3:45-4:00													**614**
4:00-4:15	7	120			40	17	17		9				**840**
4:15-4:30	6	105			48	7	18		9				**846**
4:30-4:45	6	116			45	14	22		8				**875**
4:45-5:00	10	123			44	15	24		10				**859**
5:00-5:15	11	111			45	13	29		7				**785**
5:15-5:30	10	132			46	7	20		7				**569**
5:30-5:45	4	118			31	8	26		8				**347**
5:45-6:00	3	96			32	5	13		3				**152**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL	95	1,195			1,083	210	238		116				
AM PK HR	25	129			416	64	31		27				7:15 AM - 8:15 AM
MID PK HR													
PM PK HR	37	482			180	49	95		32				4:30 PM - 5:30 PM

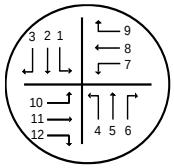


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: 4 Buckner Rd & Thompson Station East
DATE: 7/21/2020
RECORDER: Darryl Glascock
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	NA			Buckner			Thompson Station E			Thompson Station E			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													
6:15-6:30													**131**
6:30-6:45													**305**
6:45-7:00													**527**
7:00-7:15				22		79	11	6			5	8	**704**
7:15-7:30				48		77	5	12			22	10	**740**
7:30-7:45				54		106	30	19			3	10	**736**
7:45-8:00				35		67	28	20			9	18	**691**
8:00-8:15				27		71	31	10			11	17	**680**
8:15-8:30				40		81	28	8			2	11	**513**
8:30-8:45				37		79	26	11			7	17	**343**
8:45-9:00				32		64	34	9			6	21	**166**
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**237**
3:30-3:45													**462**
3:45-4:00													**724**
4:00-4:15				17		50	95	9			14	52	**987**
4:15-4:30				15		36	107	9			14	44	**998**
4:30-4:45				12		39	136	15			13	47	**1,079**
4:45-5:00				17		40	125	7			12	62	**1,063**
5:00-5:15				25		37	113	5			11	57	**1,011**
5:15-5:30				17		43	155	8			7	76	**763**
5:30-5:45				19		31	114	6			15	61	**457**
5:45-6:00				16		37	93	10			12	43	**211**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL				433		937	1,131	164			163	554	
AM PK HR				164		321	94	61			45	55	7:15 AM - 8:15 AM
MID PK HR													
PM PK HR				71		159	529	35			43	242	4:30 PM - 5:30 PM

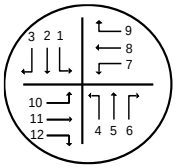


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: Thompson Station E & Pantail Rd
DATE: 7/21/2020
RECORDER: Darryl Glascock
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Pantail Rd			na			Thompson Station E			Thompson Station E			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													
6:15-6:30													**114**
6:30-6:45													**229**
6:45-7:00													**386**
7:00-7:15	1		11					13	2	66	21		**502**
7:15-7:30			19					16		63	17		**503**
7:30-7:45	1		19					28	1	91	17		**504**
7:45-8:00			24					16	2	56	18		**466**
8:00-8:15			20					17	1	63	14		**469**
8:15-8:30			16					19		64	17		**354**
8:30-8:45			19					14		67	19		**238**
8:45-9:00	1		24					23	2	54	15		**119**
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**170**
3:30-3:45													**340**
3:45-4:00													**515**
4:00-4:15	2		87					21	1	30	29		**700**
4:15-4:30	3		95					25	1	25	21		**704**
4:30-4:45	1		106					28		22	18		**740**
4:45-5:00	1		103					33		28	20		**726**
5:00-5:15	2		99					27		28	18		**686**
5:15-5:30	1		118					35	1	32	19		**512**
5:30-5:45	1		85					34	1	21	19		**306**
5:45-6:00	3		77					23	1	26	15		**145**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL	17		922					372	13	736	297		
AM PK HR	1		82					77	4	273	66		7:15 AM - 8:15 AM
MID PK HR													
PM PK HR	5		426					123	1	110	75		4:30 PM - 5:30 PM

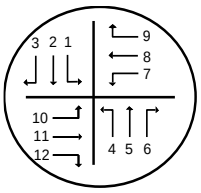


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: Lewisburg Hwy & Thompson Station Rd
DATE: 4/28/2015
RECORDER: Darryl Glascock
NOTES: 25-35 cars in que eastbound Thompson station rd from 6:15am until 7:45 am at during and at end of each 15 min sequence. Intersection not signalized.

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Lewisburg Hwy			Lewisburg Hwy						Thompson Station Rd			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													**713**
6:15-6:30													**1,063**
6:30-6:45		8	17	13	253					63			**1,406**
6:45-7:00		21	30	15	228					65			**1,340**
7:00-7:15		21	36	16	218					56		3	**1,202**
7:15-7:30		22	12	11	234					60		4	**1,099**
7:30-7:45		29	8	5	168					74		4	**997**
7:45-8:00		4	19	6	138					47		7	**709**
8:00-8:15		25	18	10	101					82		11	**488**
8:15-8:30		40	45	6	86					62		2	**241**
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**193**
3:30-3:45													**433**
3:45-4:00													**652**
4:00-4:15		93	25	5	42					19		9	**874**
4:15-4:30		99	58	1	45					27		10	**916**
4:30-4:45		113	45	3	29					18		11	**937**
4:45-5:00		102	54	5	25					28		8	**995**
5:00-5:15		120	38	7	30					28		12	**990**
5:15-5:30		146	43	5	31					29		7	**755**
5:30-5:45		138	75	3	30					20		11	**494**
5:45-6:00		101	67	1	24					19		5	**217**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL		1,082	590	112	1,682					697		104	
AM PK HR		72	95	55	933					244		7	6:30 AM - 7:30 AM
MID PK HR													
PM PK HR		505	223	16	115					96		35	5:00 PM - 6:00 PM



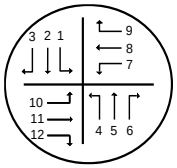
North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: Lewisburg Pike & Harpeth Peytonsville Road
DATE: 4/28/2015
RECORDER: Zack Murphy
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Lewisburg Pike			Lewisburg Pike			Harpeth Peytonsville Road			Harpeth Peytonsville Road			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													**756**
6:15-6:30													**1,109**
6:30-6:45	2	22			313	26	7		10				**1,468**
6:45-7:00	7	32			270	40	22		5				**1,385**
7:00-7:15	1	40			250	44	11		7				**1,269**
7:15-7:30	2	36			267	36	3		15				**1,138**
7:30-7:45	7	30			194	51	6		9				**1,027**
7:45-8:00	31	18			120	70	13		8				**730**
8:00-8:15	13	47			76	75	9		2				**470**
8:15-8:30	1	64			143	28	10		2				**248**
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**215**
3:30-3:45													**460**
3:45-4:00													**701**
4:00-4:15	12	107			63	9	21		3				**923**
4:15-4:30	7	136			59	13	27		3				**956**
4:30-4:45	7	147			43	12	28		4				**977**
4:45-5:00	2	118			60	7	31		4				**1,034**
5:00-5:15	9	137			49	18	30		5				**1,047**
5:15-5:30	6	167			44	14	30		5				**799**
5:30-5:45	12	174			41	15	48		8				**533**
5:45-6:00	6	142			32	11	39		5				**235**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													

8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL	125	1,417			2,024	469	335		95				
AM PK HR	12	130			1,100	146	43		37				6:30 AM - 7:30 AM
MID PK HR													
PM PK HR	33	620			166	58	147		23				5:00 PM - 6:00 PM

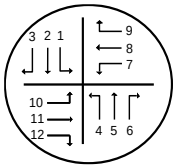


North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: Pantall Rd & Thompson Station Rd
DATE: 04/29/2015
RECORDER: Nathan Quinn
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION	Pantall Rd						Thompson Station Rd			Thompson Station Rd			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													**255**
6:15-6:30													**424**
6:30-6:45	1		9					20		37	37		**575**
6:45-7:00			43					42	1	30	35		**577**
7:00-7:15			26					38	3	53	49		**540**
7:15-7:30			14					16	4	69	48		**491**
7:30-7:45			2					11	3	62	28		**464**
7:45-8:00	3		11					11	1	54	34		**358**
8:00-8:15	2		8					13		51	46		**244**
8:15-8:30	2		13					18	1	56	34		**124**
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**117**
3:30-3:45													**296**
3:45-4:00													**498**
4:00-4:15			53					34		11	19		**677**
4:15-4:30	2		102					30	1	20	24		**794**
4:30-4:45	1		107					41	1	18	34		**838**
4:45-5:00			71					50	1	27	30		**862**
5:00-5:15	1		127					60	6	18	22		**903**
5:15-5:30	1		114					54	1	23	30		**669**
5:30-5:45			116					60		21	29		**446**
5:45-6:00			116					59	2	15	28		**220**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL	13		932					557	25	565	527		
AM PK HR	1		92					116	8	189	169		6:30 AM - 7:30 AM
MID PK HR													
PM PK HR	2		473					233	9	77	109		5:00 PM - 6:00 PM



North

INTERSECTION TRAFFIC VOLUME COUNTS

LOCATION: Buckner Lane & Thompson Station Road
DATE: 04/30/2015
RECORDER: Nathan Quinn
NOTES:

	Southbound			Northbound			Westbound			Eastbound			
LOCATION				Buckner Ln			Thompson Station Rd			Thompson Station Rd			
TIME	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	
6:00-6:15 AM													**488**
6:15-6:30													**787**
6:30-6:45				92		71	20	12			3	9	**1,116**
6:45-7:00				93		74	85	14				15	**1,168**
7:00-7:15				99		112	64	6			1	17	**1,075**
7:15-7:30				130		128	42	6			6	17	**976**
7:30-7:45				95		108	30	9			3	14	**843**
7:45-8:00				46		91	31	6			3	11	**584**
8:00-8:15				48		109	22	6			4	11	**396**
8:15-8:30				46		103	19	10			7	11	**196**
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00													
10:00-10:15													
10:15-10:30													
10:30-10:45													
10:45-11:00													
11:00-11:15													
11:15-11:30													
11:30-11:45													
11:45-12:00 PM													
12:00-12:15													
12:15-12:30													
12:30-12:45													
12:45-1:00													
1:00-1:15													
1:15-1:30													
1:30-1:45													
1:45-2:00													
2:00-2:15													
2:15-2:30													
2:30-2:45													
2:45-3:00													
3:00-3:15													
3:15-3:30													**225**
3:30-3:45													**452**
3:45-4:00													**737**
4:00-4:15				20		37	105	2			9	52	**1,034**
4:15-4:30				14		33	114	10			6	50	**1,082**
4:30-4:45				22		44	149	4			14	52	**1,170**
4:45-5:00				19		35	162	13			6	62	**1,200**
5:00-5:15				25		26	132	11			6	73	**1,222**
5:15-5:30				31		43	160	13			11	57	**949**
5:30-5:45				20		45	165	5			11	69	**634**
5:45-6:00				21		28	194	4			7	65	**319**
6:00-6:15													
6:15-6:30													
6:30-6:45													
6:45-7:00													
7:00-7:15													
7:15-7:30													
7:30-7:45													
7:45-8:00													
8:00-8:15													
8:15-8:30													
8:30-8:45													
8:45-9:00													
9:00-9:15													
9:15-9:30													
9:30-9:45													
9:45-10:00 PM													
TOTAL				821		1,087	1,494	131			97	585	
AM PK HR				414		385	211	38			10	58	6:30 AM - 7:30 AM
MID PK HR													
PM PK HR				97		142	651	33			35	264	5:00 PM - 6:00 PM

APPENDIX C
TDOT COUNT DATA

TDOT AADT DATA

Station	65	66	64	93
Route	SR106	1928	996	980
Location	Lewisburg Pike - E of I-65 - B/W Cascade Eastates Blvd and Wilhoite Rd	Thompson's Station Road East - W of I-65 - B/W Columbia Pk and Village Dr	Bethesda Road - E of Lewisburg Pk - B/W Lewisburg Pk and Marlin Wy	Harpeth-Peytonsville Road - E of Lewisburg Pk - B/W Dotson Rd and Herbert Smithson Rd
County	Williamson	Williamson	Williamson	Williamson
2018	6,188	4,009	2,062	1,608
2017	6,714	2,824	1,116	1,677
2016	4,914	2,693	1,252	1,288
2015	5,087	2,666	1,229	1,419
2014	4,948	2,659	1,515	1,206
2013	4,899	2,404	1,500	1,210
2012	4,906	3,019	1,595	1,269
2011	4,767	2,634	1,325	1,231
2010	4,780	2,557	1,525	1,195
2009	4,817	2,590	1,709	1,163
2008	5,168	2,279	1,669	1,194
2007	5,021	3,720	1,844	1,230
2006	4,992	2,571	1,923	1,293

APPENDIX D
CAPACITY ANALYSES

EXISTING CONDITIONS CAPACITY ANALYSES

Intersection	
Int Delay, s/veh	662.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	355	18	94	1359	117	133
Future Vol, veh/h	355	18	94	1359	117	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	386	20	102	1477	127	145

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1881	200	272	0	-	0
Stage 1	200	-	-	-	-	-
Stage 2	1681	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 78	841	1291	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	~ 166	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 44	841	1291	-	-	-
Mov Cap-2 Maneuver	~ 44	-	-	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	~ 166	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	3685.6	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1291	-	46	-	-
HCM Lane V/C Ratio	0.079	-	8.814	-	-
HCM Control Delay (s)	8	$	3685.6	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.3	-	48.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	11.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	68	1680	34	23	232
Future Vol, veh/h	18	68	1680	34	23	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	74	1826	37	25	252

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2147	1845	0	0	1863	0
Stage 1	1845	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	53	93	-	-	324	-
Stage 1	137	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	93	-	-	324	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	137	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	259.8	0	1.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	78	324	-
HCM Lane V/C Ratio	-	-	1.198	0.077	-
HCM Control Delay (s)	-	-	259.8	17	0
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	7	0.2	-

Intersection	
Int Delay, s/veh	28

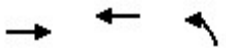
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	52	1543	205	25	192
Future Vol, veh/h	63	52	1543	205	25	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	57	1677	223	27	209

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2052	1789	0	0	1677	0
Stage 1	1789	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 61	101	-	-	382	-
Stage 1	147	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 56	101	-	-	382	-
Mov Cap-2 Maneuver	~ 56	-	-	-	-	-
Stage 1	147	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 502.6	0	1.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	70	382	-
HCM Lane V/C Ratio	-	-	1.786	0.071	-
HCM Control Delay (s)	-	-	$ 502.6	15.1	0
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	11.1	0.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	142	388	1278
v/c Ratio	0.25	1.09	1.19
Control Delay	15.0	112.4	117.3
Queue Delay	0.0	0.0	0.0
Total Delay	15.0	112.4	117.3
Queue Length 50th (ft)	33	~310	~1072
Queue Length 95th (ft)	82	#498	#1335
Internal Link Dist (ft)	1044	3802	1526
Turn Bay Length (ft)			
Base Capacity (vph)	573	355	1073
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.25	1.09	1.19

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	50	81	296	61	581	594
Future Volume (vph)	50	81	296	61	581	594
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.93	
Flt Protected	1.00			0.96	0.98	
Satd. Flow (prot)	1707			1789	1694	
Flt Permitted	1.00			0.63	0.98	
Satd. Flow (perm)	1707			1168	1694	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	88	322	66	632	646
RTOR Reduction (vph)	54	0	0	0	34	0
Lane Group Flow (vph)	88	0	0	388	1244	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	4	
Permitted Phases			6			
Actuated Green, G (s)	33.5			33.5	67.5	
Effective Green, g (s)	33.5			33.5	67.5	
Actuated g/C Ratio	0.30			0.30	0.61	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	519			355	1039	
v/s Ratio Prot	0.05				c0.73	
v/s Ratio Perm				c0.33		
v/c Ratio	0.17			1.09	1.20	
Uniform Delay, d1	28.1			38.2	21.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			75.1	98.4	
Delay (s)	28.8			113.3	119.7	
Level of Service	C			F	F	
Approach Delay (s)	28.8			113.3	119.7	
Approach LOS	C			F	F	

Intersection Summary			
HCM 2000 Control Delay	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	273	371	214	13	2	143
Future Vol, veh/h	273	371	214	13	2	143
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	297	403	233	14	2	155

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	247	0	-	0	1237	240
Stage 1	-	-	-	-	240	-
Stage 2	-	-	-	-	997	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1319	-	-	-	194	799
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	357	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1319	-	-	-	138	799
Mov Cap-2 Maneuver	-	-	-	-	138	-
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	357	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1319	-	-	-	749
HCM Lane V/C Ratio	0.225	-	-	-	0.21
HCM Control Delay (s)	8.5	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	0.8

Intersection	
Int Delay, s/veh	13.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	143	49	24	170	727	321
Future Vol, veh/h	143	49	24	170	727	321
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	155	53	26	185	790	349

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1202	965	1139	0	-	0
Stage 1	965	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	204	309	613	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	194	309	613	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	353	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	102.3	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	613	-	214	-	-
HCM Lane V/C Ratio	0.043	-	0.975	-	-
HCM Control Delay (s)	11.1	0	102.3	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	8.5	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	37	277	36	62	1014
Future Vol, veh/h	34	37	277	36	62	1014
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	40	301	39	67	1102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1557	321	0	0	340	0
Stage 1	321	-	-	-	-	-
Stage 2	1236	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	124	720	-	-	1219	-
Stage 1	735	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	106	720	-	-	1219	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	235	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.1	0	0.5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	191	1219	-
HCM Lane V/C Ratio	-	-	0.404	0.055	-
HCM Control Delay (s)	-	-	36.1	8.1	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	1.8	0.2	-

Intersection	
Int Delay, s/veh	48.9

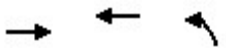
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	206	32	233	81	46	870
Future Vol, veh/h	206	32	233	81	46	870
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	35	253	88	50	946

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1343	297	0	0	253	0
Stage 1	297	-	-	-	-	-
Stage 2	1046	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 168	742	-	-	1312	-
Stage 1	754	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 155	742	-	-	1312	-
Mov Cap-2 Maneuver	~ 155	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	311	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	299.8	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	173	1312	-
HCM Lane V/C Ratio	-	-	1.495	0.038	-
HCM Control Delay (s)	-	-	299.8	7.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	16.6	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	WBT	NBL
Lane Group Flow (vph)	465	1081	407
v/c Ratio	0.34	1.75	1.25
Control Delay	1.4	362.5	176.9
Queue Delay	0.0	0.0	0.0
Total Delay	1.4	362.5	176.9
Queue Length 50th (ft)	12	~890	~420
Queue Length 95th (ft)	37	#1156	#633
Internal Link Dist (ft)	1044	3802	1526
Turn Bay Length (ft)			
Base Capacity (vph)	1356	619	325
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.34	1.75	1.25

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	58	370	947	48	136	238
Future Volume (vph)	58	370	947	48	136	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5			4.5	4.5	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.88			1.00	0.91	
Flt Protected	1.00			0.95	0.98	
Satd. Flow (prot)	1645			1778	1672	
Flt Permitted	1.00			0.43	0.98	
Satd. Flow (perm)	1645			807	1672	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	402	1029	52	148	259
RTOR Reduction (vph)	93	0	0	0	45	0
Lane Group Flow (vph)	372	0	0	1081	362	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	107.5			107.5	23.5	
Effective Green, g (s)	107.5			107.5	23.5	
Actuated g/C Ratio	0.77			0.77	0.17	
Clearance Time (s)	4.5			4.5	4.5	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	1263			619	280	
v/s Ratio Prot	0.23				c0.22	
v/s Ratio Perm				c1.34		
v/c Ratio	0.29			1.75	1.29	
Uniform Delay, d1	4.9			16.2	58.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.1			342.5	155.9	
Delay (s)	5.0			358.8	214.1	
Level of Service	A			F	F	
Approach Delay (s)	5.0			358.8	214.1	
Approach LOS	A			F	F	

Intersection Summary			
HCM 2000 Control Delay	244.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	43.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	186	332	13	6	663
Future Vol, veh/h	110	186	332	13	6	663
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	202	361	14	7	721

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	375	0	-	0	810	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1183	-	-	-	349	~ 677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1183	-	-	-	309	~ 677
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	648	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	84.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1183	-	-	-	670
HCM Lane V/C Ratio	0.101	-	-	-	1.085
HCM Control Delay (s)	8.4	0	-	-	84.3
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	20.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

BACKGROUND CONDITIONS CAPACITY ANALYSES

Intersection	
Int Delay, s/veh	1909.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	517	48	144	1906	164	198
Future Vol, veh/h	517	48	144	1906	164	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	562	52	157	2072	178	215

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2672	286	393	0	-	0
Stage 1	286	-	-	-	-	-
Stage 2	2386	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 25	753	1166	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	~ 73	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 25	753	1166	-	-	-
Mov Cap-2 Maneuver	~ 25	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	~ 73	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 10061.4	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1166	-	27	-	-
HCM Lane V/C Ratio	0.134	-	22.746	-	-
HCM Control Delay (s)	8.6	$ 0	10061.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	76.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	119.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	95	2367	56	32	332
Future Vol, veh/h	29	95	2367	56	32	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	103	2573	61	35	361

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3035	2604	0	0	2634	0
Stage 1	2604	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 14	~ 32	-	-	161	-
Stage 1	56	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 10	~ 32	-	-	161	-
Mov Cap-2 Maneuver	~ 10	-	-	-	-	-
Stage 1	56	-	-	-	-	-
Stage 2	477	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $	2803.1	0	2.9
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	21	161	-
HCM Lane V/C Ratio	-	-	6.418	0.216	-
HCM Control Delay (s)	-	-	$ 2803.1	33.4	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	17.2	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	236.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	73	2167	296	35	272
Future Vol, veh/h	92	73	2167	296	35	272
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	79	2355	322	38	296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2888	2516	0	0	2355	0
Stage 1	2516	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 18	~ 36	-	-	208	-
Stage 1	~ 62	-	-	-	-	-
Stage 2	697	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 14	~ 36	-	-	208	-
Mov Cap-2 Maneuver	~ 14	-	-	-	-	-
Stage 1	~ 62	-	-	-	-	-
Stage 2	544	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $	4193.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	19	208	-
HCM Lane V/C Ratio	-	-	9.439	0.183	-
HCM Control Delay (s)	-	-	$ 4193.4	26.1	0
HCM Lane LOS	-	-	F	D	A
HCM 95th %tile Q(veh)	-	-	23	0.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	78	171	492	100	971	971
v/c Ratio	0.24	0.14	0.93	0.14	1.03	0.73
Control Delay	41.3	1.5	55.7	22.6	64.5	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	1.5	55.7	22.6	64.5	6.0
Queue Length 50th (ft)	48	7	291	45	~737	75
Queue Length 95th (ft)	93	23	#538	82	#983	197
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	326	1215	531	719	941	1334
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.14	0.93	0.14	1.03	0.73

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	72	157	453	92	893	893
Future Volume (veh/h)	72	157	453	92	893	893
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	0	492	100	971	971
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	328		553	723	947	1112
Arrive On Green	0.18	0.00	0.17	0.39	0.53	0.53
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	78	0	492	100	971	971
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	3.9	0.0	18.7	3.8	58.5	51.9
Cycle Q Clear(g_c), s	3.9	0.0	18.7	3.8	58.5	51.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	328		553	723	947	1112
V/C Ratio(X)	0.24		0.89	0.14	1.02	0.87
Avail Cap(c_a), veh/h	328		553	723	947	1112
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	33.3	21.9	25.7	12.6
Incr Delay (d2), s/veh	1.7	0.0	16.4	0.4	35.8	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	5.6	1.7	31.6	40.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.7	0.0	49.7	22.3	61.5	20.4
LnGrp LOS	D		D	C	F	C
Approach Vol, veh/h	78	A		592	1942	
Approach Delay, s/veh	40.7			45.0	41.0	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.2	23.8		63.0		47.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	18.7	19.3		58.5		42.5
Max Q Clear Time (g_c+I1), s	20.7	5.9		60.5		5.8
Green Ext Time (p_c), s	0.0	0.2		0.0		0.5

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	403	559	322	19	7	223
Future Vol, veh/h	403	559	322	19	7	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	608	350	21	8	242

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	371	0	-	0	1845	361
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	1484	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1188	-	-	-	82	684
Stage 1	-	-	-	-	705	-
Stage 2	-	-	-	-	208	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1188	-	-	-	36	684
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	208	-

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	23.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1188	-	-	-	442
HCM Lane V/C Ratio	0.369	-	-	-	0.566
HCM Control Delay (s)	9.8	0	-	-	23.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	1.7	-	-	-	3.4

Intersection	
Int Delay, s/veh	224.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	226	96	71	238	1020	482
Future Vol, veh/h	226	96	71	238	1020	482
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	246	104	77	259	1109	524

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1784	1371	1633	0	-	0
Stage 1	1371	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 90	179	397	-	-	-
Stage 1	~ 236	-	-	-	-	-
Stage 2	668	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 70	179	397	-	-	-
Mov Cap-2 Maneuver	~ 70	-	-	-	-	-
Stage 1	~ 182	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	1481.7	3.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	397	-	86	-	-
HCM Lane V/C Ratio	0.194	-	4.07	-	-
HCM Control Delay (s)	16.2	$	1481.7	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	0.7	-	36.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	101.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	52	404	60	87	1441
Future Vol, veh/h	61	52	404	60	87	1441
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	57	439	65	95	1566

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2228	472	0	0	504	0
Stage 1	472	-	-	-	-	-
Stage 2	1756	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 47	592	-	-	1061	-
Stage 1	628	-	-	-	-	-
Stage 2	152	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 15	592	-	-	1061	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	~ 47	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $	1891.2	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	27	1061	-
HCM Lane V/C Ratio	-	-	4.549	0.089	-
HCM Control Delay (s)	-	-	$ 1891.2	8.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	15	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	365.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	302	45	332	124	65	1226
Future Vol, veh/h	302	45	332	124	65	1226
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	328	49	361	135	71	1333

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1904	429	0	0	361	0
Stage 1	429	-	-	-	-	-
Stage 2	1475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 76	626	-	-	1198	-
Stage 1	657	-	-	-	-	-
Stage 2	~ 210	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 59	626	-	-	1198	-
Mov Cap-2 Maneuver	~ 59	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	~ 162	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, $	2205.4	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	67	1198	-
HCM Lane V/C Ratio	-	-	5.629	0.059	-
HCM Control Delay (s)	-	-	$ 2205.4	8.2	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	42.1	0.2	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	95	701	1551	77	317	451
v/c Ratio	0.49	1.24	1.37	0.06	0.93	0.33
Control Delay	51.6	151.8	190.0	4.3	75.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	151.8	190.0	4.3	75.3	0.9
Queue Length 50th (ft)	59	~549	~1246	13	202	0
Queue Length 95th (ft)	110	#771	#1552	25	#386	19
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	359	566	1135	1504	342	1365
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.24	1.37	0.05	0.93	0.33

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	87	645	1427	71	292	415
Future Volume (veh/h)	87	645	1427	71	292	415
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	0	1551	77	317	451
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	136		1158	1329	350	1249
Arrive On Green	0.07	0.00	0.59	0.71	0.20	0.20
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	95	0	1551	77	317	451
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	4.8	0.0	57.5	1.2	16.9	8.2
Cycle Q Clear(g_c), s	4.8	0.0	57.5	1.2	16.9	8.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	136		1158	1329	350	1249
V/C Ratio(X)	0.70		1.34	0.06	0.90	0.36
Avail Cap(c_a), veh/h	375		1158	1568	357	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.0	0.0	14.5	4.2	38.2	3.0
Incr Delay (d2), s/veh	6.3	0.0	158.6	0.0	25.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	67.8	0.3	9.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.3	0.0	173.1	4.3	63.4	3.2
LnGrp LOS	D		F	A	E	A
Approach Vol, veh/h	95	A		1628	768	
Approach Delay, s/veh	50.3			165.1	28.1	
Approach LOS	D			F	C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	62.0	11.6		23.6		73.6
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	57.5	19.5		19.5		81.5
Max Q Clear Time (g_c+I1), s	59.5	6.8		18.9		3.2
Green Ext Time (p_c), s	0.0	0.3		0.2		0.4

Intersection Summary		
HCM 6th Ctrl Delay		118.5
HCM 6th LOS		F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	264.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	185	311	530	23	10	969
Future Vol, veh/h	185	311	530	23	10	969
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	338	576	25	11	1053

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	601	0	-	0	1329	589
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	740	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	976	-	-	-	171	~ 508
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	976	-	-	-	128	~ 508
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	472	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	$ 546.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	976	-	-	-	493
HCM Lane V/C Ratio	0.206	-	-	-	2.158
HCM Control Delay (s)	9.6	0	-	-	$ 546.9
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.8	-	-	-	76.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

PROJECTED CONDITIONS CAPACITY ANALYSES

Intersection	
Int Delay, s/veh	2377

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	549	48	144	1924	211	281
Future Vol, veh/h	549	48	144	1924	211	281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	597	52	157	2091	229	305

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2787	382	534	0	-	0
Stage 1	382	-	-	-	-	-
Stage 2	2405	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 21	665	1034	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	~ 71	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 21	665	1034	-	-	-
Mov Cap-2 Maneuver	~ 21	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	~ 71	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 12567.8	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	23	-	-
HCM Lane V/C Ratio	0.151	-	28.214	-	-
HCM Control Delay (s)	9.1	$	12567.8	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	81.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	162.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	99	2417	56	44	462
Future Vol, veh/h	29	99	2417	56	44	462
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	108	2627	61	48	502

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3256	2658	0	0	2688	0
Stage 1	2658	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 10	~ 29	-	-	153	-
Stage 1	53	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 6	~ 29	-	-	153	-
Mov Cap-2 Maneuver	~ 6	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	310	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 3930.9	0	3.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	16	153	-
HCM Lane V/C Ratio	-	-	8.696	0.313	-
HCM Control Delay (s)	-	-	$ 3930.9	38.9	0
HCM Lane LOS	-	-	F	E	A
HCM 95th %tile Q(veh)	-	-	18.2	1.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	945.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	8	47	93	3	73	18	2191	300	35	281	23
Future Vol, veh/h	59	8	47	93	3	73	18	2191	300	35	281	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	100	-	100	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	9	51	101	3	79	20	2382	326	38	305	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2844	2803	305	3009	2991	2545	330	0	0	2382	0	0
Stage 1	381	381	-	2585	2585	-	-	-	-	-	-	-
Stage 2	2463	2422	-	424	406	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 11	18	735	~ 8	14	~ 35	1229	-	-	203	-	-
Stage 1	641	613	-	~ 35	52	-	-	-	-	-	-	-
Stage 2	~ 41	63	-	608	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	14	735	~ 3	11	~ 35	1229	-	-	203	-	-
Mov Cap-2 Maneuver	-	14	-	~ 3	11	-	-	-	-	-	-	-
Stage 1	631	472	-	~ 34	51	-	-	-	-	-	-	-
Stage 2	-	62	-	428	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 17516.5	0.1	2.8
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1229	-	-	-	14	735	5	203	-	-
HCM Lane V/C Ratio	0.016	-	-	-	0.621	0.07	36.739	0.187	-	-
HCM Control Delay (s)	8	-	-	-$	458.2	10.3	$ 17516.5	26.8	0	-
HCM Lane LOS	A	-	-	-	F	B	F	D	A	-
HCM 95th %tile Q(veh)	0	-	-	-	1.5	0.2	25.1	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	102	171	505	164	971	976
v/c Ratio	0.35	0.14	0.96	0.23	1.02	0.74
Control Delay	48.9	2.0	64.2	25.8	62.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	2.0	64.2	25.8	62.9	7.2
Queue Length 50th (ft)	71	11	331	84	~798	149
Queue Length 95th (ft)	127	29	#601	136	#1050	283
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	293	1190	526	721	951	1324
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.14	0.96	0.23	1.02	0.74

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	94	157	465	151	893	898
Future Volume (veh/h)	94	157	465	151	893	898
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	0	505	164	971	976
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	295		544	725	957	1157
Arrive On Green	0.16	0.00	0.19	0.39	0.54	0.54
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	102	0	505	164	971	976
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	5.8	0.0	23.1	7.1	64.5	51.9
Cycle Q Clear(g_c), s	5.8	0.0	23.1	7.1	64.5	51.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	295		544	725	957	1157
V/C Ratio(X)	0.35		0.93	0.23	1.01	0.84
Avail Cap(c_a), veh/h	295		544	725	957	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	36.1	24.7	27.7	11.4
Incr Delay (d2), s/veh	3.2	0.0	22.5	0.7	32.6	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	6.3	3.2	33.7	43.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.2	0.0	58.7	25.4	60.4	17.2
LnGrp LOS	D		E	C	F	B
Approach Vol, veh/h	102	A		669	1947	
Approach Delay, s/veh	48.2			50.5	38.8	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.6	23.4		69.0		51.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	23.1	18.9		64.5		46.5
Max Q Clear Time (g_c+I1), s	25.1	7.8		66.5		9.1
Green Ext Time (p_c), s	0.0	0.3		0.0		0.8

Intersection Summary		
HCM 6th Ctrl Delay		42.0
HCM 6th LOS		D

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	403	586	393	31	12	223
Future Vol, veh/h	403	586	393	31	12	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	637	427	34	13	242

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	461	0	-	0	1957	444
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	1513	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1100	-	-	-	70	614
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	201	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1100	-	-	-	27	614
Mov Cap-2 Maneuver	-	-	-	-	27	-
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	201	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	65
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1100	-	-	-	291
HCM Lane V/C Ratio	0.398	-	-	-	0.878
HCM Control Delay (s)	10.4	0	-	-	65
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	1.9	-	-	-	7.8

Intersection	
Int Delay, s/veh	14

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	95	36	2481	412	10
Future Vol, veh/h	28	95	36	2481	412	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	103	39	2697	448	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3223	448	459	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	2775	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 11	611	1102	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	611	1102	-	-	-
Mov Cap-2 Maneuver	~ 11	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	46	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 346.7	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1102	-	11	611	-	-
HCM Lane V/C Ratio	0.036	-	2.767	0.169	-	-
HCM Control Delay (s)	8.4	-	$ 1481.8	12.1	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.8	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	567

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	339	96	71	302	1065	560
Future Vol, veh/h	339	96	71	302	1065	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	368	104	77	328	1158	609

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1945	1463	1767	0	-	0
Stage 1	1463	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 71	158	353	-	-	-
Stage 1	~ 213	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 52	158	353	-	-	-
Mov Cap-2 Maneuver	~ 52	-	-	-	-	-
Stage 1	~ 156	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	3168.4	3.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	353	-	61	-	-
HCM Lane V/C Ratio	0.219	-	7.751	-	-
HCM Control Delay (s)	18	$	3168.4	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	0.8	-	54.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	68	581	60	98	1564
Future Vol, veh/h	61	68	581	60	98	1564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	74	632	65	107	1700

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2579	665	0	0	697	0
Stage 1	665	-	-	-	-	-
Stage 2	1914	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 28	460	-	-	899	-
Stage 1	511	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	460	-	-	899	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	460	899	-
HCM Lane V/C Ratio	-	-	0.305	0.118	-
HCM Control Delay (s)	-	-	16.2	9.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1822.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	8	45	307	11	45	64	354	127	65	1258	81
Future Vol, veh/h	56	8	45	307	11	45	64	354	127	65	1258	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	100	-	100	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	9	49	334	12	49	70	385	138	71	1367	88

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2065	2034	1367	2176	2191	454	1455	0	0	385	0	0
Stage 1	1509	1509	-	594	594	-	-	-	-	-	-	-
Stage 2	556	525	-	1582	1597	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 40	57	180	~ 33	45	606	465	-	-	1173	-	-
Stage 1	150	183	-	491	493	-	-	-	-	-	-	-
Stage 2	515	529	-	~ 137	166	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 16	32	180	~ 13	25	606	465	-	-	1173	-	-
Mov Cap-2 Maneuver	~ 16	32	-	~ 13	25	-	-	-	-	-	-	-
Stage 1	127	122	-	417	419	-	-	-	-	-	-	-
Stage 2	391	449	-	~ 62	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 921.8	$ 11876.2	1.7	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	465	-	-	16	32	180	15	1173	-	-
HCM Lane V/C Ratio	0.15	-	-	3.804	0.272	0.272	26.304	0.06	-	-
HCM Control Delay (s)	14.1	-	-	$ 1746	155.2	33.1	$ 11876.2	8.3	0	-
HCM Lane LOS	B	-	-	F	F	D	F	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	8.3	0.9	1.1	50.4	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	183	701	1563	138	317	468
v/c Ratio	0.74	1.18	1.44	0.10	0.93	0.36
Control Delay	70.4	131.5	225.8	4.9	83.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	131.5	225.8	4.9	83.8	2.6
Queue Length 50th (ft)	146	~669	~1684	28	259	39
Queue Length 95th (ft)	227	#907	#1996	47	#450	76
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	302	595	1086	1422	342	1307
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	1.18	1.44	0.10	0.93	0.36

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	168	645	1438	127	292	431
Future Volume (veh/h)	168	645	1438	127	292	431
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	0	1563	138	317	468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	216		1117	1371	345	1228
Arrive On Green	0.12	0.00	0.58	0.73	0.19	0.19
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	183	0	1563	138	317	468
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	11.8	0.0	71.5	2.6	21.5	11.6
Cycle Q Clear(g_c), s	11.8	0.0	71.5	2.6	21.5	11.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	216		1117	1371	345	1228
V/C Ratio(X)	0.85		1.40	0.10	0.92	0.38
Avail Cap(c_a), veh/h	312		1117	1467	355	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	20.5	4.7	48.7	4.4
Incr Delay (d2), s/veh	13.6	0.0	185.2	0.0	27.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	82.2	0.8	12.0	19.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.9	0.0	205.7	4.8	76.5	4.6
LnGrp LOS	E		F	A	E	A
Approach Vol, veh/h	183	A		1701	785	
Approach Delay, s/veh	66.9			189.4	33.7	
Approach LOS	E			F	C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	76.0	18.7		28.3		94.7
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	71.5	20.5		24.5		96.5
Max Q Clear Time (g_c+I1), s	73.5	13.8		23.5		4.6
Green Ext Time (p_c), s	0.0	0.4		0.4		0.7

Intersection Summary		
HCM 6th Ctrl Delay		135.2
HCM 6th LOS		F

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	337.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	185	408	597	34	26	969
Future Vol, veh/h	185	408	597	34	26	969
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	443	649	37	28	1053

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	686	0	-	0	1513	668
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	845	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	908	-	-	-	132	~ 458
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	908	-	-	-	93	~ 458
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	$ 750.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	908	-	-	-	415
HCM Lane V/C Ratio	0.221	-	-	-	2.606
HCM Control Delay (s)	10.1	0	-	-	$ 750.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.8	-	-	-	87.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	89	129	519	1573	37
Future Vol, veh/h	25	89	129	519	1573	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	97	140	564	1710	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2554	1710	1750	0	-	0
Stage 1	1710	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	29	112	358	-	-	-
Stage 1	160	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	112	358	-	-	-
Mov Cap-2 Maneuver	~ 18	-	-	-	-	-
Stage 1	97	-	-	-	-	-
Stage 2	422	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	250.3	4.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	358	-	18	112	-	-
HCM Lane V/C Ratio	0.392	-	1.51	0.864	-	-
HCM Control Delay (s)	21.4	-	$ 705.7	122.4	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.8	-	3.8	5.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

PROJECTED WITH IMPROVEMENTS CONDITIONS CAPACITY ANALYSES

Intersection	
Int Delay, s/veh	2377

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	549	48	144	1924	211	281
Future Vol, veh/h	549	48	144	1924	211	281
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	597	52	157	2091	229	305

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2787	382	534	0	-	0
Stage 1	382	-	-	-	-	-
Stage 2	2405	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 21	665	1034	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	~ 71	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 21	665	1034	-	-	-
Mov Cap-2 Maneuver	~ 21	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	~ 71	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay	$ 12567.8	0.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1034	-	23	-	-
HCM Lane V/C Ratio	0.151	-	28.214	-	-
HCM Control Delay (s)	9.1	$	12567.8	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	81.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	162.5

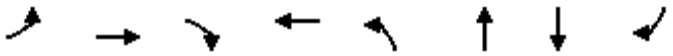
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	99	2417	56	44	462
Future Vol, veh/h	29	99	2417	56	44	462
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	108	2627	61	48	502

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3256	2658	0	0	2688	0
Stage 1	2658	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 10	~ 29	-	-	153	-
Stage 1	53	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 6	~ 29	-	-	153	-
Mov Cap-2 Maneuver	~ 6	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	310	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 3930.9	0	3.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	16	153	-
HCM Lane V/C Ratio	-	-	8.696	0.313	-
HCM Control Delay (s)	-	-	$ 3930.9	38.9	0
HCM Lane LOS	-	-	F	E	A
HCM 95th %tile Q(veh)	-	-	18.2	1.2	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	64	9	51	183	20	2708	343	25
v/c Ratio	0.51	0.04	0.22	0.96	0.02	1.80	0.80	0.02
Control Delay	76.9	59.1	16.8	112.0	2.6	382.4	24.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	59.1	16.8	112.0	2.6	382.4	24.1	0.9
Queue Length 50th (ft)	60	8	0	161	3	~3998	145	0
Queue Length 95th (ft)	113	27	42	#322	8	#4216	#464	5
Internal Link Dist (ft)		742		1113		2323	1073	
Turn Bay Length (ft)	100		100		100			100
Base Capacity (vph)	126	223	234	191	833	1503	428	1302
Starvation Cap Reductn	0	0	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	0.51	0.04	0.22	0.96	0.02	1.80	0.80	0.02

Intersection Summary

~ 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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	8	47	93	3	73	18	2191	300	35	281	23
Future Volume (veh/h)	59	8	47	93	3	73	18	2191	300	35	281	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	9	51	101	3	79	20	2382	0	38	305	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	224	190	130	4	73	48	1534		27	200	1300
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.82	0.82	0.00	0.82	0.82	0.82
Sat Flow, veh/h	1316	1870	1585	769	31	608	1050	1870	0	0	244	1585
Grp Volume(v), veh/h	64	9	51	183	0	0	20	2382	0	343	0	25
Grp Sat Flow(s),veh/h/ln	1316	1870	1585	1408	0	0	1050	1870	0	244	0	1585
Q Serve(g_s), s	0.0	0.6	4.4	17.4	0.0	0.0	0.0	123.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s	8.6	0.6	4.4	18.0	0.0	0.0	123.0	123.0	0.0	123.0	0.0	0.4
Prop In Lane	1.00		1.00	0.55		0.43	1.00		0.00	0.11		1.00
Lane Grp Cap(c), veh/h	174	224	190	206	0	0	48	1534		227	0	1300
V/C Ratio(X)	0.37	0.04	0.27	0.89	0.00	0.00	0.42	1.55		1.51	0.00	0.02
Avail Cap(c_a), veh/h	174	224	190	206	0	0	48	1534		227	0	1300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.8	58.4	60.0	66.9	0.0	0.0	75.0	13.5	0.0	62.9	0.0	2.5
Incr Delay (d2), s/veh	1.3	0.1	0.7	33.9	0.0	0.0	5.7	252.2	0.0	252.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.3	1.8	8.9	0.0	0.0	0.8	137.2	0.0	23.2	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	58.4	60.8	100.8	0.0	0.0	80.7	265.7	0.0	315.2	0.0	2.5
LnGrp LOS	E	E	E	F	A	A	F	F		F	A	A
Approach Vol, veh/h		124			183			2402	A		368	
Approach Delay, s/veh		61.8			100.8			264.1			294.0	
Approach LOS		E			F			F			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		127.5		22.5		127.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		123.0		18.0		123.0		18.0				
Max Q Clear Time (g_c+I1), s		125.0		10.6		125.0		20.0				
Green Ext Time (p_c), s		0.0		0.2		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			249.8									
HCM 6th LOS			F									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	102	171	505	164	971	976
v/c Ratio	0.35	0.14	0.96	0.23	1.02	0.74
Control Delay	48.9	2.0	64.2	25.8	62.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	2.0	64.2	25.8	62.9	7.2
Queue Length 50th (ft)	71	11	331	84	~798	149
Queue Length 95th (ft)	127	29	#601	136	#1050	283
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	293	1190	526	721	951	1324
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.14	0.96	0.23	1.02	0.74

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	94	157	465	151	893	898
Future Volume (veh/h)	94	157	465	151	893	898
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	0	505	164	971	976
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	295		544	725	957	1157
Arrive On Green	0.16	0.00	0.19	0.39	0.54	0.54
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	102	0	505	164	971	976
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	5.8	0.0	23.1	7.1	64.5	51.9
Cycle Q Clear(g_c), s	5.8	0.0	23.1	7.1	64.5	51.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	295		544	725	957	1157
V/C Ratio(X)	0.35		0.93	0.23	1.01	0.84
Avail Cap(c_a), veh/h	295		544	725	957	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	36.1	24.7	27.7	11.4
Incr Delay (d2), s/veh	3.2	0.0	22.5	0.7	32.6	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	6.3	3.2	33.7	43.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.2	0.0	58.7	25.4	60.4	17.2
LnGrp LOS	D		E	C	F	B
Approach Vol, veh/h	102	A		669	1947	
Approach Delay, s/veh	48.2			50.5	38.8	
Approach LOS	D			D	D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	27.6	23.4		69.0		51.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	23.1	18.9		64.5		46.5
Max Q Clear Time (g_c+I1), s	25.1	7.8		66.5		9.1
Green Ext Time (p_c), s	0.0	0.3		0.0		0.8

Intersection Summary			
HCM 6th Ctrl Delay		42.0	
HCM 6th LOS		D	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	403	586	393	31	12	223
Future Vol, veh/h	403	586	393	31	12	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	637	427	34	13	242

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	461	0	-	0	1957	444
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	1513	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1100	-	-	-	70	614
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	201	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1100	-	-	-	27	614
Mov Cap-2 Maneuver	-	-	-	-	27	-
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	201	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	65
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1100	-	-	-	291
HCM Lane V/C Ratio	0.398	-	-	-	0.878
HCM Control Delay (s)	10.4	0	-	-	65
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	1.9	-	-	-	7.8

Intersection	
Int Delay, s/veh	14

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	95	36	2481	412	10
Future Vol, veh/h	28	95	36	2481	412	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	103	39	2697	448	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3223	448	459	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	2775	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 11	611	1102	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	611	1102	-	-	-
Mov Cap-2 Maneuver	~ 11	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	46	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 346.7	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1102	-	11	611	-	-
HCM Lane V/C Ratio	0.036	-	2.767	0.169	-	-
HCM Control Delay (s)	8.4	-	$ 1481.8	12.1	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	4.8	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	567

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	339	96	71	302	1065	560
Future Vol, veh/h	339	96	71	302	1065	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	368	104	77	328	1158	609

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1945	1463	1767	0	-	0
Stage 1	1463	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 71	158	353	-	-	-
Stage 1	~ 213	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 52	158	353	-	-	-
Mov Cap-2 Maneuver	~ 52	-	-	-	-	-
Stage 1	~ 156	-	-	-	-	-
Stage 2	621	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, $	3168.4	3.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	353	-	61	-	-
HCM Lane V/C Ratio	0.219	-	7.751	-	-
HCM Control Delay (s)	18	$	3168.4	-	-
HCM Lane LOS	C	A	F	-	-
HCM 95th %tile Q(veh)	0.8	-	54.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.3

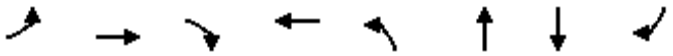
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	68	581	60	98	1564
Future Vol, veh/h	61	68	581	60	98	1564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	74	632	65	107	1700

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2579	665	0	0	697	0
Stage 1	665	-	-	-	-	-
Stage 2	1914	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 28	460	-	-	899	-
Stage 1	511	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	460	-	-	899	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	460	899	-
HCM Lane V/C Ratio	-	-	0.305	0.118	-
HCM Control Delay (s)	-	-	16.2	9.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	61	9	49	395	70	523	1438	88
v/c Ratio	0.18	0.02	0.12	1.21	1.23	0.42	1.17	0.08
Control Delay	41.6	38.6	11.1	160.8	219.1	9.0	107.4	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	38.6	11.1	160.8	219.1	9.0	107.4	4.5
Queue Length 50th (ft)	41	6	0	~403	~73	159	~1441	15
Queue Length 95th (ft)	82	21	34	#608	#127	223	#1706	31
Internal Link Dist (ft)		742		1113		2323	1073	
Turn Bay Length (ft)	100		100		100			100
Base Capacity (vph)	338	437	408	327	57	1254	1229	1110
Starvation Cap Reductn	0	0	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	0.18	0.02	0.12	1.21	1.23	0.42	1.17	0.08

Intersection Summary

~ 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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	8	45	307	11	45	64	354	127	65	1258	81
Future Volume (veh/h)	56	8	45	307	11	45	64	354	127	65	1258	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	9	49	334	12	49	70	385	0	71	1367	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	439	372	321	10	40	145	1302		81	1204	1103
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.70	0.70	0.00	0.70	0.70	0.70
Sat Flow, veh/h	1341	1870	1585	1151	41	169	398	1870	0	75	1730	1585
Grp Volume(v), veh/h	61	9	49	395	0	0	70	385	0	1438	0	88
Grp Sat Flow(s),veh/h/ln	1341	1870	1585	1361	0	0	398	1870	0	1805	0	1585
Q Serve(g_s), s	0.0	0.5	3.2	30.0	0.0	0.0	0.0	10.2	0.0	76.5	0.0	2.3
Cycle Q Clear(g_c), s	4.0	0.5	3.2	30.5	0.0	0.0	47.5	10.2	0.0	90.5	0.0	2.3
Prop In Lane	1.00		1.00	0.85		0.12	1.00		0.00	0.05		1.00
Lane Grp Cap(c), veh/h	426	439	372	370	0	0	145	1302		1286	0	1103
V/C Ratio(X)	0.14	0.02	0.13	1.07	0.00	0.00	0.48	0.30		1.12	0.00	0.08
Avail Cap(c_a), veh/h	426	439	372	370	0	0	145	1302		1286	0	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.6	38.3	39.3	52.1	0.0	0.0	13.2	7.6	0.0	20.5	0.0	6.4
Incr Delay (d2), s/veh	0.2	0.0	0.2	65.5	0.0	0.0	2.5	0.1	0.0	64.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	1.3	18.7	0.0	0.0	1.2	3.4	0.0	53.9	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	38.3	39.5	117.5	0.0	0.0	15.7	7.7	0.0	84.8	0.0	6.4
LnGrp LOS	D	D	D	F	A	A	B	A		F	A	A
Approach Vol, veh/h		119			395			455	A		1526	
Approach Delay, s/veh		39.5			117.5			8.9			80.3	
Approach LOS		D			F			A			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		95.0		35.0		95.0		35.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		90.5		30.5		90.5		30.5				
Max Q Clear Time (g_c+I1), s		49.5		6.0		92.5		32.5				
Green Ext Time (p_c), s		3.5		0.3		0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			71.2									
HCM 6th LOS			E									

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	183	701	1563	138	317	468
v/c Ratio	0.74	1.18	1.44	0.10	0.93	0.36
Control Delay	70.4	131.5	225.8	4.9	83.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	131.5	225.8	4.9	83.8	2.6
Queue Length 50th (ft)	146	~669	~1684	28	259	39
Queue Length 95th (ft)	227	#907	#1996	47	#450	76
Internal Link Dist (ft)	1044			3802	1526	
Turn Bay Length (ft)		200	300			
Base Capacity (vph)	302	595	1086	1422	342	1307
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	1.18	1.44	0.10	0.93	0.36

Intersection Summary

~ 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.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	168	645	1438	127	292	431
Future Volume (veh/h)	168	645	1438	127	292	431
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	0	1563	138	317	468
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	216		1117	1371	345	1228
Arrive On Green	0.12	0.00	0.58	0.73	0.19	0.19
Sat Flow, veh/h	1870	1585	1781	1870	1781	1585
Grp Volume(v), veh/h	183	0	1563	138	317	468
Grp Sat Flow(s),veh/h/ln	1870	1585	1781	1870	1781	1585
Q Serve(g_s), s	11.8	0.0	71.5	2.6	21.5	11.6
Cycle Q Clear(g_c), s	11.8	0.0	71.5	2.6	21.5	11.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	216		1117	1371	345	1228
V/C Ratio(X)	0.85		1.40	0.10	0.92	0.38
Avail Cap(c_a), veh/h	312		1117	1467	355	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	20.5	4.7	48.7	4.4
Incr Delay (d2), s/veh	13.6	0.0	185.2	0.0	27.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	82.2	0.8	12.0	19.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.9	0.0	205.7	4.8	76.5	4.6
LnGrp LOS	E		F	A	E	A
Approach Vol, veh/h	183	A		1701	785	
Approach Delay, s/veh	66.9			189.4	33.7	
Approach LOS	E			F	C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	76.0	18.7		28.3		94.7
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	71.5	20.5		24.5		96.5
Max Q Clear Time (g_c+I1), s	73.5	13.8		23.5		4.6
Green Ext Time (p_c), s	0.0	0.4		0.4		0.7

Intersection Summary			
HCM 6th Ctrl Delay		135.2	
HCM 6th LOS		F	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	337.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	185	408	597	34	26	969
Future Vol, veh/h	185	408	597	34	26	969
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	201	443	649	37	28	1053

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	686	0	-	0	1513	668
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	845	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	908	-	-	-	132	~ 458
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	908	-	-	-	93	~ 458
Mov Cap-2 Maneuver	-	-	-	-	93	-
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	$ 750.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	908	-	-	-	415
HCM Lane V/C Ratio	0.221	-	-	-	2.606
HCM Control Delay (s)	10.1	0	-	-	$ 750.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.8	-	-	-	87.9

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	89	129	519	1573	37
Future Vol, veh/h	25	89	129	519	1573	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	97	140	564	1710	40

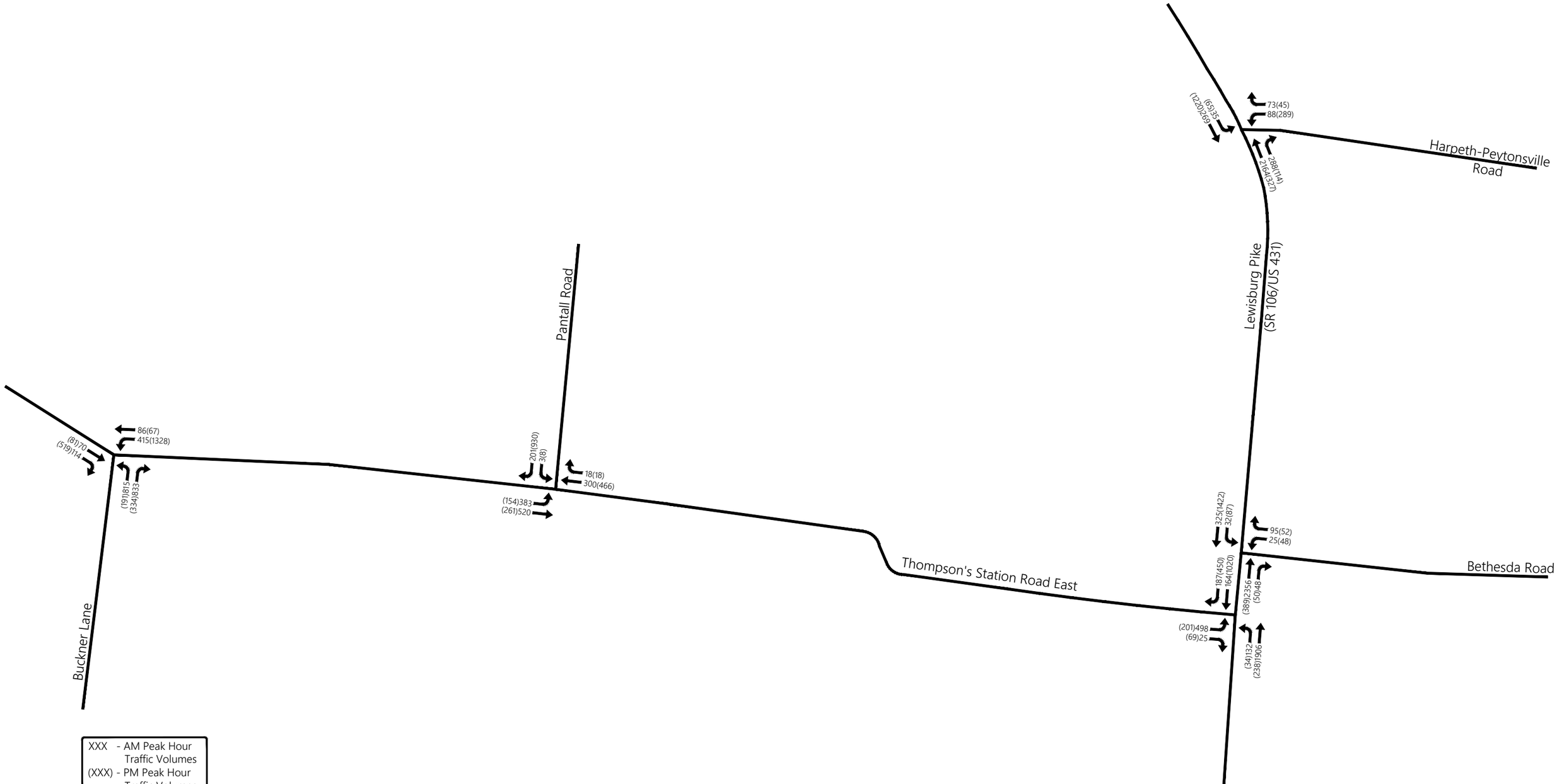
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2554	1710	1750	0	-	0
Stage 1	1710	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	29	112	358	-	-	-
Stage 1	160	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 18	112	358	-	-	-
Mov Cap-2 Maneuver	~ 18	-	-	-	-	-
Stage 1	97	-	-	-	-	-
Stage 2	422	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	250.3	4.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	358	-	18	112	-	-
HCM Lane V/C Ratio	0.392	-	1.51	0.864	-	-
HCM Control Delay (s)	21.4	-	$ 705.7	122.4	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.8	-	3.8	5.1	-	-

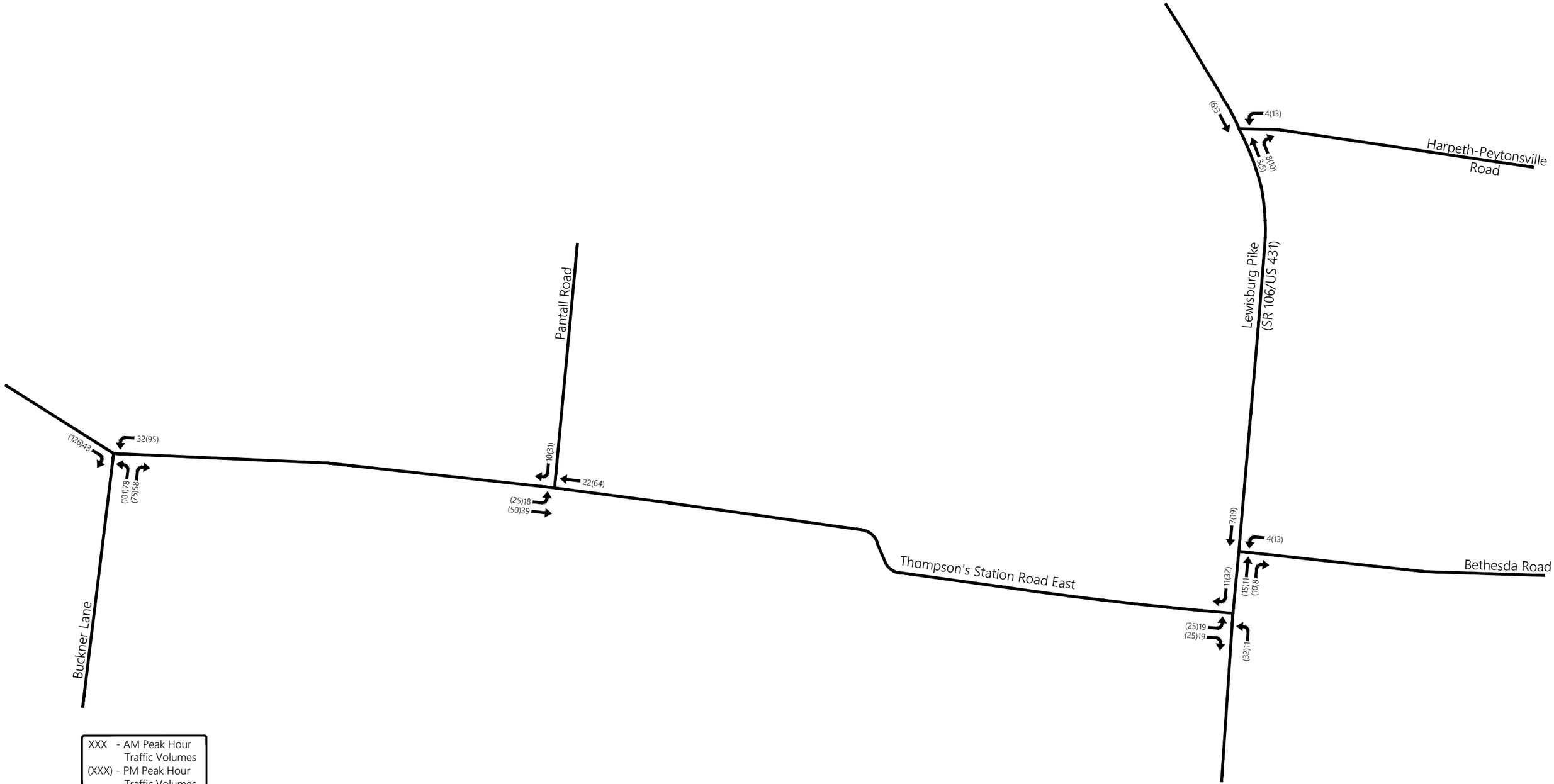
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

APPENDIX E
BACKGROUND DEVELOPMENTS



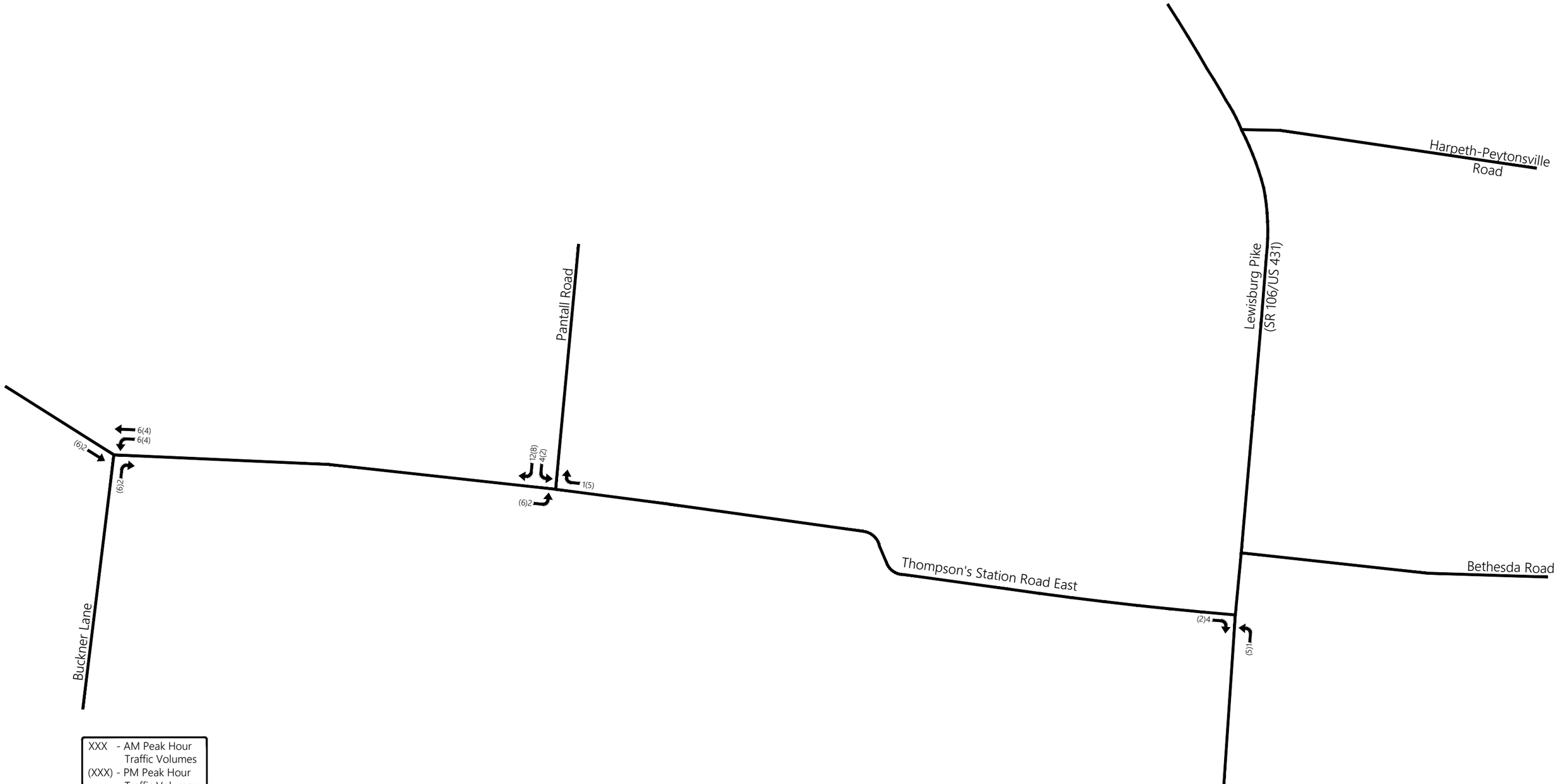
Background Peak Hour Traffic Volumes
(7% General Growth)
(Not to Scale)

Figure E1.



Background Peak Hour Traffic Volumes
Generated by Alexander Property
(Not to Scale)

Figure E2.



Background Peak Hour Traffic Volumes
Generated by Littlebury
(Not to Scale)

Figure E3.

APPENDIX F
TRIP GENERATION CALCULATIONS

TOTAL TRIP GENERATION

ITE CODE	LAND USE	# UNITS	UNIT TYPE	ADT	AM			PM		
					Enter	Exit	Total	Enter	Exit	Total
210	Single-Family Detached Housing	417	units	3868	75	226	301	252	148	400
820	Shopping Center	1.5	k.s.f.	346	1		1	12	12	24
820	Shopping Center	4	k.s.f.	674	2	2	4	24	26	50
820	Shopping Center	2	k.s.f.	76	1	1	2	14	16	30
912	Drive-In Bank	2	k.s.f.	200	11	8	19	20	21	41
TOTAL				**5164**	90	237	**327**	322	223	**545**

TRIP GENERATION

Single-Family Detached Housing

210 ITE Land Code

417 units

Average Daily Traffic:

Ln(T) = (0.92 * Ln(X) + 2.71)

Ln(T) = (0.92 * Ln(417) + 2.71)

T = 3868

A.M. Peak Hour:

T = 0.71 * (X) + 4.80

T = 0.71 * (417) + 4.80

T = 301

Enter =	75	25%
Exit =	226	75%

P.M. Peak Hour:

Ln(T) = (0.96 * Ln(X) + 0.2)

Ln(T) = (0.96 * Ln(417) + 0.2)

T = 400

Enter =	252	63%
Exit =	148	37%

TRIP GENERATION

Shopping Center

820 ITE Land Code

1.5 k.s.f.

Average Daily Traffic:

Ln(T) = (0.68 * Ln(X) + 5.57)

Ln(T) = (0.68 * Ln(1.5) + 5.57)

T = 346

A.M. Peak Hour:

T = 0.94 * (X)

T = 0.94 * (1.5)

T = 1

Enter =	1	62%
Exit =	0	38%

P.M. Peak Hour:

Ln(T) = (0.74 * Ln(X) + 2.89)

Ln(T) = (0.74 * Ln(1.5) + 2.89)

T = 24

Enter =	12	48%
Exit =	12	52%

TRIP GENERATION

Shopping Center

820 ITE Land Code

4 k.s.f.

Average Daily Traffic:

Ln(T) = (0.68 * Ln(X) + 5.57)

Ln(T) = (0.68 * Ln(4) + 5.57)

T = 674

A.M. Peak Hour:

T = 0.94 * (X)

T = 0.94 * (4)

T = 4

Enter =	2	62%
Exit =	2	38%

P.M. Peak Hour:

Ln(T) = (0.74 * Ln(X) + 2.89)

Ln(T) = (0.74 * Ln(4) + 2.89)

T = 50

Enter =	24	48%
Exit =	26	52%

TRIP GENERATION

Shopping Center

820 ITE Land Code

2 k.s.f.

Average Daily Traffic:

T = 37.75 * (X)

T = 37.75 * (2)

T = 76

A.M. Peak Hour:

T = 0.94 * (X)

T = 0.94 * (2)

T = 2

Enter =	1	62%
Exit =	1	38%

P.M. Peak Hour:

Ln(T) = (0.74 * Ln(X) + 2.89)

Ln(T) = (0.74 * Ln(2) + 2.89)

T = 30

Enter =	14	48%
Exit =	16	52%

TRIP GENERATION

Drive-In Bank

912 ITE Land Code

2 k.s.f.

Average Daily Traffic:

T = 100.03 * (X)

T = 100.03 * (2)

T = 200

A.M. Peak Hour:

T = 9.5 * (X)

T = 9.5 * (2)

T = 19

Enter =	11	58%
Exit =	8	42%

P.M. Peak Hour:

T = 20.45 * (X)

T = 20.45 * (2)

T = 41

Enter =	20	50%
Exit =	21	50%

APPENDIX G
WARRANT ANALYSIS

Northbound - Lewisburg Pike (SR 106/US 431) and Site Access A - AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

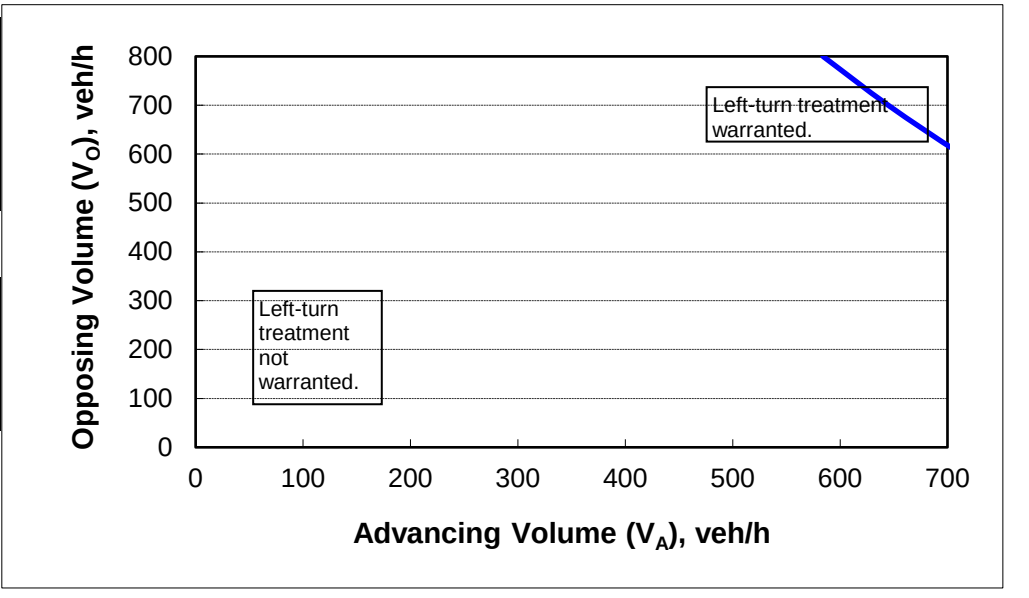
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	2509
Opposing volume (V_O), veh/h:	339

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	936
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Northbound - Lewisburg Pike (SR 106/US 431) and Site Access A - PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

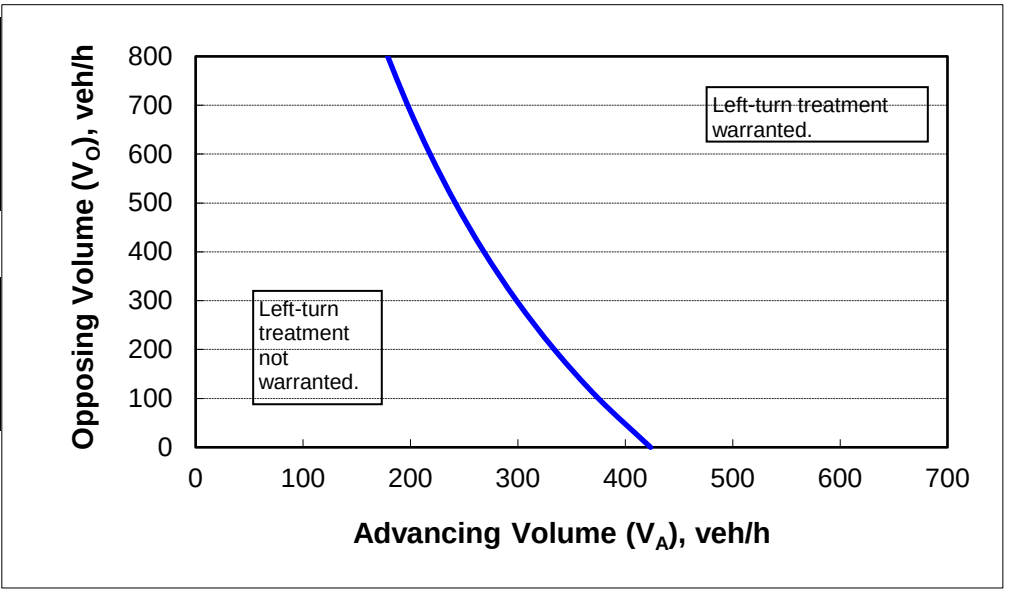
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	12%
Advancing volume (V_A), veh/h:	545
Opposing volume (V_O), veh/h:	1404

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	100
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Southbound - Lewisburg Pike (SR 106/US 431) and Harpeth-Peytsonsville Road - AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

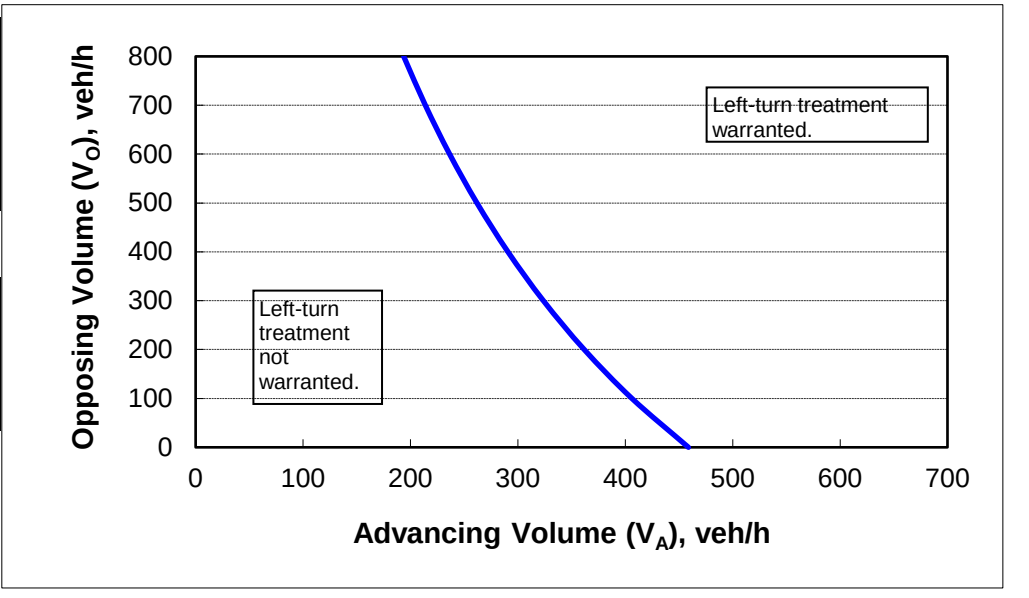
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	10%
Advancing volume (V_A), veh/h:	339
Opposing volume (V_O), veh/h:	2509

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	38
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Southbound - Lewisburg Pike (SR 106/US 431) and Harpeth-Peytsonsville Road - PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

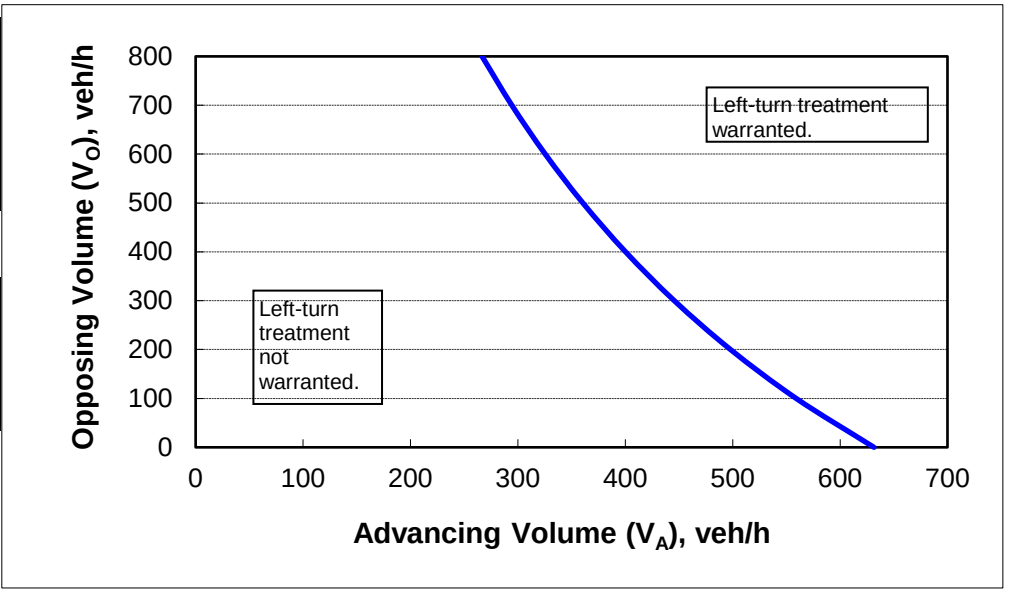
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	1404
Opposing volume (V_O), veh/h:	545

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	344
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Northbound - Lewisburg Pike (SR 106/US 431) and Site Access B - AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

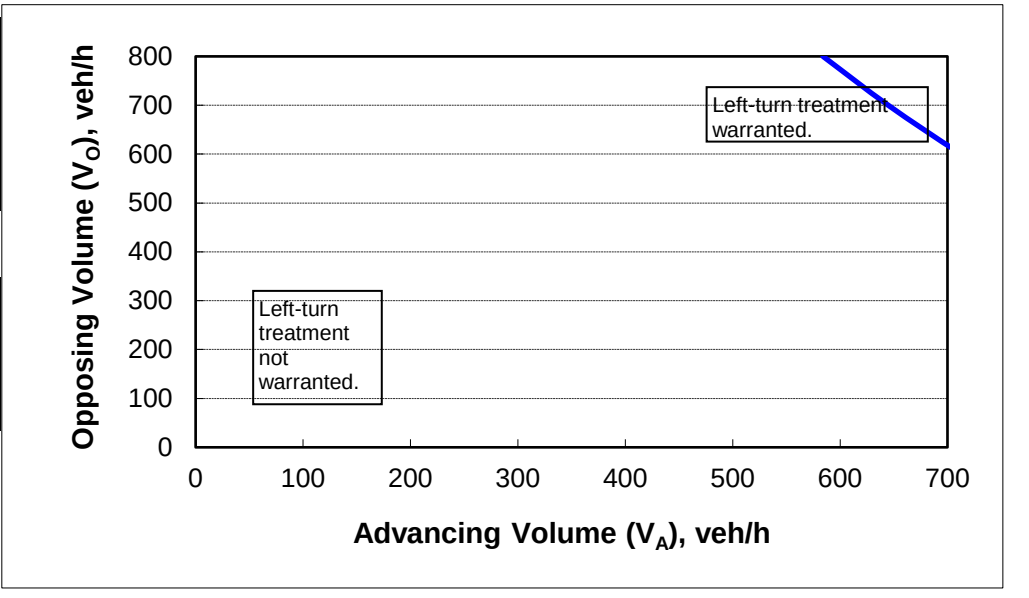
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	2517
Opposing volume (V_O), veh/h:	422

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	857
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Northbound - Lewisburg Pike (SR 106/US 431) and Site Access B - PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

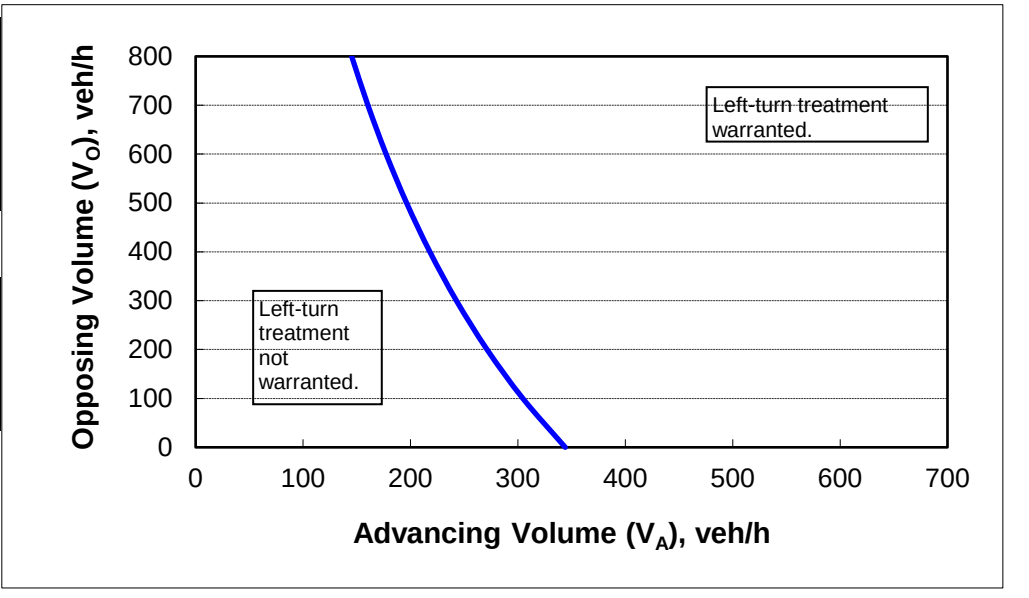
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	20%
Advancing volume (V_A), veh/h:	648
Opposing volume (V_O), veh/h:	1610

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	67
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

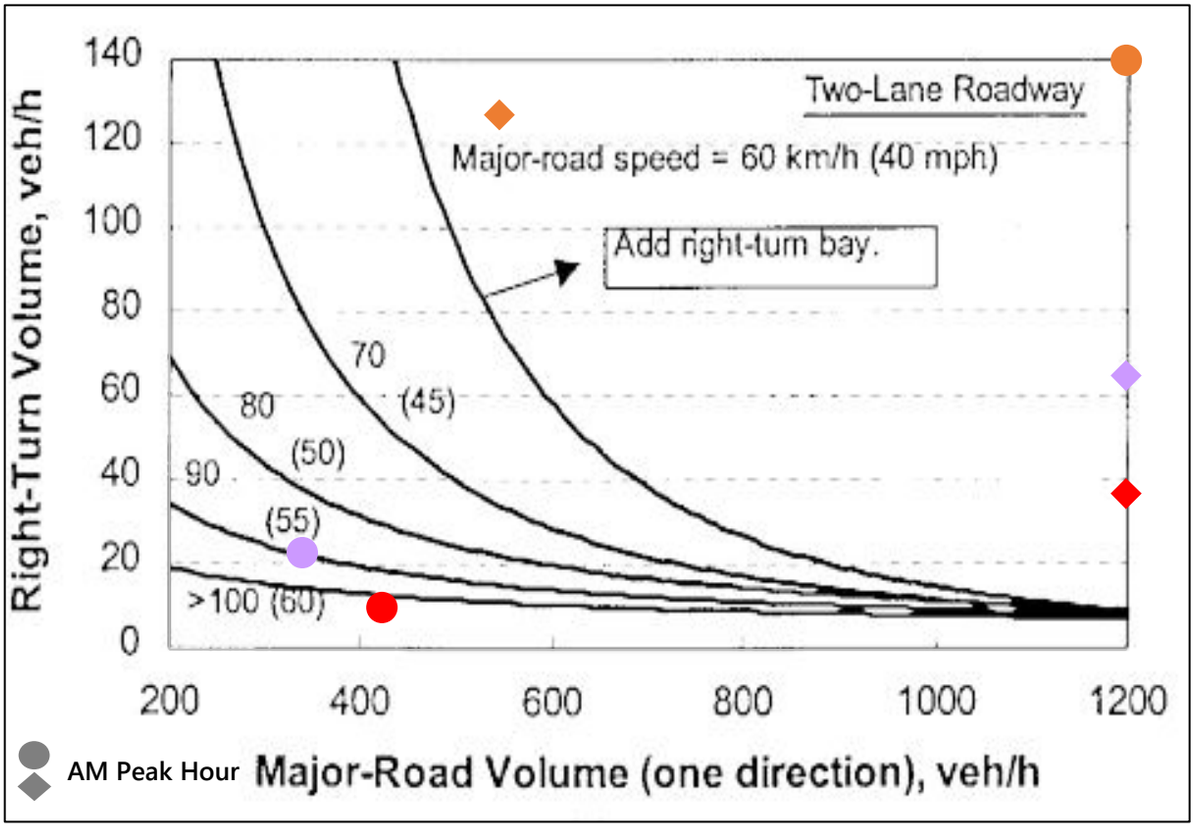
Projected Conditions (Peak Hours)

RIGHT-TURN LANE WARRANT ANALYSIS

(Based on NCHRP 457: Evaluating Intersection Improvements)

Intersection Approach		Speed Limit	AM Peak Hour			PM Peak Hour		
			V_R*	V_A*	Warrant Met?	V_R*	V_A*	Warrant Met?
Southbound - Lewisburg Pike at Site Access A		55	23	339	No	65	1404	Yes
Northbound - Lewisburg Pike at Harpeth-Peytonsville Road		55	300	2509	Yes	127	545	Yes
Southbound - Lewisburg Pike at Site Access B		55	10	422	No	37	1610	Yes

V_R = Right Turn Volumes, V_A = Advancing Volumes

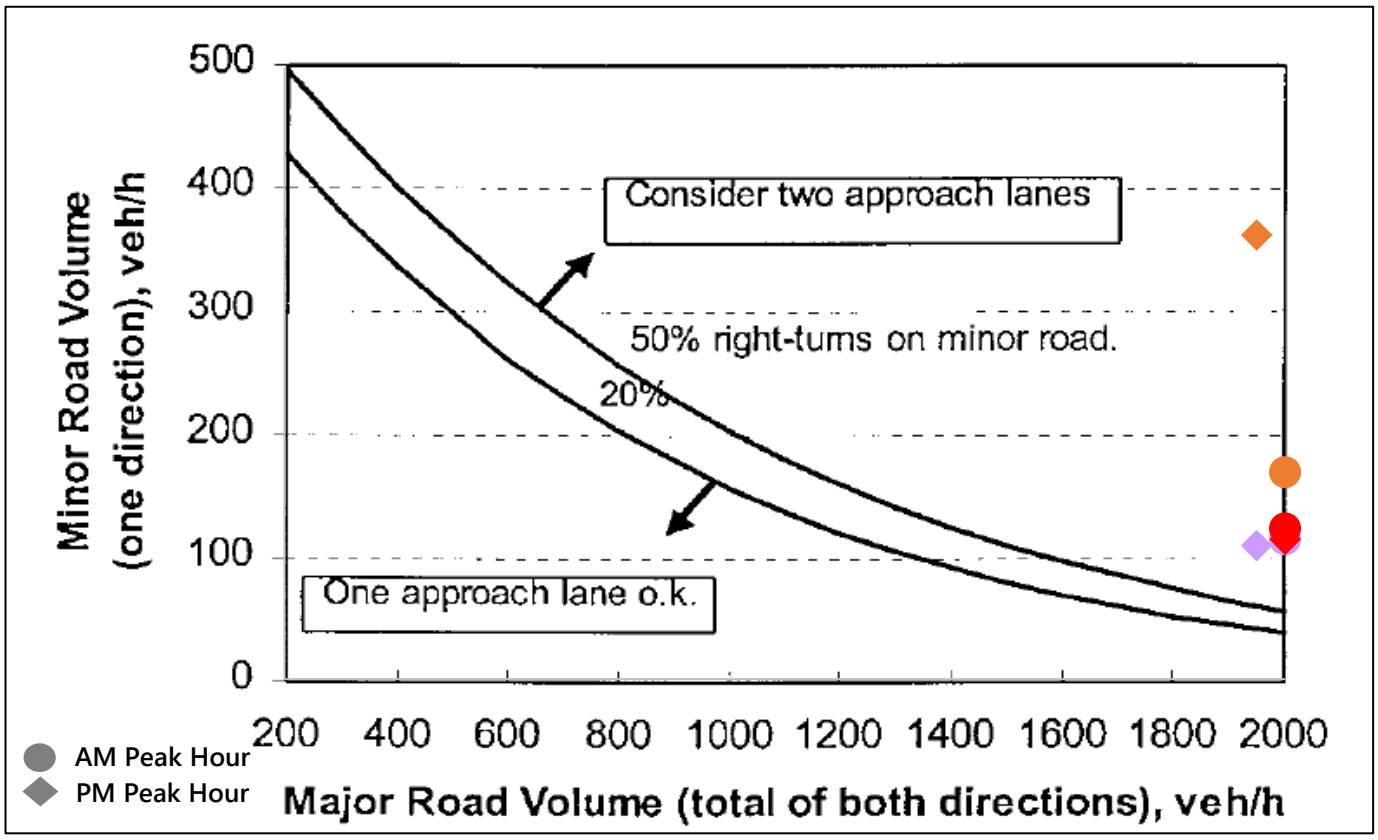


Projected Conditions (Peak Hours)

MINOR APPROACH ANALYSES

(Based on Intersection Channelization Design Guide)

Intersection Approach		AM Peak Hour			PM Peak Hour		
		Minor Road Volume	Major Road Volume	2-Lane Approach?	Minor Road Volume	Major Road Volume	2-Lane Approach?
Eastbound - Site Access A at Lewisburg Pike		114	2848	Yes	109	1949	Yes
Westbound - Harpeth-Peytonsville Road at Lewisburg Pike		169	2848	Yes	363	1949	Yes
Eastbound - Site Access B at Lewisburg Pike		123	2939	Yes	114	2258	Yes

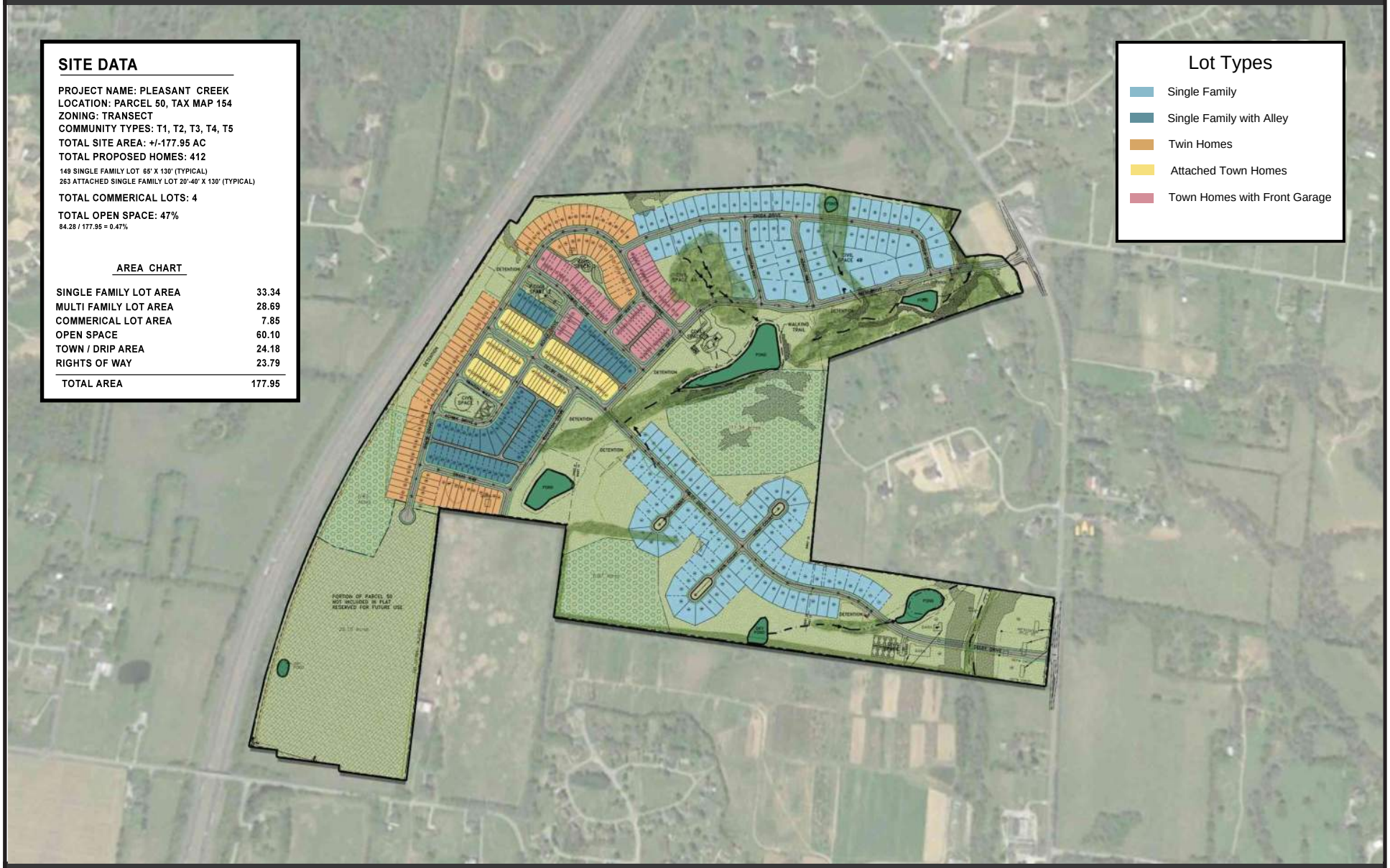


SITE DATA

PROJECT NAME: PLEASANT CREEK
LOCATION: PARCEL 50, TAX MAP 154
ZONING: TRANSECT
COMMUNITY TYPES: T1, T2, T3, T4, T5
TOTAL SITE AREA: +/-177.95 AC
TOTAL PROPOSED HOMES: 412
149 SINGLE FAMILY LOT 65' X 130' (TYPICAL)
263 ATTACHED SINGLE FAMILY LOT 20'-40' X 130' (TYPICAL)
TOTAL COMMERICAL LOTS: 4
TOTAL OPEN SPACE: 47%
84.28 / 177.95 = 0.47%

AREA CHART

SINGLE FAMILY LOT AREA	33.34
MULTI FAMILY LOT AREA	28.69
COMMERICAL LOT AREA	7.85
OPEN SPACE	60.10
TOWN / DRIP AREA	24.18
RIGHTS OF WAY	23.79
TOTAL AREA	177.95



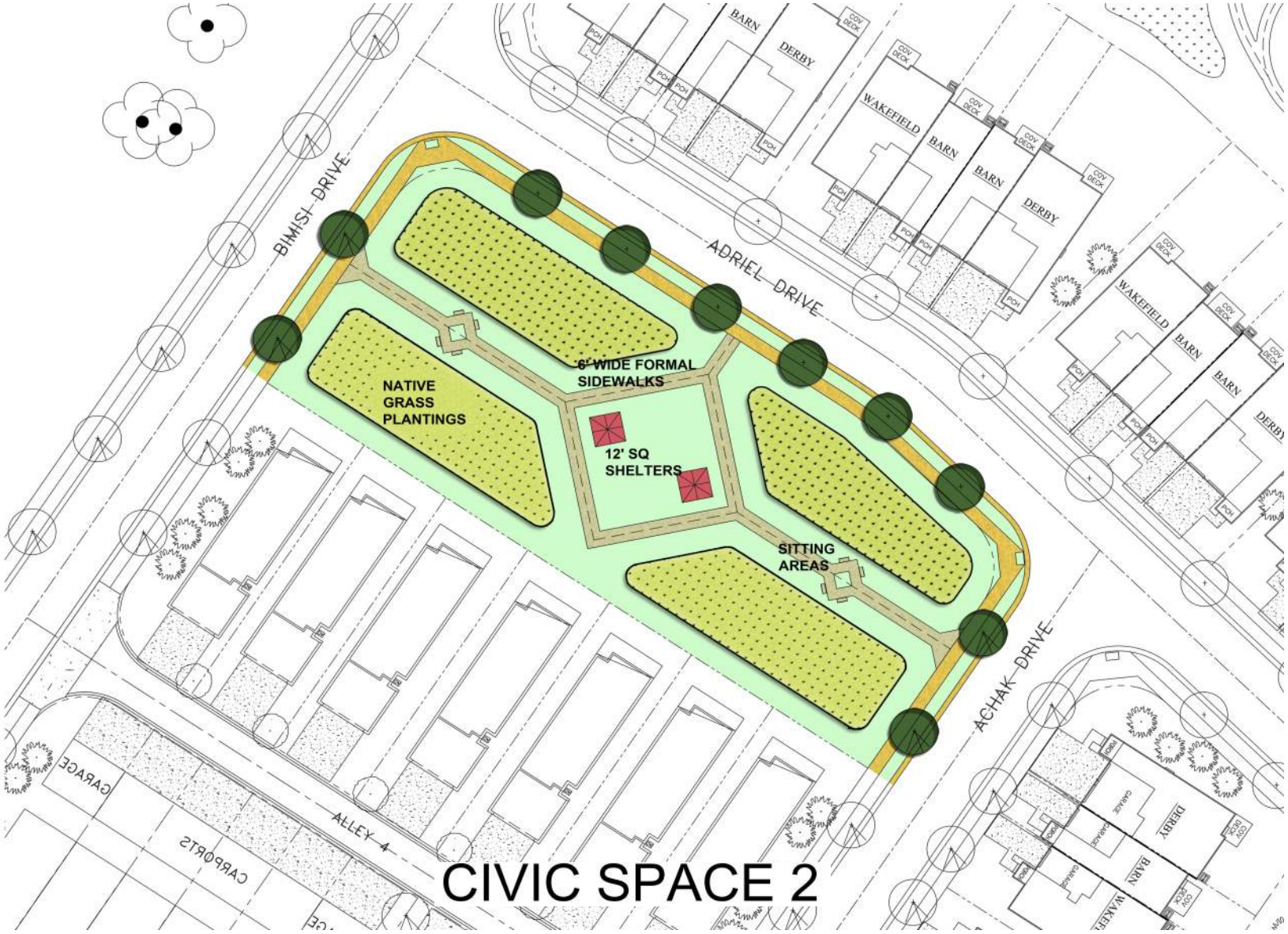
PLEASANT CREEK

CIVIC PLANS
THOMPSON'S STATION, TN

PLEASANT CREEK

CIVIC PLANS

THOMPSON'S STATION, TN



PLEASANT CREEK

CIVIC PLANS

THOMPSON'S STATION, TN

PLEASANT CREEK

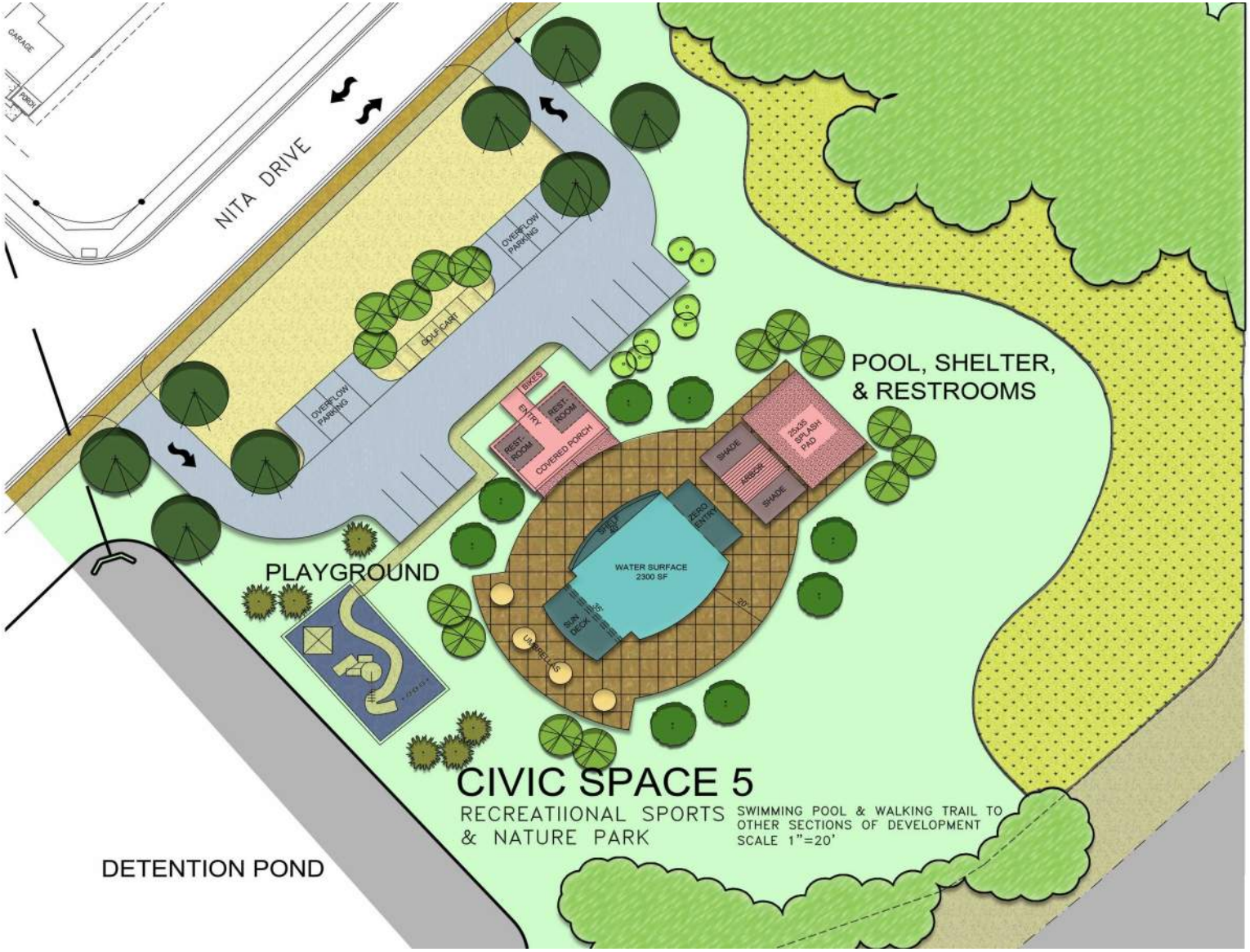
CIVIC PLANS

THOMPSON'S STATION, TN

CIVIC SPACES 4A & 4B

PARKS UNDEVELOPED AREAS HANDLING DRAINAGE ACROSS THE SITE CONTAINING A FEW BENCHES AND PATCHES OF LAWN

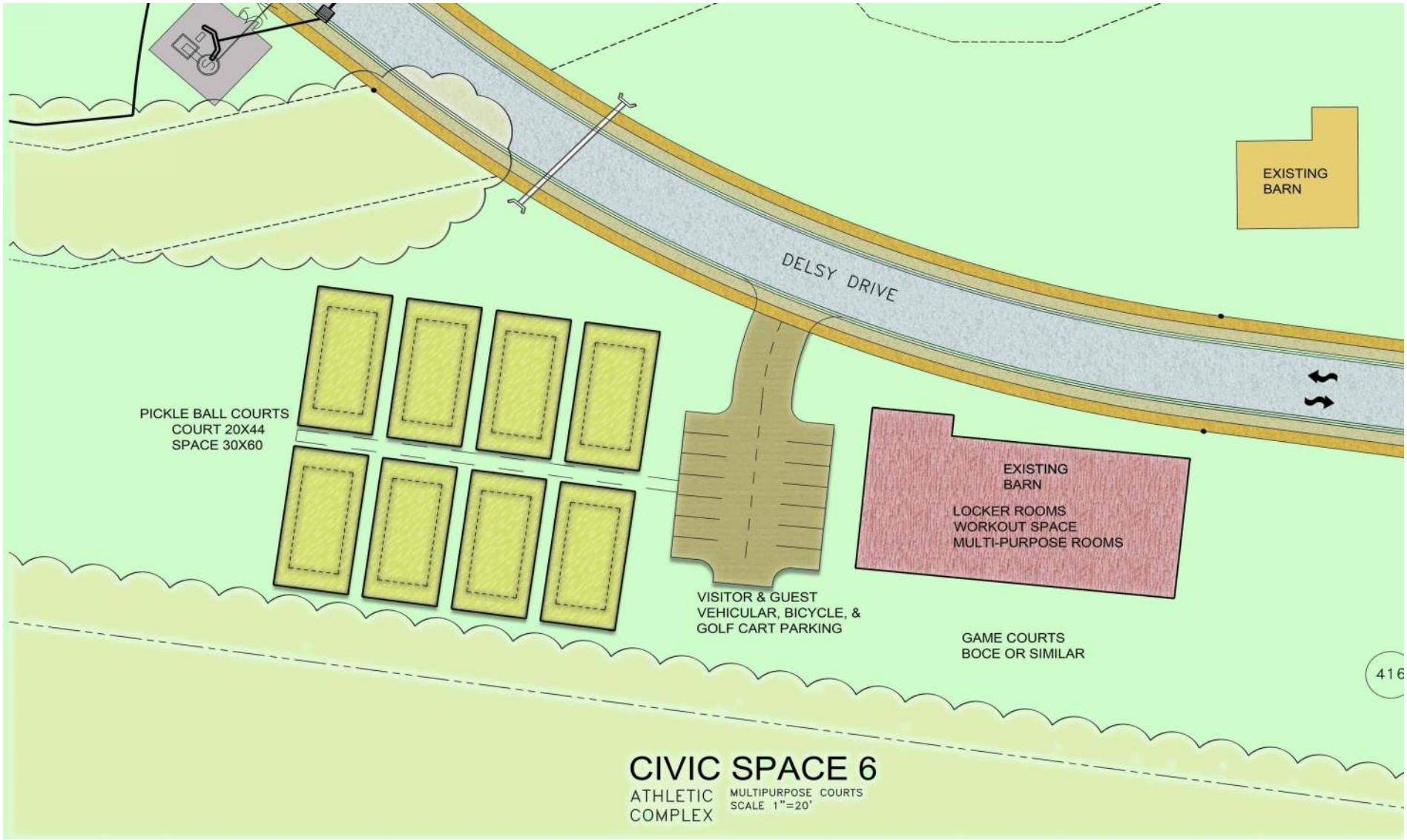
SCALE 1"=40'



PLEASANT CREEK

CIVIC PLANS

THOMPSON'S STATION, TN



PLEASANT CREEK

CIVIC PLANS

THOMPSON'S STATION, TN

Single Family

PLEASANT CREEK

CONCEPTUAL PLAN

THOMPSON'S STATION, TN

Single Family with Alley

PLEASANT CREEK

CONCEPTUAL PLAN

THOMPSON'S STATION, TN

Attached Town Homes

Town Homes with Front Garage

PLEASANT CREEK

CONCEPTUAL PLAN

THOMPSON'S STATION, TN

Б