PLANNED UNIT DEVELOPMENT

FOR THE

KNIGHTSVILLE TRACT

Town of Summerville
Dorchester County, South Carolina

April 12, 2018
Amendment April 22, 2020

Prepared by:
Seamon, Whiteside and Associates, Inc.
128 South Main Street
Suite B
Summerville, South Carolina 29483

Project Summary and Objectives of the Proposed Neighborhood

The proposed development of the Knightsville Tract as a Planned Development is to allow for the construction of a mixed use development, primarily residential in nature that incorporates an educational interpretive path around the preserved areas. It is envisioned that the interpretive path will meander around the property and provide opportunities for interpretive "stations" to be created for the education of the users. The stations would be located in areas where amenities such as wetland ecosystems, native vegetation or wildlife can be explored. It is the intent of the planned development to preserve many of the existing trees in the residential portion. Care has been taken to situate lot lines and roadways in order to minimize the removal of trees.

Project Location

The Knightsville Tract is a compilation of several parcels with frontage on Orangeburg Road. The property is approximately 77 acres consisting of 67 acres of wooded highland and 10 acres of wetland. All tracts are located in Dorchester County and zoned R4.

The TMS numbers for the properties are:

1. 144-01-00-004
2. 143-04-00-013
3. 143-04-00-012
4. 143-04-00-018
5. 143-04-00-019
6. 143-04-00-020
7. 143-04-00-021
8. 144-01-00-005

It is requested that all of the parcels be annexed into the Town and the entire acreage to be zoned PUD. All parties have agreed to annex into the Town and there are no longer any adverse annexation concerns.

Development Guidelines

The current zoning and planning regulations of the Town of Summerville as of the time of this PUD as approved by Town Council shall govern any zoning or planning item not specifically addressed with this rezoning application. The PUD may be amended by adding contiguous properties through the "Major Changes" section 32-125 of the Town of Summerville Zoning Ordinance.

Permitted Uses

This PUD shall allow a mixture of land uses including single family detached, single family attached, educational, recreational, and commercial uses. The commercial tract will be

approximately 1 acre in size as designated on the Conceptual Development Plan at the entrance along Orangeburg Road. Allowable commercial uses for the commercial tract will be those currently allowed under the Town's B-1 and B-2 zoning.

Area and Yard Requirements

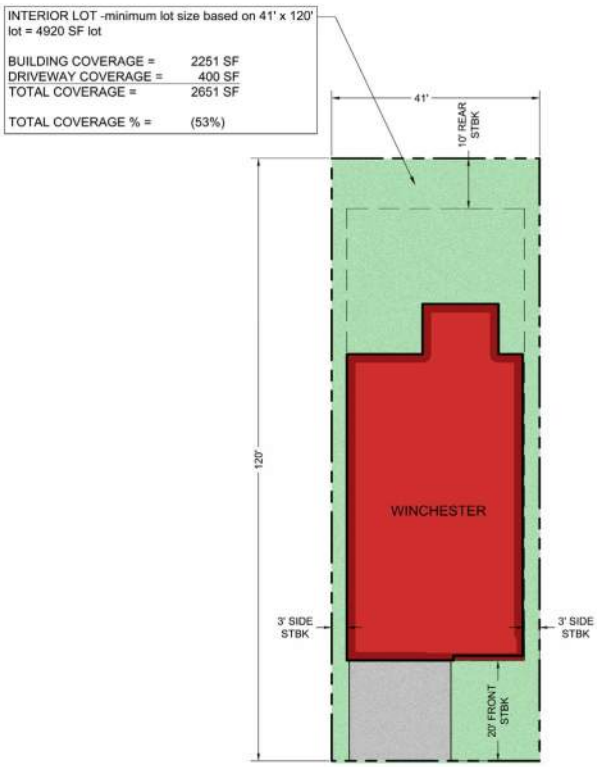
Maximum Density	300 units
Minimum Single Family Lot Size	3,850 square feet (35' x 110')
Minimum Town Home Lot Size	2,000 square feet (20'x100')
Minimum Lot Frontage	20' (measured from the front setback, along curves)
Front Yard Setback	20' (15' if building is rear loaded)
Side Yard Setback	3' (same for accessory structures)
Side Yard Adjacent to Side Street	5' (same for accessory structures)
Rear Yard Setback	10' if front loaded; (15' for rear loaded garages) (5' for accessory structures)

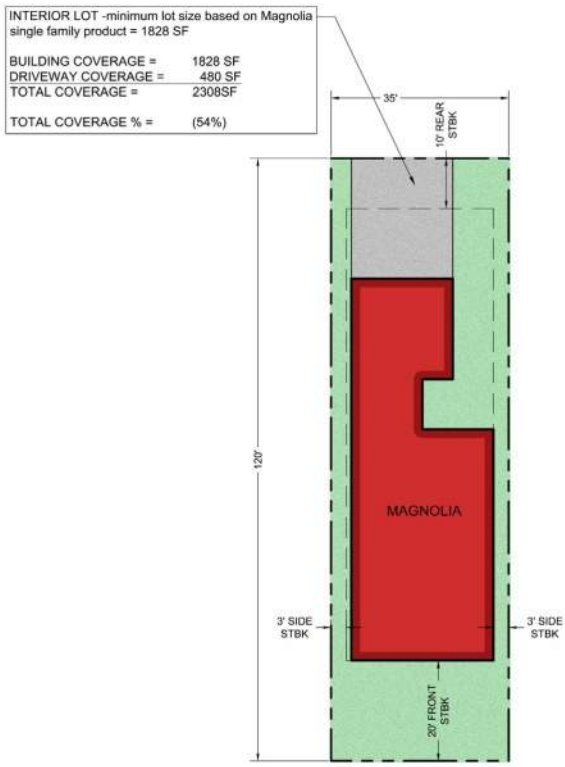
Notes:

- Building setbacks are measured to the face of the structure. Roof overhangs, steps, porches, mechanical equipment servicing the building, and screening walls are allowed to encroach into the setback by a maximum of three feet (3'), but not into easements or rights of ways.
- There are zero setbacks if buildings are adjoining, such as town homes or commercial uses.
- Corner lots require only one front setback.
- The minimum distance between buildings shall be determined based on Fire Code requirements at the time the building permit application is submitted.
- Buffering of adjacent properties outside of this PUD will comply with current Town of Summerville zoning regulations.

Building Design and Site Plan Review

Maximum Lot Impervious Ratio	60% (Single Family) 75% (Town Home)
Maximum Building Height	35' 20' for accessory structures





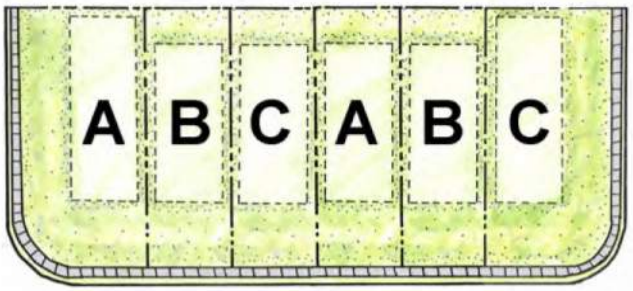
- Building heights are measured from average adjacent ground at the corners of the building to the eave of the structure, excluding any decorative cupolas and/or fireplace chimneys.
- Accessory buildings shall not be taller than the primary structure.
- The architecture will be in keeping with already present styles located with the Town of Summerville. All homes will be constructed with brick and cementitious siding. Vinyl siding is not an approved siding material. Vinyl siding may be used in trim, soffit, and fascia on all elevations and along porch ceilings.

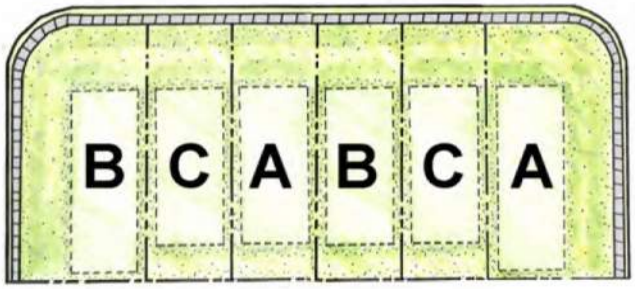
Façade Variety Program

In order to avoid monotony of architectural design, no approval shall be issued for the construction of a single family home if it substantially like any proposed neighboring building for which an approval has already been issued.

- A building shall be considered neighboring it if fronts on the same street as the building under construction or an intersecting street; no building elevation be repeated across from, adjacent to, or diagonal to a similar building elevation. There shall be a minimum of a 2-lot gap between each similar building elevation (see diagram above in which A, B, C represent different elevation styles).

- Vary garage door locations to the front façade of the house when possible. Avoid continuous runs of garages in the same unbroken plain.
- Vary roof orientation, ridge lines and eave heights between each lot when possible.
- Building façade colors and design elements should vary between each lot with a variation of massing and architectural details on each block.
- Landscaping shall vary in composition, layout and species of plants between each lot.





Surveys
A tree survey of all trees 24" dbh and larger has been completed for all the highland acreage. Prior to clearing, a tree survey of trees 16" – 24" will be prepared and submitted to staff during the preparation of Construction Documents for review and approval of tree removal.

A boundary, tree, and wetland survey has been prepared and is included in this PUD.

Signage
Monument Signage, one or one on each side of roadway, identifying the development shall be permitted with a maximum of 25 square feet of sign area. The sign shall be located within the limits of the property along Orangeburg Road, and are allowed within the landscape buffer or border area, as long as they are not located in the intersection line of site. All other Town of Summerville sign regulations at the time of approval shall be incorporated.

Landscape Buffering
A 25' buffer landscape buffer shall be provided along Orangeburg Road. The buffer may be adjusted to provide the required SCDOT site distances at the proposed intersections. Buffer planting shall follow the regulations outlined for a Class 3 buffer in the current Town of Summerville buffer requirements with the exception that no fence shall be required. Installation of specified buffers must completed within the first phase of development.

Tree Protection and Mitigation

All mitigation for tree removal will be provided on site though planting new canopy trees 2 1/2" caliper or larger along streets, parks or buffers. Grand trees will be graded by a certified arborist. Trees that are A and B will require mitigation. However, trees less than a B, do not require mitigation. These would typically be trees that are diseased, dying, or have poor form.

Sweet Gum trees, regardless of size or condition, are not required to be mitigated. Trees less than 16" may be required to be surveyed, protected, or mitigated in Single Family Home or Town Home lots.

Trees are allowed to be planted within street rights of way with no underground root barrier required. Street trees and sidewalks shall be maintained by the HOA. The Town is allowed to maintain trees in emergency situations such as if a tree is blocking traffic.

Allowable street trees shall be Elms, Overcup Oaks, Live Oaks, Nutall Oaks, Willow Oaks, and Shumard Oaks. Tree species not listed may be used if approved by Town staff.

Phased Earthwork

Mass grading and removal of trees is allowed if the following conditions are met:

- On those lots having proposed building pads with elevation changes in excess of 24" over existing grade.
- Street Trees shall be planted along both sides all streets and shall have an average spacing of 35' to 50'. Street trees shall be 2 ½" minimum caliper.
- Each single family home shall have at least 3 trees and town homes shall have 1 tree, 2 ½" minimum caliper, to be planted on the lot.
- Trees shall be planted at least 10' from any structure.
- Grand trees graded A & B, if removed, shall be mitigated at 100%.
- A ¼ acre sample area of existing trees 6" d.b.h. and greater shall be provided to determine mitigation on lots and HOA areas, in lieu of a 6" tree survey.
- Clearing and mass grading can only occur one phase at a time.
- Street trees will be allowed to count towards mitigation.
- At least 50% of the lots must have construction started before clearing will be approved for the next phase.

Interpretive Pathway

A five foot (5') minimum width interpretive path utilizing a system of trails, boardwalks, and sidewalks is to be constructed throughout the development. An approximate location of the path is shown on the Conceptual Development Plan. It is the intent to field locate the path during construction in order to minimize the disturbance or removal of existing vegetation. Interpretive signs shall be installed to educate the residents about the diversity and ecology of the wetland system. Signage shall be at the sole discretion of the developer and are not required to meet any of the Town of Summerville's codes. Installation of the path must be completed during the phase in which it occurs, and the overall path must be complete prior to 80% of the residential lots being constructed and certificates of occupancy issued.

All pathways, trails and sidewalks shall be maintained by the HOA and open to the public. Pathways must be utilized in wetland areas and they shall be permanent surfaces such as plantation mix and boardwalks. Permanent materials shall be used for all other paths to ensure long-term viability. Trails will also include fitness stations.

Open Space, Parks and Recreation Areas

An amenity center is being proposed within the development to provide for recreation and opportunities for residents to congregate and socialize. The amenity center will have a pool, amenity building, pool deck, be well landscaped, have a playground, and will tie into the overall trail system. The amenity center will be available to the public for a fee through a Club Membership program. The architectural design, massing, and finishes will be equal to or better than the attached example. Installation of improvements must be completed prior to 80% of the residential lots being constructed and certificates of occupancy issued.

Five percent (5%) of the developable areas shall be devoted to open space. Developable areas shall be defined as the total project area minus dedicated roadways and wetlands.

Open space can include wetland buffers, storm water ponds (if amenitized), landscape buffers, trails, boardwalks, and paths. Open space may not be confined to one area, but should blend throughout the development.

Five percent (5%) of the developable area shall be improved Park Spaces such as neighborhood parks, squares and greens, play grounds, and amenity centers. These areas shall be landscaped, have benches, bike racks, other site furnishings and shall serve as focal points for the neighborhood. Designs of these areas shall be submitted to Town staff for approval and compliance with this PUD.

No residential unit shall be further than ¼ mile from a Park Space. All park spaces shall be constructed, owned, and maintained by the developer or the HOA.

The Hurricane Branch and wetlands shall be essentially a Conservation Area with walking trails, boardwalks, and educational opportunities. An interpretive pathway will be provided as outlined above to encourage residents to interact with the natural environment.

All amenities will be built at the developer's expense and reviewed by Town staff to ensure compliance with the intent of the PUD.

Roads and Transportation

The roads and drainage system shall be designed per the Town of Summerville standards with a maximum speed limit of 25 miles per hour. The roads shall be curb and gutter and within a minimum 50' right of way to be dedicated to the public. Alleys shall be private with a 20' right of way and 16' travel lane.

A five foot (5') sidewalk shall be on each side of the roadway. Sidewalks within common areas, not fronting on lots, will be constructed with the infrastructure. A sidewalk, or a trail, will be run from within the development, along the entry road to tie into Orangeburg Road.

A trail or sidewalk will be provided from the project site along Orangeburg Road to the Knightsville Elementary School Campus. This will be at the developer's expense. This trail will encourage pedestrian interconnectivity between the neighborhood and school.

Should adjacent tracts be developed in the future, a minimum of two stub outs will be provided to allow future road and sidewalk interconnectivity between tracts. Final locations shall be determined and coordinated with Town staff.

Construction routes for different phases shall be submitted to Town staff for review and approval. The locations, applications and potential modifications of the proposed road sections shall be submitted for review and approval by the Town Engineer. It shall be the developer's responsibility to ensure construction access does not negatively impact existing neighborhood roads. If an alternate construction route cannot be acquired, a surety bond shall be posted to cover road maintenance.

A preliminary Traffic Impact Analysis has been performed addressing access to the development, existing and proposed traffic volumes and distributions, and the effects of the project on adjacent roadways. A copy of this report is included in this PUD. Road improvements required for this project as outlined in the Traffic Impact Analysis will be built at the developer's expense.

The Central Avenue/Orangeburg Road traffic improvements shall be completed by the 100th living unit (Single Family Home or Townhome) is completed, Certificate of Occupancy issued, or sooner. The improvements to Orangeburg Road at the site entrance shall be completed before a final plat is recorded.

Drainage

The property drains from highland along the boundary lines towards the wetland fingers and then to the Hurricane Branch along the center of the property. Runoff from developed property will be routed through detention pond systems prior to its ultimate outfall. These ponds will be designed to limit post-development runoff to pre-development rates. Temporary ditches, which will be maintained by the developer, may be utilized until the ultimate pond and pipe systems are constructed in specific areas.

Along the Hurricane Branch canal, a drainage easement will be provided and dedicated to the Town and/or Dorchester County for maintenance access of Hurricane Branch. The final size and limits of the drainage easement shall be determined by the Town and/or Dorchester County.

All storm water within the neighborhood will be routed by a combination of grassed swales, underground piping, and overland flow into a series of ponds to be detained and treated before exiting the development. Detention areas will be appropriately landscaped and stabilized in accordance with applicable regulations. The storm water system will be analyzed to ensure that surrounding properties will not be adversely affected by the proposed development.

Storm water management will be designed and implemented in accordance with the Town of Summerville's development standards as well as the requirements of the South Carolina Department of Health and Environmental Control – Office of Ocean and Resource Management.

Storm water Best Management Practices (BMPs), Low Impact Development (LIDs), and other accepted measures will be implemented to reduce post-development runoff rates, improve storm water quality, and potentially reduce existing downstream problems.

Upon its completion and approval, the drainage system, with the exception of ponds and certain LID practices, will be dedicated to and maintained by the Town of Summerville. A Conceptual Drainage Master Plan is included in the Appendix.

Flexibility of Uses and Tracts

The Conceptual Master Plan must maintain flexibility to accommodate specific soil conditions, design parameters, and changing trends and strategies in planning and development. Accordingly the exact location of lot types or land uses may change, as long as the maximum intensities, overall density, and design intent, as described in this document do not increase.

Service Providers

Sanitary Sewer System	Dorchester County Water and Sewer Department*
Domestic Water System	Dorchester Count Water Authority*
Electric	SCE&G
Communications	To be determined

*Letters of availability are included in the PUD.

All utilities will be installed underground. All underground utilities will be coordinated with the applicable utility providers for review and approval, as needed, prior to installation within the neighborhood.

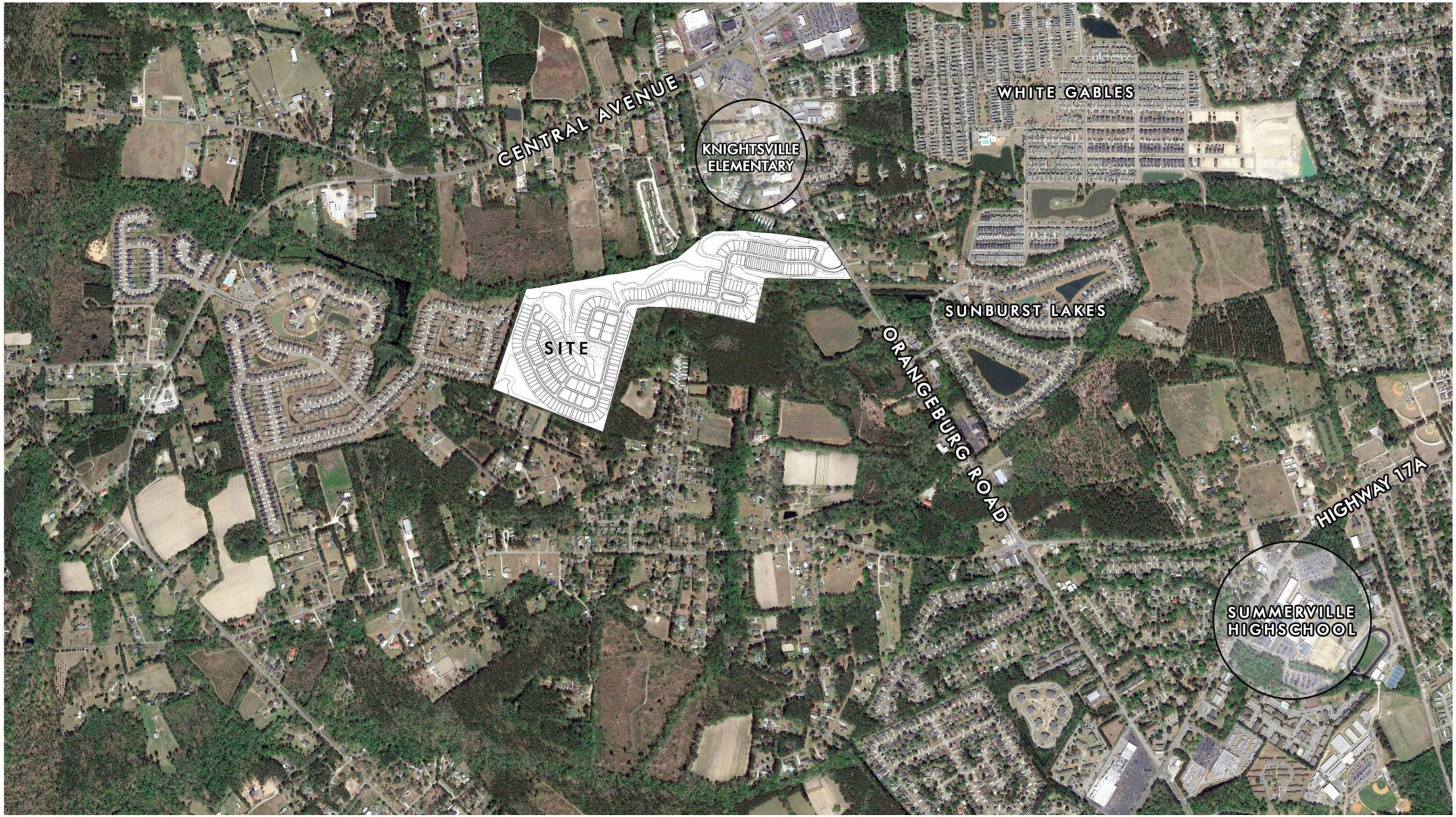
Development Schedule

It is anticipated this development will be completed in 5 to 6 phases of 40 to 60 single family lots per year, over 5 to 7 years, until build out. The timing of development within the PUD will be very much affected by the health of the national and local economies, as well as the demand for various housing types for the region. It is extremely difficult, if not impossible, to accurately project timing of future phases of development and lot demand. The developer has provided the following estimates which are believed to be reasonable at this time. The estimates are subject to change substantially, from time to time, based on market conditions, the supply of competing lots within the area, and other factors, not under the control of the developer. The final schedule will be at the sole discretion of the developer.

Phase One	
Begin Design and Permitting of site infrastructure	Spring 2018
Finish Permitting and begin construction	Summer 2020
Complete Infrastructure and commence residential building	Spring 2021
Complete residential building	Spring 2023
Complete neighborhood build-out	2027

Attachments

Vicinity map
Preliminary Survey
Conceptual Development Plan
Conceptual Open Space Plan
Conceptual Drainage Plan
Coordination Letters
Traffic Study



NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

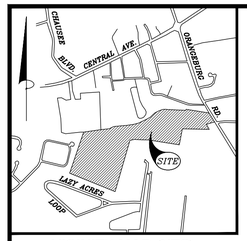
SEAMONWHITESIDE

VICINITY MAP

DORCHESTER COUNTY, SOUTH CAROLINA

7996

4.22.2020



VICINITY MAP (NTS)

S.C. GRID

NOTES:

1) AREA WAS DETERMINED BY THE COORDINATE METHOD.
2) ANYTHING SHOWN OUTSIDE THE DEFINED BOUNDARY IS FOR DESCRIPTIVE PURPOSES ONLY.
3) THE PUBLIC RECORDS REFERENCED ON THIS PLAT ARE ONLY USED AND/OR NECESSARY TO THE ESTABLISHMENT OF THE BOUNDARY OF THIS PROPERTY. THEY ARE NOT AND DO NOT CONSTITUTE A TITLE SEARCH.
4) DISTANCE SHOWN HEREON ARE HORIZONTAL GROUND DISTANCES.
5) NO SUBSURFACE OR ENVIRONMENTAL INVESTIGATION OR SURVEYS WERE PERFORMED FOR THIS PLAT. THEREFORE THIS PLAT DOES NOT REFLECT THE EXISTENCE OR NONEXISTENCE OF WETLANDS, CONTAMINATION, OR OTHER CONDITIONS WHICH MAY AFFECT THIS PROPERTY.
6) PROPERTY IS ZONED PUD PER TOWN OF SUMMERVILLE.
7) TMS NO. 143-04-00-013, 143-04-00-021, 143-04-00-020, 143-04-00-019, 143-04-00-018, 143-04-00-012, 144-01-00-004
8) THERE ARE NO APPLICABLE OCRM CRITICAL LINE BUFFERS OR SETBACKS ON THIS PROPERTY.
9) DORCHESTER COUNTY WATER AND SEWER WILL PROVIDE SANITARY SEWAGE DISPOSAL AND DORCHESTER WATER AUTHORITY WILL PROVIDE WATER SUPPLY.
10) ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM.
11) NO LAND OR OTHER AREA IS DEDICATED FOR PUBLIC USE BY THIS PLAT UNLESS A DEDICATION IS EXPRESSLY STATED HEREON.
12) THE WETLANDS SHOWN HEREON WERE LOCATED BY GPA PROFESSIONAL LAND SURVEYORS AS DELINEATED BY OTHERS. GPA HAS MADE A "BEST GUESS" AS TO THIS LOCATION, SIZE, AND TYPE OF THE UNDERGROUND UTILITIES SHOWN HERON.

FLOOD NOTE:

THIS PROPERTY IS LOCATED IN FLOOD ZONE X, ZONE X (SHADED) AND ZONE AE AS SHOWN FROM FEMA FLOOD MAPS. PANEL NO. 45035C 0338E, REVISED JULY 18, 2017.

LEGEND

- IRON FOUND (AS DESCRIBED)
- IRON SET (5/8" REBAR)
- CONCRETE MONUMENT FOUND
- CONCRETE MONUMENT SET
- CALCULATED POINT
- POWER POLE
- GUY WIRE
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- GAS VALVE
- GAS LINE MARKER
- SEWER MANHOLE
- FORCE MAIN MANHOLE
- STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- SATELLITE DISH
- +7.86 – SPOT ELEVATION
- FENCE LINE
- ADJOINER LINE
- RIGHT-OF-WAY
- CENTER LINE
- EASEMENT LINE (AS DESCRIBED)
- SETBACK LINE
- BUFFER LINE (AS DESCRIBED)
- CONTOUR LINE
- WETLAND LINE
- P – OVERHEAD POWER LINE
- S – SEWER LINE
- SD – STORM DRAIN
- W – WATER LINE
- G – GAS LINE
- FM – FORCE MAIN
- CITY LIMITS
- MATCH LINE
- FLOOD LINE
- WETLAND AREA
- EDGE OF PAVEMENT

I, JOHNATHAN F. BURNS, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF SOUTH CAROLINA, HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS A SURVEY AS SPECIFIED THEREIN, ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

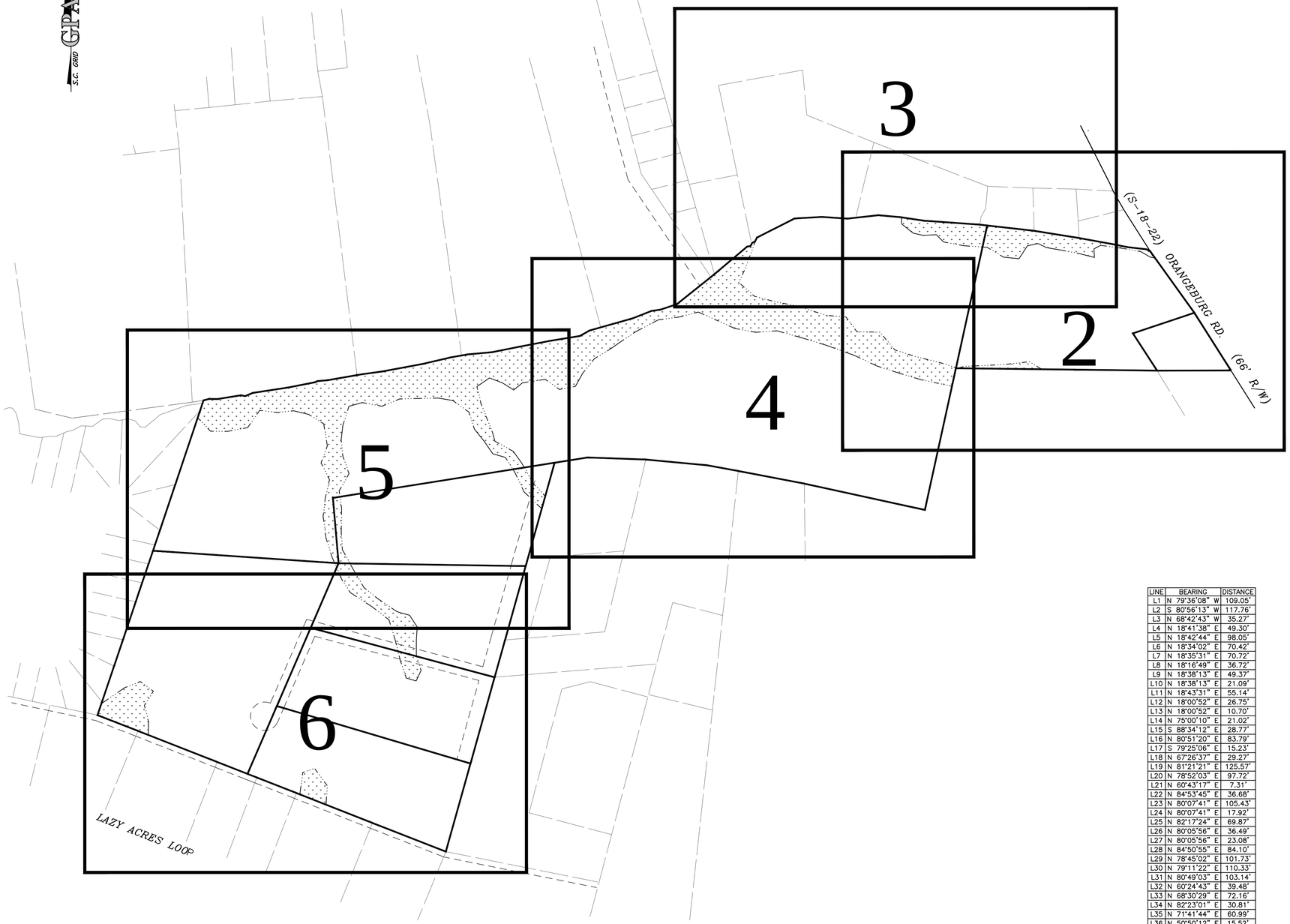
THIS SURVEY IS NOT VALID UNLESS EMBOSSED WITH AN ORIGINAL SURVEYOR'S SEAL. THIS SURVEY HAS BEEN DONE WITHOUT THE BENEFIT OF REVIEWING A CURRENT TITLE SEARCH.

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 23RD DAY OF MARCH, 2020.

JOHNATHAN F. BURNS, PLS-22742

SOUTH CAROLINA – GPA, INC. No. C04379 – CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA – PROFESSIONAL LAND SURVEYOR – NO. 22742 – JOHNATHAN F. BURNS



200' 0 100' 200' 400'

1 inch = 200 ft.

BENCHMARK NOTE:

CONTRACTOR OR PRIVATE PARTIES WILL VERIFY ALL BENCHMARKS BEFORE BEGINNING CONSTRUCTION.

☒ CHECKED JAP ☒ CHECKED JFB

LINE	BEARING	DISTANCE
L1	N 79°36'08" W	109.05'
L2	S 80°56'13" W	117.76'
L3	N 68°42'43" W	35.27'
L4	N 18°41'38" E	49.30'
L5	N 18°42'44" E	98.05'
L6	N 18°34'02" E	70.42'
L7	N 18°35'31" E	70.72'
L8	N 18°16'49" E	36.72'
L9	N 18°38'13" E	49.37'
L10	N 18°38'13" E	21.09'
L11	N 18°43'31" E	55.14'
L12	N 18°00'52" E	26.75'
L13	N 18°00'52" E	10.70'
L14	N 75°00'10" E	21.02'
L15	S 88°34'12" E	28.77'
L16	N 80°51'20" E	83.79'
L17	S 79°25'06" E	15.23'
L18	N 67°26'37" E	29.27'
L19	N 81°21'21" E	125.57'
L20	N 78°52'03" E	97.72'
L21	N 60°43'17" E	7.31'
L22	N 84°53'45" E	36.68'
L23	N 80°07'41" E	105.43'
L24	N 80°07'41" E	17.92'
L25	N 82°17'24" E	69.87'
L26	N 80°05'56" E	36.49'
L27	N 80°05'56" E	23.08'
L28	N 84°50'55" E	84.10'
L29	N 78°45'02" E	101.73'
L30	N 79°11'22" E	110.33'
L31	N 80°49'03" E	103.14'
L32	N 60°24'43" E	39.48'
L33	N 68°30'29" E	72.16'
L34	N 82°23'01" E	30.81'
L35	N 71°41'44" E	60.99'
L36	N 50°50'12" E	15.52'
L37	N 82°20'54" E	11.20'
L38	N 29°18'57" E	13.18'
L39	N 63°36'02" E	10.62'
L40	N 27°21'18" E	15.75'
L41	N 86°54'31" E	96.70'
L42	S 86°11'55" E	88.86'
L43	N 83°44'16" E	110.37'
L44	S 84°49'16" E	80.09'
L45	S 81°20'36" E	78.91'
L46	S 83°32'21" E	25.80'
L47	S 78°44'38" E	54.81'
L48	S 83°24'59" E	67.45'
L49	S 63°43'24" E	13.51'
L50	S 81°14'27" W	39.83'
L51	N 07°04'57" W	11.35'

REFERENCES:

1. PLAT BY COVERT BOYD NELSON, DATED JANUARY 12, 2018, RECORDED IN PLAT BOOK M, PAGE 146, DORCHESTER COUNTY
2. PLAT BY PAUL C. LAWSON, DATED MARCH 15, 2010, RECORDED IN PLAT BOOK L, PAGE 157, DORCHESTER COUNTY
3. PLAT BY F. LEE HOWELL, DATED NOVEMBER 19, 2008, RECORDED IN PLAT BOOK L, PAGE 119, DORCHESTER COUNTY
4. PLAT BY MARK ELLIS LAMB, SR., DATED MAY 13, 2008, RECORDED IN PLAT BOOK L, PAGE 106, DORCHESTER COUNTY
5. PLAT BY THOMASL. WESTBURY, DATED DECEMBER 18, 2007, RECORDED IN PLAT BOOK L, PAGE 093, DORCHESTER COUNTY
6. PLAT BY PAUL C. LAWSON, DATED FEBRUARY 22, 2007, RECORDED IN PLAT BOOK L, PAGE 057, DORCHESTER COUNTY
7. PLAT BY MARK A. CORNELIUS, DATED MARCH 17, 2006, REVISED NOVEMBER 02, 2006 RECORDED IN PLAT BOOK L, PAGE 038, DORCHESTER COUNTY
8. PLAT BY W. MASON LINDSEY, JR., DATED JULY 10, 2006, RECORDED IN PLAT BOOK L, PAGE 057, DORCHESTER COUNTY
9. PLAT BY PAUL C. LAWSON, DATED JANUARY 29, 2002, RECORDED IN PLAT BOOK K, PAGE 018, DORCHESTER COUNTY
10. PLAT BY C. A. SIMMONS, RECORDED FEBRUARY 21, 2001, RECORDED IN PLAT BOOK J, PAGE 183, DORCHESTER COUNTY
11. PLAT BY PAUL C. LAWSON, DATED JANUARY 21, 2000, RECORDED IN PLAT BOOK J, PAGE 157, DORCHESTER COUNTY
12. PLAT BY JOHN DAVID BASS, DATED OCTOBER 25, 1999, RECORDED IN PLAT BOOK J, PAGE 162, DORCHESTER COUNTY
13. PLAT BY RICHARD J. RHODE, DATED FEBRUARY 8, 1999, RECORDED IN PLAT BOOK J, PAGE 128, DORCHESTER COUNTY
14. PLAT BY PAUL C. LAWSON, DATED DECEMBER 4, 1998, RECORDED IN PLAT BOOK J, PAGE 125 DORCHESTER COUNTY
15. PLAT BY JOHN DAVID BASS, DATED AUGUST 16, 1993, RECORDED IN PLAT BOOK I, PAGE 158, DORCHESTER COUNTY
16. PLAT BY ROBERT DAVID BRANTON, DATED AUGUST 06, 1992, RECORDED IN PLAT BOOK H, PAGE 379, DORCHESTER COUNTY
17. PLAT BY J. HUGH CAMPBELL, DATED APRIL 28, 1990, RECORDED IN PLAT BOOK G, PAGE 386, DORCHESTER COUNTY
18. PLAT BY RICHARD J. RHODE, DATED JANUARY 6, 1989, RECORDED IN PLAT BOOK G, PAGE 181, DORCHESTER COUNTY
19. PLAT BY W. MICHAEL LINES, DATED AUGUST 17, 1987, RECORDED IN PLAT BOOK F, PAGE 262, DORCHESTER COUNTY
20. PLAT BY HAGER E. METTS, DATED JANUARY 6, 1986, RECORDED IN PLAT BOOK F, PAGE 242, DORCHESTER COUNTY
21. PLAT BY T. R. DION, DATED MAY 29, 1984, RECORDED IN PLAT BOOK E, PAGE 046, DORCHESTER COUNTY
22. PLAT BY ALBERT HEATLEY, JR., DATED JANUARY, 1974, RECORDED IN PLAT BOOK 21, PAGE 147, DORCHESTER COUNTY
23. PLAT BY H. EXO HILTON, DATED JANUARY 1973, RECORDED IN PLAT BOOK 20, PAGE 086, DORCHESTER COUNTY
24. PLAT BY W. H. MATHENY, DATED SEPTEMBER 14, 1962, RECORDED IN PLAT BOOK 14, PAGE 035, DORCHESTER COUNTY
25. PLAT BY W. H. MATHENY, RECORDED MAY 9, 1962, RECORDED IN PLAT BOOK 14, PAGE 017, DORCHESTER COUNTY
26. PLAT BY R. B. CUTHBERT, DATED APRIL 8, 1961, RECORDED IN PLAT BOOK 13, PAGE 097, DORCHESTER COUNTY
27. PLAT BY HUGH HAMILTON, DATED JULY 4, 1945, RECORDED IN PLAT BOOK 20, PAGE 268, DORCHESTER COUNTY
28. PLAT BY HUGH HAMILTON, DATED NOVEMBER 3, 1943, RECORDED IN PLAT BOOK 6, PAGE 185, DORCHESTER COUNTY
29. PLAT BY HUGH HAMILTON, DATED OCTOBER 4, 1941, RECORDED IN PLAT BOOK 10, PAGE 004, DORCHESTER COUNTY

DATE	REVISION	BY
3/19/20	UPDATED ADD. AREAS & UTILITIES	JFB
6/10/19	UPDATED ADD. AREAS & UTILITIES	JFB
4/11/19	UPDATED PER ADD. AREAS	JAB
2/8/19	UPDATED WITH MISSED TREES	JFB

GPA PROFESSIONAL LAND SURVEYORS EST. 1987

GPA, INC.
SERVING SOUTH CAROLINA AND NORTH CAROLINA

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LADSON SC 29456
OFFICE (843) 285-2424

CHARLOTTE AREA
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FT. MILL SC
(803) 802-9835

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SCALE 1"=200'

FLD. BK. PG.

JOB NO. 185187

DATE 11/15/2018

DRAWN BY JAP

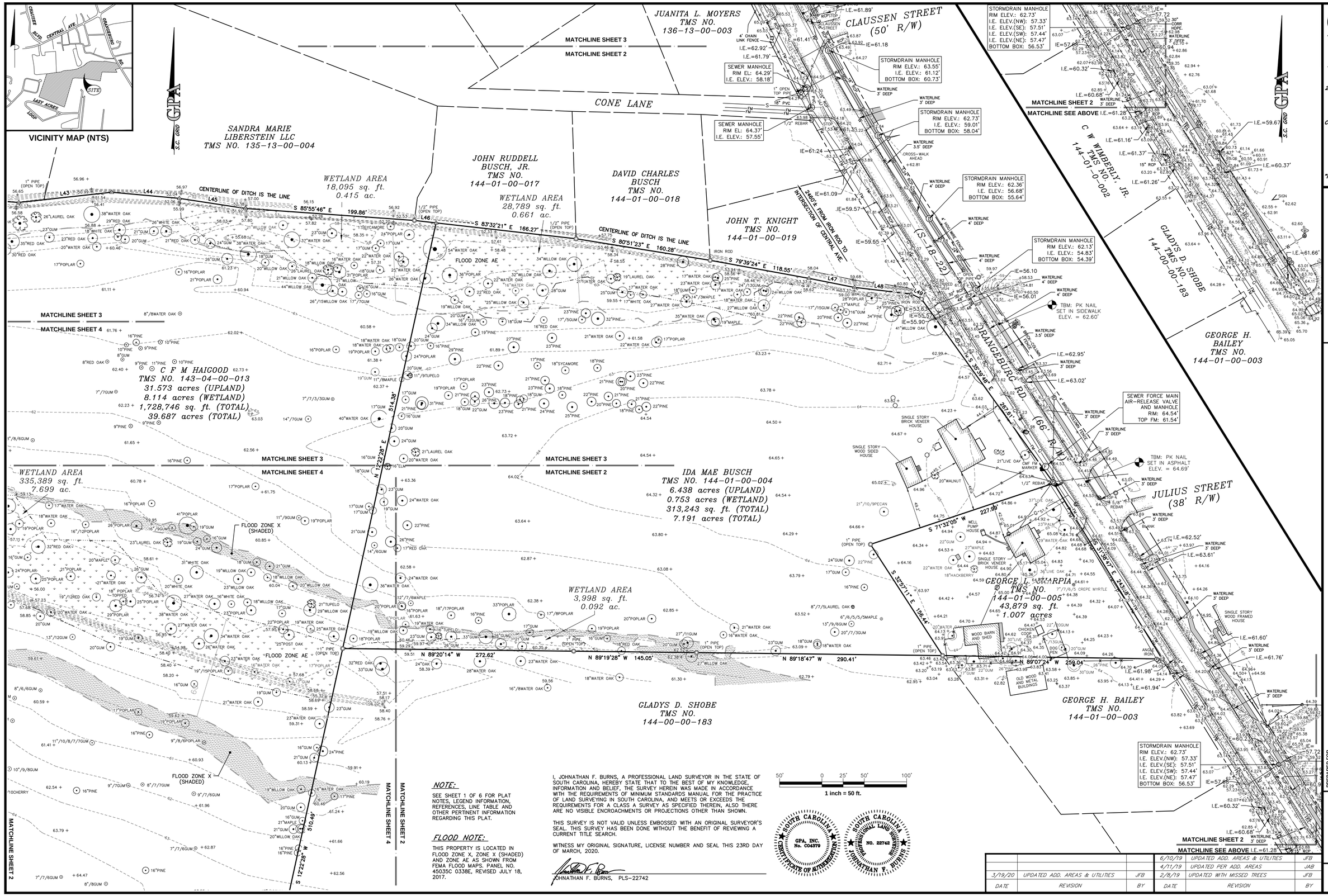
CHECKED BY DLG

PREPARED FOR
LEVI GRANTHAM, LLC

SHOWING 7 TRACTS - TMS NO. 144-01-00-004 (7.191 ACRES), TMS NO. 143-04-00-013 (39.687 ACRES), TMS NO. 143-04-00-012 (4.851 ACRES), TMS NO. 143-04-00-018 (4.855 ACRES), TMS NO. 143-04-00-019 (4.855 ACRES), TMS NO. 143-04-00-020 (4.864 ACRES), TMS NO. 143-04-00-021 (9.689 ACRES) & TMS NO. 144-01-00-005 (1.007 ACRES)
LOCATED IN THE TOWN OF SUMMERVILLE, DORCHESTER COUNTY, SOUTH CAROLINA

BOUNDARY TOPOGRAPHIC TREE SURVEY

SHEET 1 OF 6



NOTE:

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FLOOD NOTE:

THIS PROPERTY IS LOCATED IN FLOOD ZONE X, ZONE X (SHADED) AND ZONE AE AS SHOWN FROM FEMA FLOOD MAPS. PANEL NO. 45035C 0338E, REVISED JULY 18, 2017.

I, JOHNATHAN F. BURNS, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF SOUTH CAROLINA, HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS A SURVEY AS SPECIFIED THEREIN, ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

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WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 23RD DAY OF MARCH, 2020.

JOHNATHAN F. BURNS, PLS-22742

50' 0 25' 50' 100'

1 inch = 50 ft.

SOUTH CAROLINA GPA, INC. No. C04979 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR NO. 22742 JOHNATHAN F. BURNS

DATE	REVISION	BY
3/19/20	UPDATED ADD. AREAS & UTILITIES	JFB

DATE	REVISION	BY
6/10/19	UPDATED ADD. AREAS & UTILITIES	JFB
4/11/19	UPDATED PER ADD. AREAS	JAB
2/8/19	UPDATED WITH MISSED TREES	JFB

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SCALE 1"=50'

FLD. BK. PG.

JOB NO. 185187

DATE 11/15/2018

DRAWN BY JAP

CHECKED BY DLG

BOUNDARY TOPOGRAPHIC TREE SURVEY

SHOWING 7 TRACTS - TMS NO. 144-01-00-004 (7.191 ACRES), TMS NO. 143-04-00-013 (39.687 ACRES), TMS NO. 143-04-00-012 (4.851 ACRES), TMS NO. 143-04-00-018 (4.855 ACRES), TMS NO. 143-04-00-019 (4.855 ACRES), TMS NO. 143-04-00-020 (4.864 ACRES), TMS NO. 143-04-00-021 (9.689 ACRES) & TMS NO. 144-01-00-005 (1.007 ACRES)
LOCATED IN THE TOWN OF SUMMERVILLE, DORCHESTER COUNTY, SOUTH CAROLINA

PREPARED FOR
LEVI GRANTHAM, LLC

SHEET 2 OF 6

VICINITY MAP (NTS)

50' 0 25' 50' 100'

1 inch = 50 ft.

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WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 23RD DAY OF MARCH, 2020.

JOHNATHAN F. BURNS, PLS–22742

SOUTH CAROLINA — GPA, INC. No. C04379 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL LAND SURVEYOR — No. 22742 — JOHNATHAN F. BURNS

DATE	REVISION	BY
3/19/20	UPDATED ADD. AREAS & UTILITIES	JFB
6/10/19	UPDATED ADD. AREAS & UTILITIES	JFB
4/11/19	UPDATED PER ADD. AREAS	JAB
2/8/19	UPDATED WITH MISSED TREES	JFB

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NOTE:

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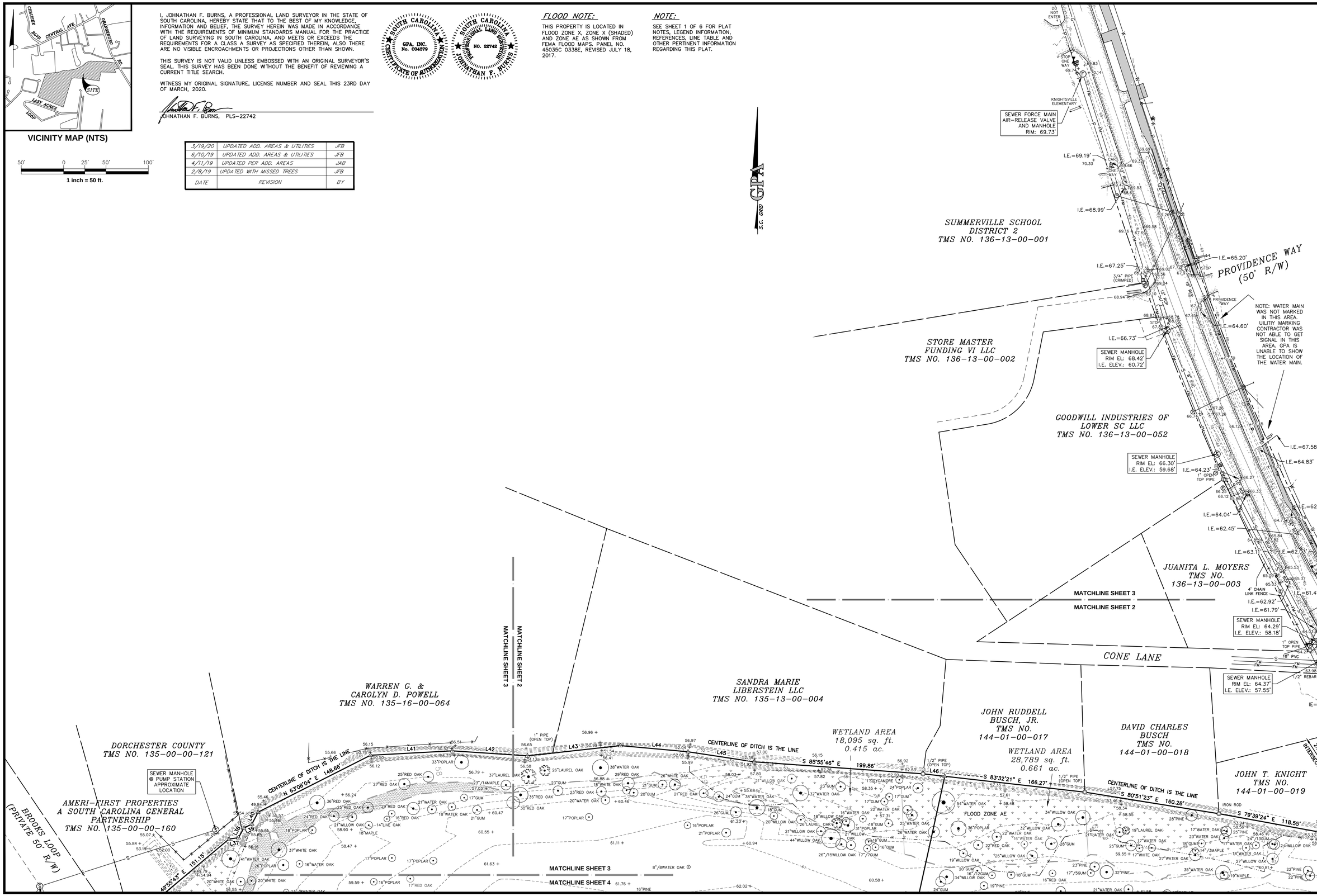
S.C. GRID



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SCALE	1"=50'
FLD. BK.	PG.
JOB NO.	185187
DATE	11/15/2018
DRAWN BY	JAP
CHECKED BY	DLG

PREPARED FOR
LEVI GRANTHAM, LLC

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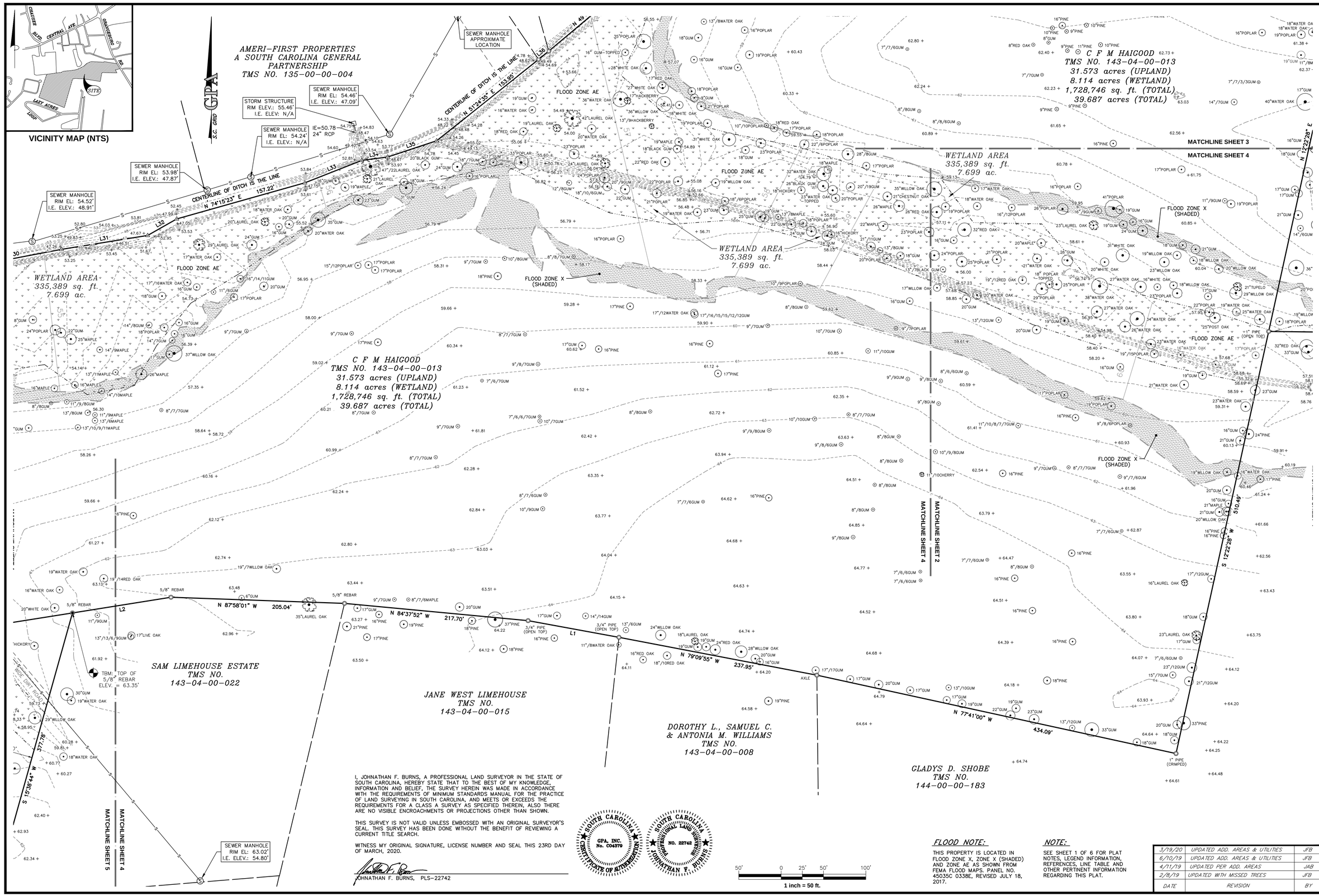
BOUNDARY TOPOGRAPHIC TREE SURVEY



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WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 23RD DAY OF MARCH, 2020.

JOHNATHAN F. BURNS, PLS-22742

SOUTH CAROLINA PROFESSIONAL LAND SURVEYING BUSINESS — GPA, INC. No. C04379 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR — NO. 22742 — JOHNATHAN F. BURNS

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GPA
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JOB NO. 185187

DATE 11/15/2018

DRAWN BY JAP

CHECKED BY DLG

PREPARED FOR
LEVI GRANTHAM, LLC

BOUNDARY TOPOGRAPHIC TREE SURVEY

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LOCATED IN THE TOWN OF SUMMERVILLE, DORCHESTER COUNTY, SOUTH CAROLINA

SHEET 4 OF 6

VICINITY MAP (NTS)

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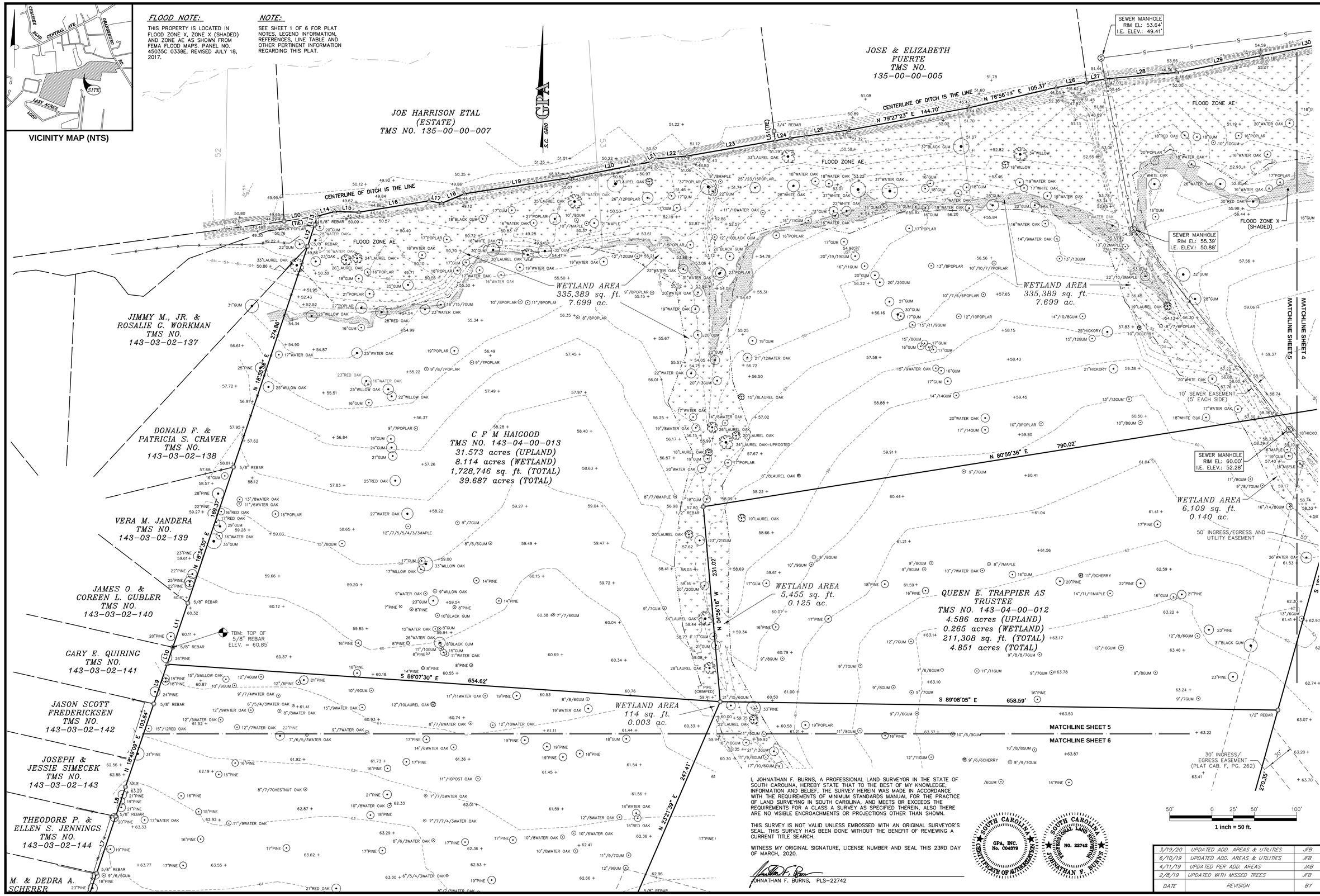

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JOHNATHAN F. BURNS, PLS-22742

SOUTH CAROLINA GPA, INC. No. C04370 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR NO. 22742 JOHNATHAN F. BURNS

DATE	REVISION	BY
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JOB NO. 185187

DATE 11/14/2016

DRAWN BY JAP

CHECKED BY DLG

PREPARED FOR LEVI GRANTHAM, LLC

BOUNDARY TOPOGRAPHIC TREE SURVEY

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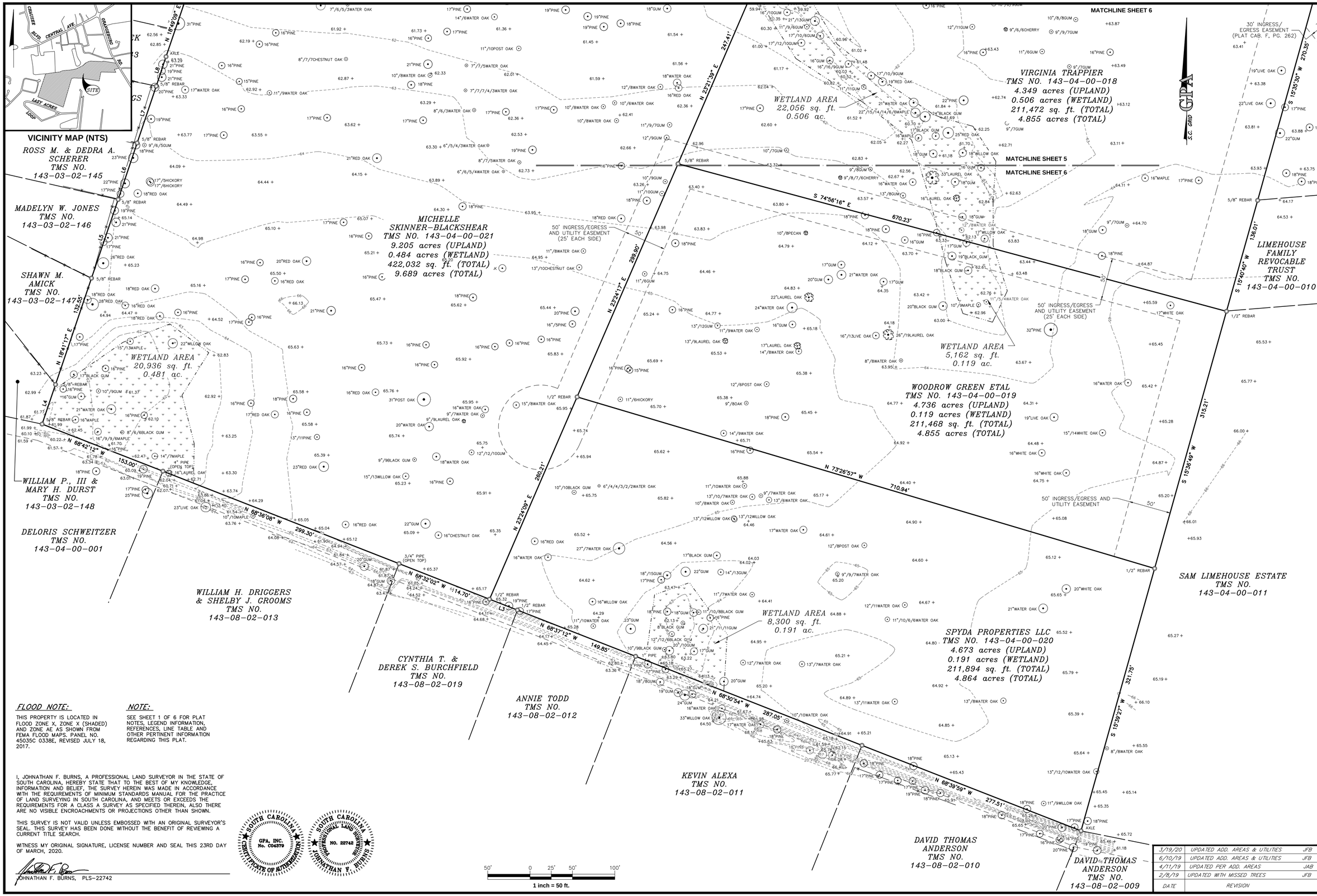
LOCATED IN THE TOWN OF SUMMERVILLE, DORCHESTER COUNTY, SOUTH CAROLINA

SHEET 5 OF 6



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JOHNATHAN F. BURNS, PLS-22742

SOUTH CAROLINA GPA, INC. No. C04379 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR NO. 22742 JOHNATHAN F. BURNS

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SCALE 1"=50

FLD. BK. PG.

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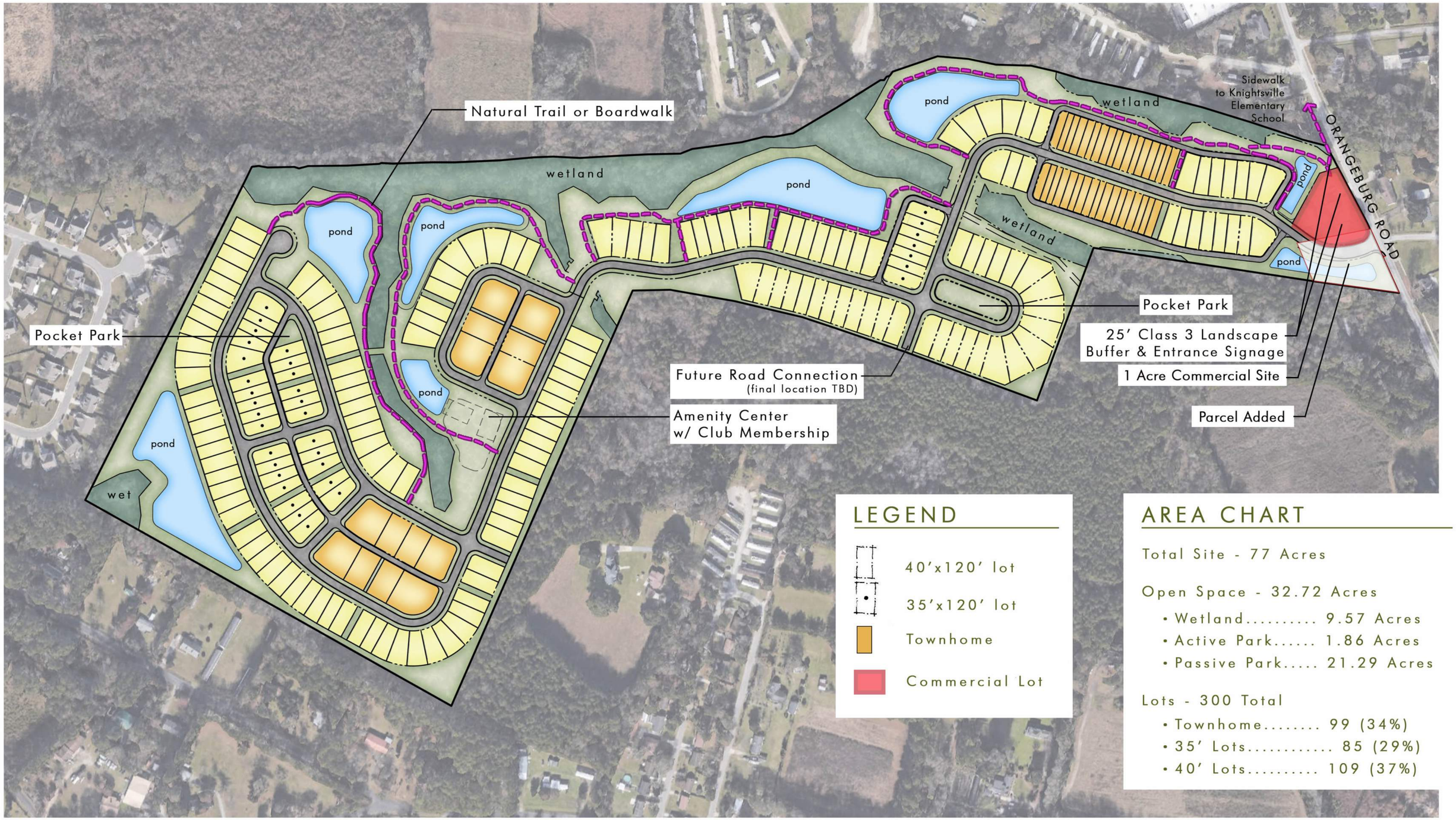
BOUNDARY TOPOGRAPHIC TREE SURVEY

SHEET 6 OF 6



Note:
This plan is conceptual and based upon incomplete survey information.
It is subject to change upon receipt of full survey, final programming, final engineering and review and approval of governmental regulating bodies.

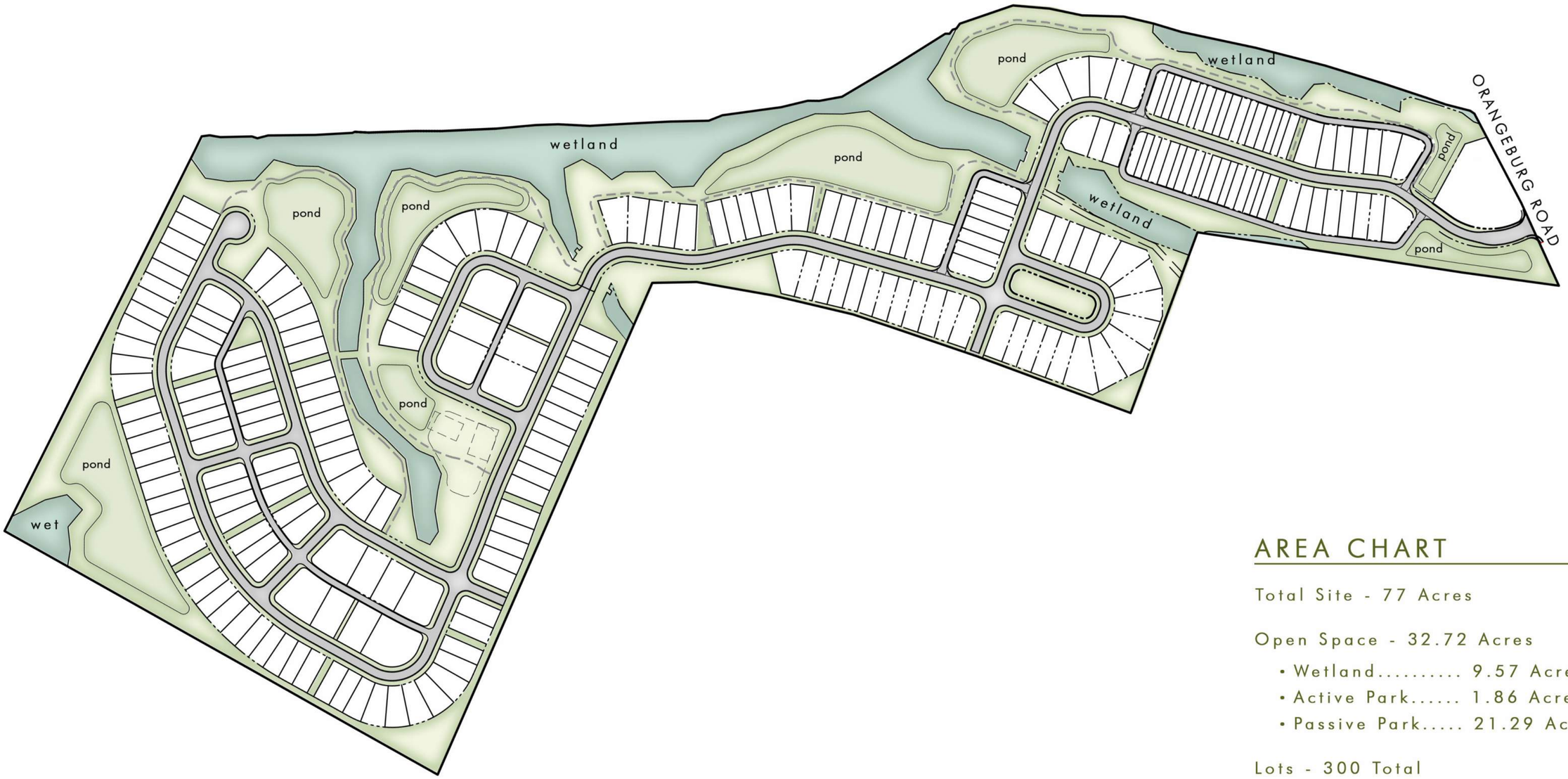
0' 200' 400' 600'

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

SEAMONWHITESIDE

CONCEPTUAL DEVELOPMENT PLAN

DORCHESTER COUNTY, SOUTH CAROLINA
7996
04.22.2020



AREA CHART

Total Site - 77 Acres

Open Space - 32.72 Acres

- Wetland..... 9.57 Acres
- Active Park..... 1.86 Acres
- Passive Park..... 21.29 Acres

Lots - 300 Total

- Townhome..... 99 (34%)
- 35' Lots..... 85 (29%)
- 40' Lots..... 109 (37%)

Note:
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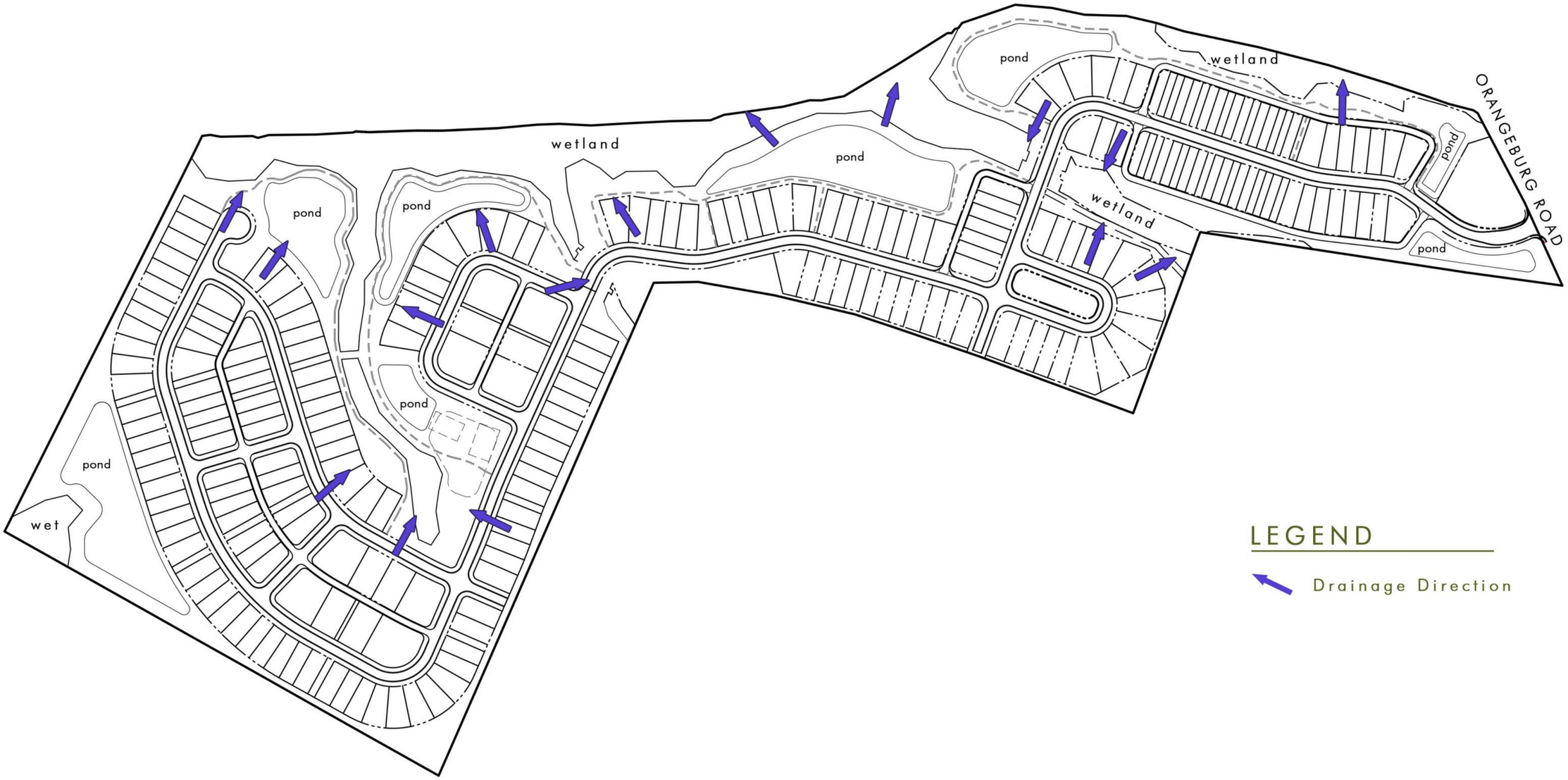
0' 200' 400' 600'

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

SEAMONWHITESIDE

CONCEPTUAL OPEN SPACE PLAN

DORCHESTER COUNTY, SOUTH CAROLINA
7996
04.22.2020



LEGEND

Drainage Direction

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SEAMONWHITESIDE

CONCEPTUAL DRAINAGE PLAN

DORCHESTER COUNTY, SOUTH CAROLINA
7996
04.22.2020

Dorchester County Water Authority

P. O. Box 250 P. O. Box 1565 Summerville, SC 29484
(843) 875-0140 Fax (843) 851-6790

ADMINISTRATOR
ROBERT C. HENSLEY

BOARD MEMBERS
LINDA B. EVANS-CHAIR
PAT LADOLCETTA-VICE CHAIR
JOHN WHEELER-SECRETARY/TREASURER
BRAD RAWLINGS-MEMBER
ROBBY ROBBINS-MEMBER

September 19, 2017

Chris P Campeau
Seamon & Whiteside
128 S Main Street
Suite B
Summerville, SC 29483

Reference: Knightsville Tract
Note Only if a looped connection between Orangeburg Rd & Central Ave.

Dear Mr. Campeau,

Dorchester County Water Authority is the authorized supplier of water, for the above reference, and is in conformance with its water supply service area. We are willing, and have the quantity of water to provide to this development. Dorchester County Water Authority's commitment for the availability of water will expire one year from the date of this letter.

Sincerely,

Richie Murdaugh, Operations Manager

RM/fb

DORCHESTER COUNTY WATER AND SEWER
235 DEMING WAY
SUMMERVILLE, SC 29483

Jason D. Coffman, P.E. – Engineering Manager
(843) 832-0093 * (843) 563-0093 * Fax (843) 832-0073 * (843) 563-0073

September 25, 2017

Chris Campeau
128 S. Main St.
Summerville, SC 29483

RE: Knightsville Subdivision
TMS 143-04-00-013 and surrounding properties.

Dear Mr. Campeau:

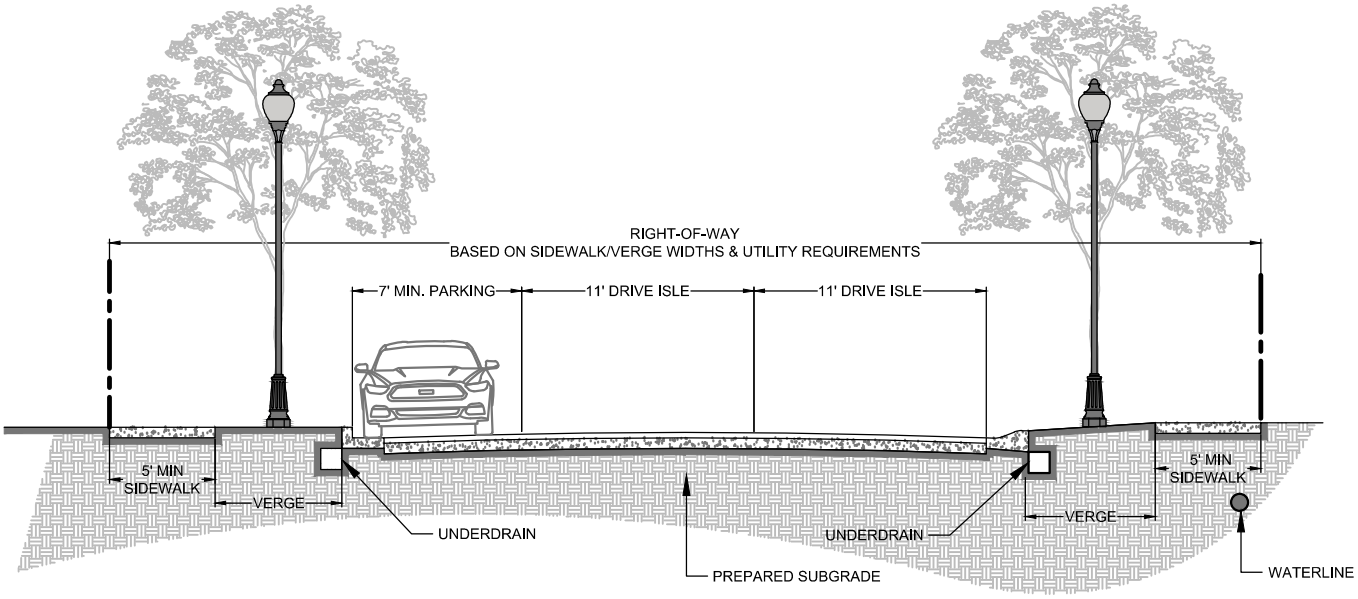
The referenced properties are in Dorchester County's sewer service area. At this time, there is a gravity sewer main on TMS 143-04-00-013 leading to our Pump Station 3. An upgrade of this pump station is expect to be complete in 18-36 months and will be designed to accommodate long term future flows including this project. After factoring in Dorchester County's current commitments and projects in design and permitting, we estimate the system in this area can accommodate an additional 300 homes. Please note capacity is available on a first come first served basis upon payment of impact fees. Also, service with Dorchester county for projects exceeding 10 ERUs require approval by County Council. Do not hesitate to call me at (843) 832-0093 if you have any questions or need additional information.

Sincerely,

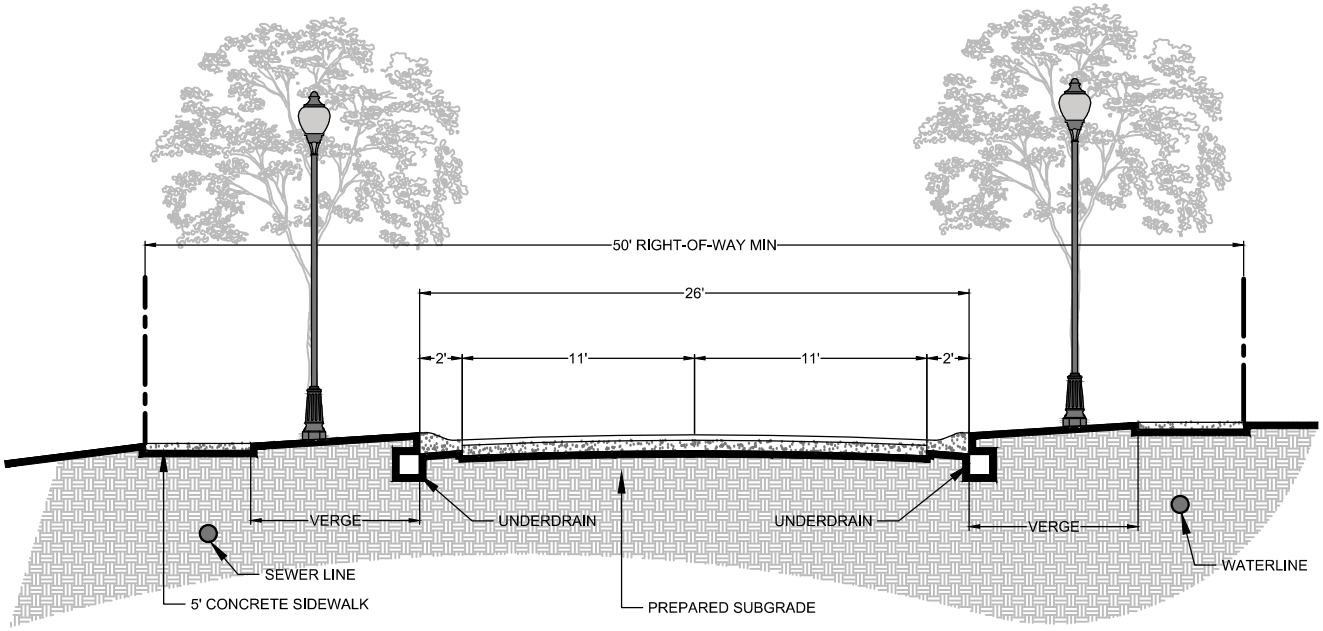
Jason D. Coffman

Jason D. Coffman, P.E.
Engineering Manager

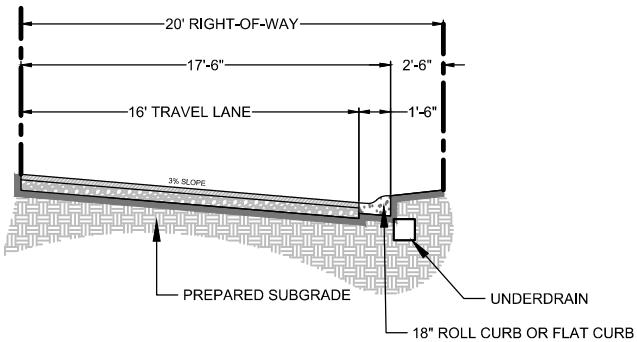
cc: Larry Harper – DCWS
Steven Ricker - DCWS



24' STREET PARKING ON ONE SIDE (TWO-WAY)



24' STREET NO PARKING (TWO-WAY)



16' ALLEY STREET

TREE NOTES:

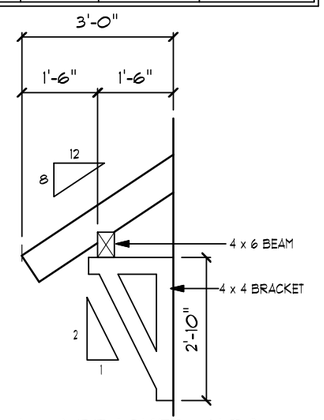
1 - CANOPY TREES MUST BE LOCATED A MINIMUM OF 5' FROM BACK OF CURB.
2 - THERE MUST BE A 5' SEPARATION FROM TREES AND ANY WATER/SEWER UTILITY LINES THAT ARE SHALLOWER THAN 5' DEEP.
3 - THERE MUST BE A MINIMUM SEPARATION OF 15' BETWEEN STREET LIGHTS AND STREET TREES.

SEAMONWHITESIDE

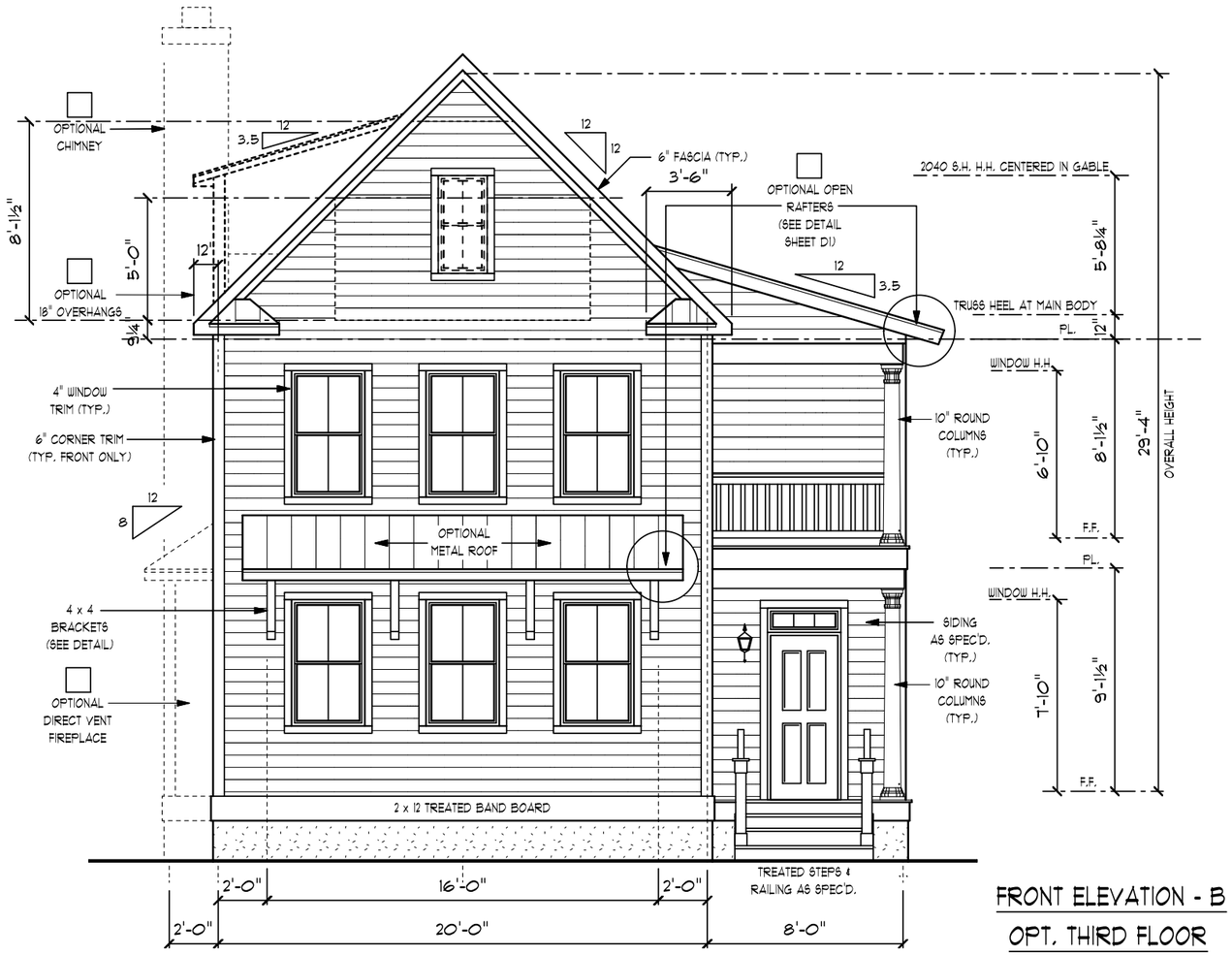
CRESCENT homes

ELEVATION-B	HEATED	UNHEATED	TOTAL AREA
FIRST FLOOR	1096 sf		
SECOND FLOOR	1113 sf		
FRONT PORCH		112 sf	
REAR PORCH		112 sf	
UPPER BALCONY-1		112 sf	
TOTAL AREA	**2209 sf**	**336 sf**	**2545 sf**

OPTIONS	HEATED	UNHEATED	TOTAL AREA
SCREENED PORCH		140 sf	
SUNROOM	140 sf		
THIRD FLOOR	250 sf		
THIRD FLOOR w/BATH	+90 sf		



4 x 4 BRACKET N.T.S.



FRONT ELEVATION - B
OPT. THIRD FLOOR

"MAGNOLIA"

ELEVATION B

PLAN HISTORY:

1/5/15 Create plan
2/16/15 Added shed roof for opt. third floor
4/1/15 Plan review
2/12/16 Added opt. attached garage

DRAWING INDEX

A1 TITLE PAGE & FRONT ELEVATION
A2 LEFT & RIGHT ELEVATIONS
A3 REAR ELEVATIONS & ROOF PLANS
A4 FIRST FLOOR PLAN
A5 SECOND FLOOR PLAN
A6 THIRD FLOOR PLAN
A7 OPT. ATTACHED GARAGE w/SCREEN PORCH
A8 OPT. ATTACHED GARAGE
E1 ELECTRICAL FIRST FLOOR
E2 ELECTRICAL SECOND FLOOR
E3 ELECTRICAL THIRD FLOOR
P1 PLUMBING FIRST & THIRD FLOOR
P2 PLUMBING SECOND FLOOR

FIELD NOTES

CRESCENT homes
572 Savannah Highway
Charleston, South Carolina
Fax (843) 402-0135
Phone (843) 573-9635

CUSTOM DESIGN for the
"Magnolia"
Cottage Series

LOT # _____
ADDRESS _____

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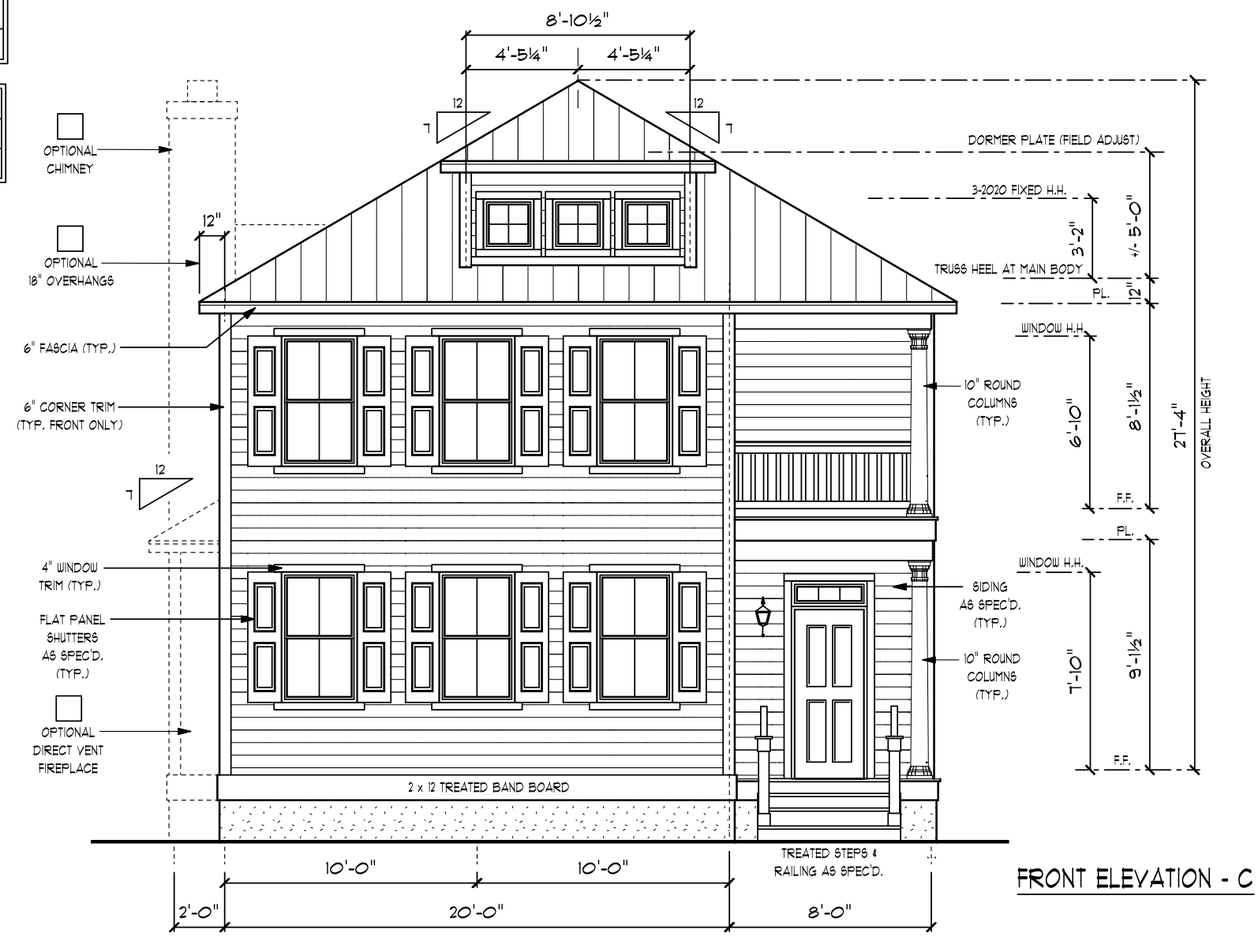
A1
ELEV.-B

ELEVATION-C	HEATED	UNHEATED	TOTAL AREA
FIRST FLOOR	1096 sf		
SECOND FLOOR	1113 sf		
FRONT PORCH		112 sf	
REAR PORCH		112 sf	
UPPER BALCONY-1		112 sf	
TOTAL AREA	**2209 sf**	**336 sf**	**2545 sf**

OPTIONS	HEATED	UNHEATED	TOTAL AREA
SCREENED PORCH		140 sf	
SUNROOM	140 sf		



FRONT ELEVATION - C

"MAGNOLIA"

ELEVATION C

PLAN HISTORY:

1/5/15 Create plan
2/16/15 Added shed roof for opt. third floor
4/1/15 Plan review
2/12/16 Added opt. attached garage

DRAWING INDEX

A1 TITLE PAGE & FRONT ELEVATION
A2 LEFT & RIGHT ELEVATIONS
A3 REAR ELEVATIONS & ROOF PLANS
A4 FIRST FLOOR PLAN
A5 SECOND FLOOR PLAN
A6 THIRD FLOOR PLAN
A7 OPT. ATTACHED GARAGE w/SCREEN PORCH
A8 OPT. ATTACHED GARAGE
E1 ELECTRICAL FIRST FLOOR
E2 ELECTRICAL SECOND FLOOR
E3 ELECTRICAL THIRD FLOOR
P1 PLUMBING FIRST & THIRD FLOOR
P2 PLUMBING SECOND FLOOR

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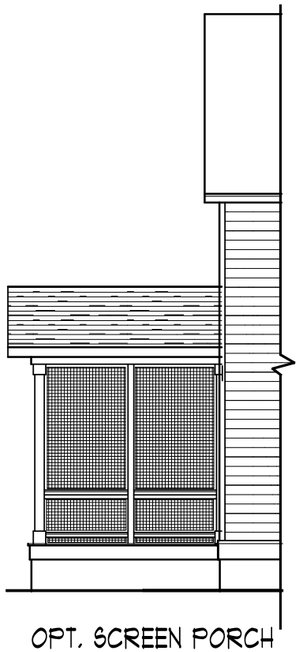
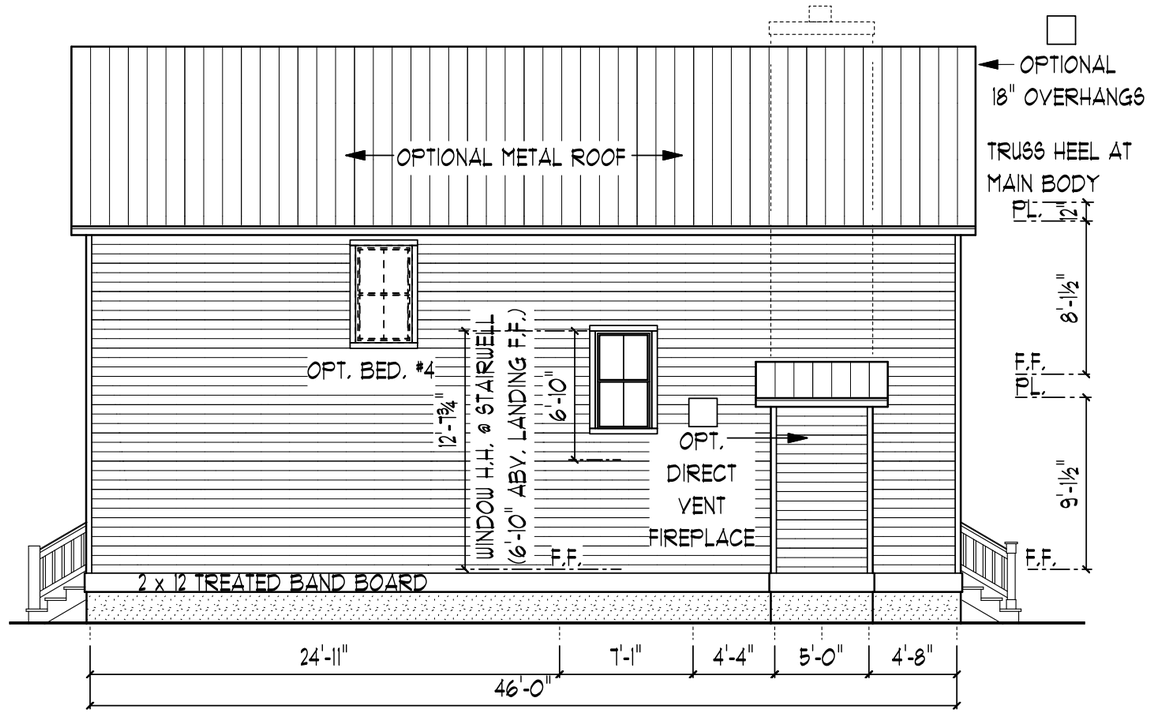
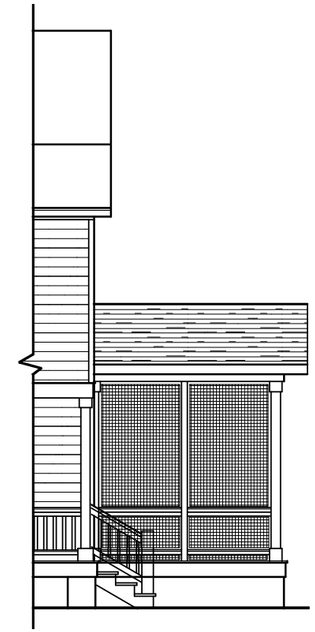
A1
ELEV.-C



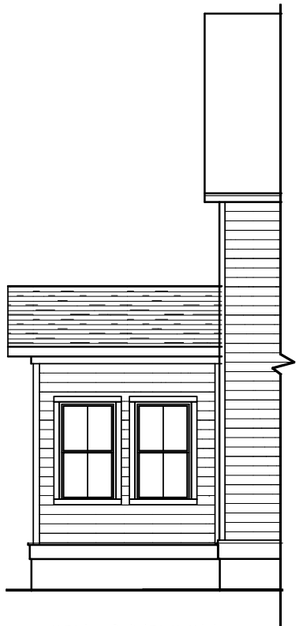
OPT. SCREEN PORCH
LEFT SIDE ELEVATION



LEFT SIDE ELEVATION - A

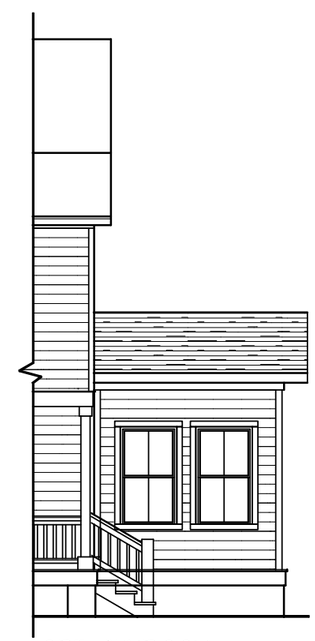


OPT. SCREEN PORCH
RIGHT SIDE ELEVATION



OPT. SUNROOM
LEFT SIDE ELEVATION

RIGHT SIDE ELEVATION - A



OPT. SUNROOM
RIGHT SIDE ELEVATION

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CUSTOM DESIGN
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ELEVATIONS-A / DOOR RIGHT

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PLAN NAME: MAGNOLIA

REVISIONS:

DRAWN BY: CLE

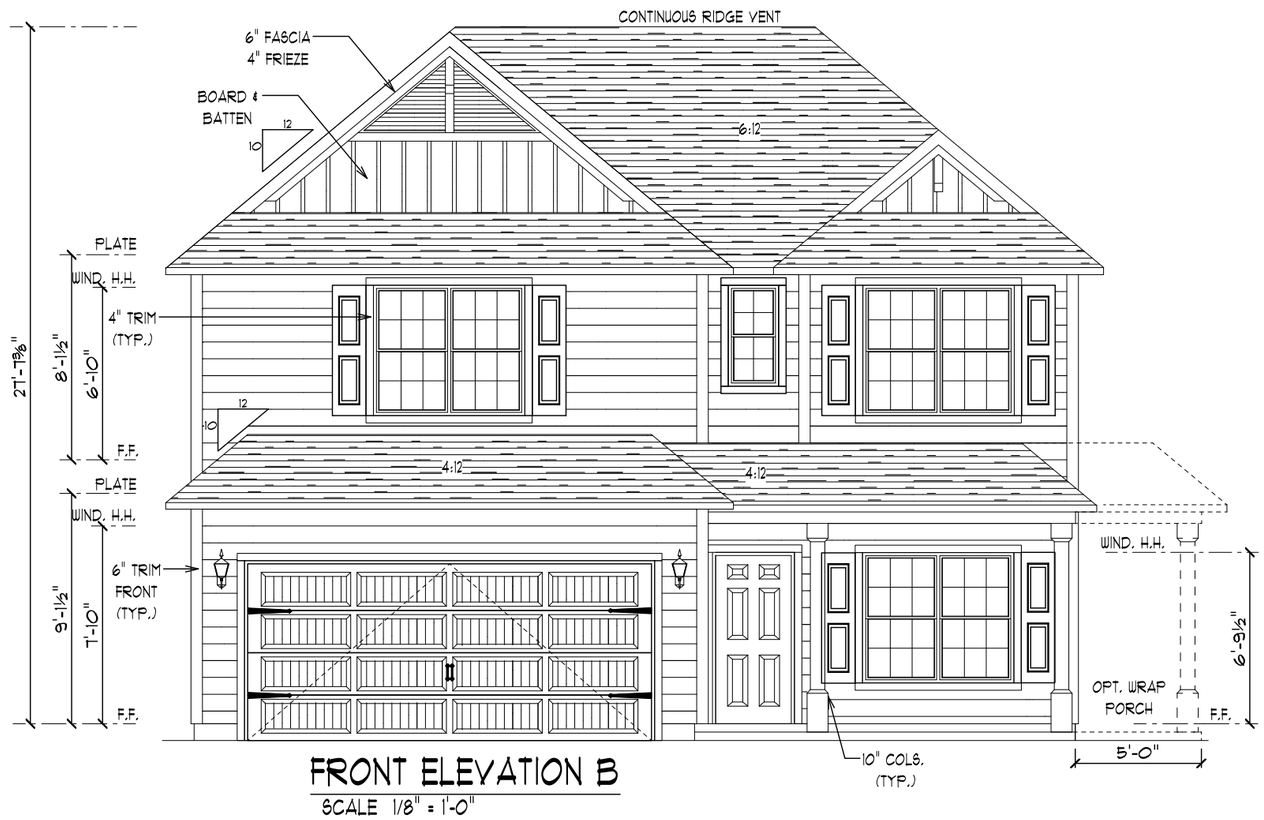
DATE: 1/5/15

JOB NO.:

TITLE: SIDE ELEVATIONS

SHEET: **A2**
ELEV.-A

CRESCENT homes



FRONT ELEVATION B

SCALE 1/8" = 1'-0"

NAME	HEATED	UNHEATED
FIRST FLOOR	1560 sq ft.	
SECOND FLOOR	1216 sq ft.	
TOTAL HEATED	2776 sq. ft.	
GARAGE		417 sq. ft.
FRONT PORCH		68 sq. ft.
OPT. WRAP PORCH		+86 sq. ft.
OPT. SCREEN PORCH		+140 sq. ft.
OPT. SUNROOM	+140 sq. ft.	

"WINCHESTER"

ELEVATION B

PLAN HISTORY:

2/1/16 Create plan
3/15/16 Markups
4/1/16 Plan Review

DRAWING INDEX

A1 TITLE PAGE & FRONT ELEVATION
A2 LEFT & RIGHT ELEVATIONS
A3 REAR ELEVATIONS & ROOF PLANS
A4 FIRST FLOOR PLAN
A5 SECOND FLOOR PLAN
A6 SECTIONS/DETAILS
E1 ELECTRICAL FIRST FLOOR
E2 ELECTRICAL SECOND FLOOR
P1 PLUMBING PLAN

FIELD NOTES

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Charleston, South Carolina
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CUSTOM DESIGN
for the
"Winchester"
Heritage Series

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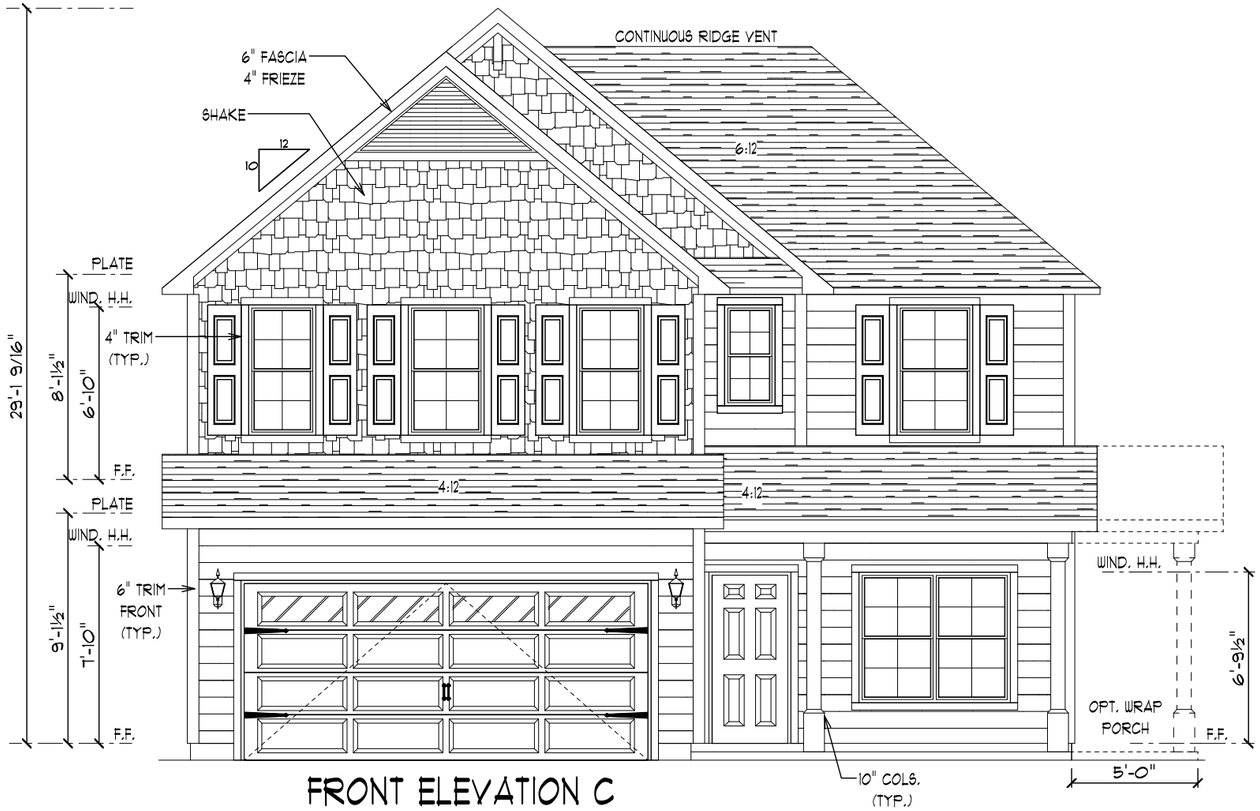
A1
ELEV.-B

RESCENT homes



FRONT ELEVATION C

SCALE 1/8" = 1'-0"

NAME	HEATED	UNHEATED
FIRST FLOOR	1560 sq ft.	
SECOND FLOOR	1194 sq ft.	
TOTAL HEATED	2754 sq. ft.	
GARAGE		417 sq. ft.
FRONT PORCH		68 sq. ft.
OPT. WRAP PORCH		+86 sq. ft.
OPT. SCREEN PORCH		+140 sq. ft.
OPT. SUNROOM	+140 sq. ft.	

"WINCHESTER"

ELEVATION C

PLAN HISTORY:

2/1/16 Create plan
3/15/16 Markups
4/1/16 Plan Review

DRAWING INDEX

A1 TITLE PAGE & FRONT ELEVATION
A2 LEFT & RIGHT ELEVATIONS
A3 REAR ELEVATIONS & ROOF PLANS
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A5 SECOND FLOOR PLAN
A6 SECTIONS/DETAILS
E1 ELECTRICAL FIRST FLOOR
E2 ELECTRICAL SECOND FLOOR
P1 PLUMBING PLAN

FIELD NOTES

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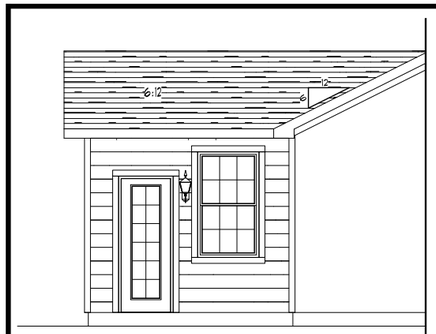
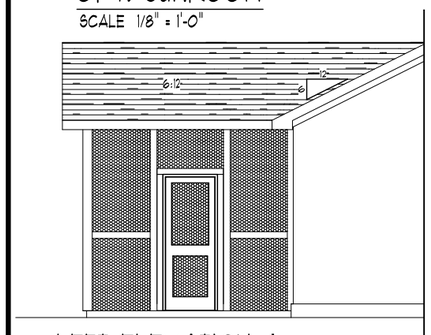
A1
ELEV.-C



LEFT ELEVATION A

OPT. SUNROOM

SCALE 1/8" = 1'-0"



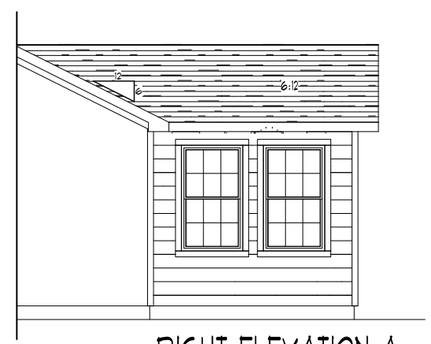
LEFT ELEVATION A

OPT. SCREEN PORCH

SCALE 1/8" = 1'-0"

LEFT ELEVATION A

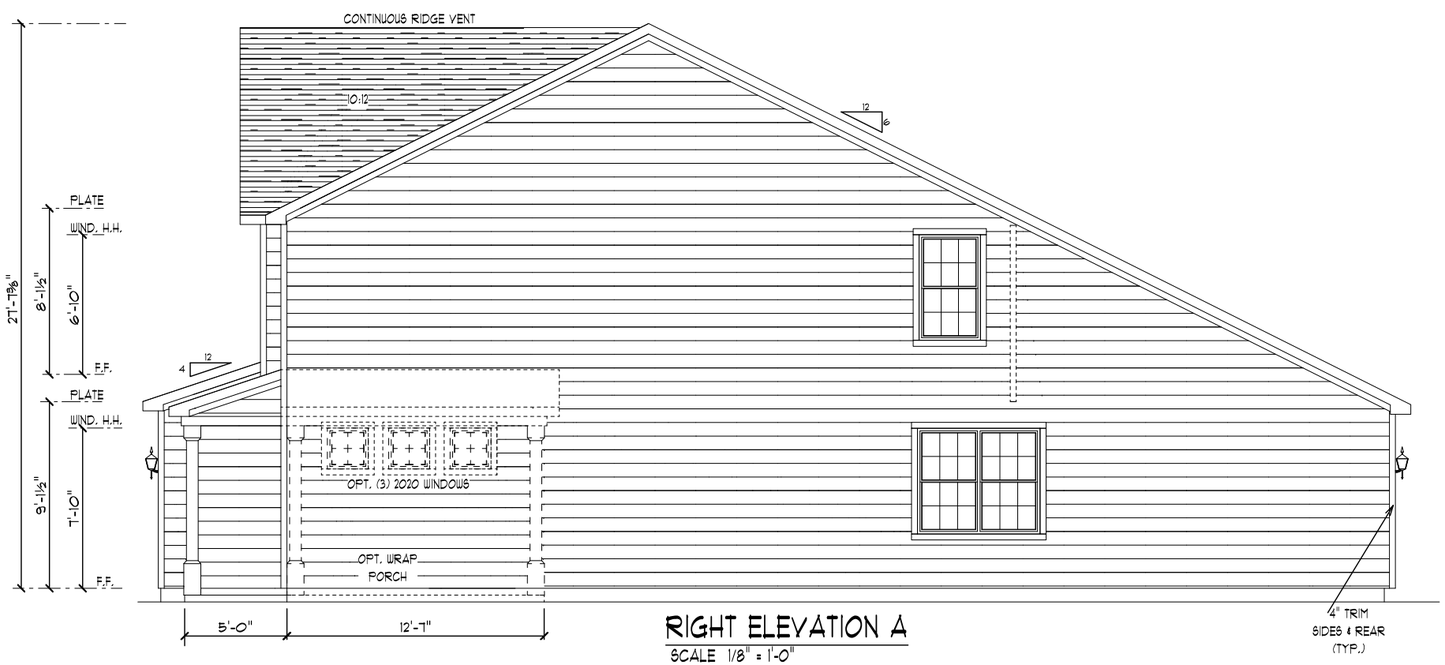
SCALE 1/8" = 1'-0"



RIGHT ELEVATION A

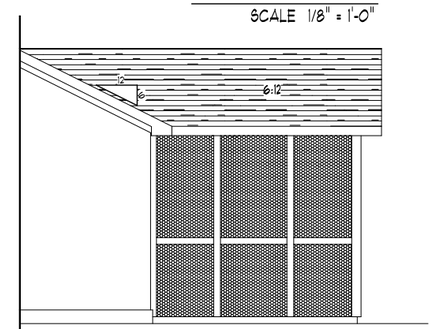
OPT. SUNROOM

SCALE 1/8" = 1'-0"



RIGHT ELEVATION A

SCALE 1/8" = 1'-0"



RIGHT ELEVATION A

OPT. SCREEN PORCH

SCALE 1/8" = 1'-0"

RESCENT homes

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Charleston, South Carolina

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CUSTOM DESIGN
for the

"Winchester"

ELEVATIONS-A / GARAGE LEFT

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PLAN NAME: WINCHESTER

REVISIONS:

DRAWN BY: CLE

DATE: 2/1/16

JOB NO.:

TITLE: SIDE ELEVATIONS

SHEET: **A2**

ELEV.-A

Traffic Impact Analysis

Knightsville Residential Development
Knightsville, SC

Prepared for:
Levi Grantham, LLC

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BIHL

ENGINEERING

Traffic Impact Analysis
Knightsville Residential Development
Knightsville, SC

Prepared for:
Levi Grantham, LLC

Prepared by:
Bihl Engineering, LLC
304 Meeting Street, Suite D
Charleston, SC 29401
Mail:
P.O. Box 31318
Charleston, SC 29417
(843) 637-9187

SOUTH CAROLINA
BIHL ENGINEERING LLC.
No. 4620
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 25271
8/27/19
JENNIFER TROPEA BIHL

December 2017
Updated March 2018
Updated August 2019

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1.0 Executive Summary

This report updates the December 4, 2017 traffic study for the Knightsville Residential Development from 273 units to 300 total single-family and multi-family units. The report also updates the March 20, 2018 traffic study for the Knightsville Residential Development to revise the recommendations for the intersection of Orangeburg Road at Central Avenue per discussion of overall intersection improvements with South Carolina Department of Transportation (SCDOT).

The Knightsville Residential Development is planned to be located on Orangeburg Road in Knightsville, SC. The proposed development will consist of 195 single-family homes and 105 low-rise townhomes. The development is planned to be accessed by a full access driveway on Orangeburg Road. This driveway location has been coordinated with SCDOT staff. For the purposes of this Traffic Impact Analysis (TIA), the development is assumed complete by 2021.

This report presents the trip generation, distribution, traffic analyses, and any recommendations for transportation improvements required to meet anticipated traffic demands.

The intersection of Orangeburg Road at Central Avenue currently operates at level of service (LOS) D during the AM and PM peak hours. Based on the projected traffic growth, the intersection is projected to experience elevated delay during the AM and PM peak hours for the 2021 No Build and 2021 Build conditions with signal optimization. Based on the results of the study, the addition of a northbound right-turn lane and optimization of the traffic signal operations, including the addition of a right-turn overlap phase, is recommended to be installed as part of the Build with Improvements conditions. With these improvements, the intersection is projected to improve and operate at LOS D and LOS E during the AM and PM peak hour conditions, respectively. Intersection laneage improvements, traffic signal improvements, and integration with existing driveways will need to be coordinated with SCDOT.

The study area intersections of Orangeburg Road at Julius Street and Orangeburg Road at Cone Lane/Claussen Street operate at LOS E or better in the existing conditions.

As part of the project improvements around the Site Driveway an exclusive 100-foot left-turn lane will be installed opening into a two-way left-turn lane (TWLTL) extending past Julius Street, as coordinated in concept with SCDOT. Detailed design will need to be approved by SCDOT.

With these improvements the intersections of Orangeburg Road at Julius Street and Orangeburg Road at Cone Lane/Claussen Street will operate at the existing conditions level of service or better.

The intersection of Orangeburg Road at the Site Driveway is projected to experience elevated delay during the AM and PM peak hours in the 2021 Build with Improvements conditions. Improvements to the driveway include exclusive eastbound left- and right-turn lanes exiting the site, the northbound left-turn lane and TWLTL on Orangeburg Road at the Site Driveway, and a southbound right-turn lane on Orangeburg Road.

It is typical for stop-controlled side streets and driveways on major streets to experience longer delays during peak hours while most of the traffic moving through the corridor experiences little or not delay. Maximum queues for the eastbound left-turning traffic were calculated to be approximately six vehicles or fewer during the peak hours.

Based on the projected future conditions and discussion with SCDOT staff, the following transportation improvements are recommended as a part of this project:

- Installation of exclusive northbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at Central Avenue – details to be coordinated with SCDOT
- Update traffic signal timings at the intersection of Orangeburg Road at Central Avenue including the installation of a right-turn overlap operation and associated signal hardware
- Installation of an exclusive 100-foot northbound left-turn lane opening to a TWLTL, and an exclusive southbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at the Site Driveway per previous discussion with SCDOT
- Installation of exclusive eastbound left- and right-turn lanes exiting the Site Driveway at Orangeburg Road

2.0 Introduction

The Knightsville Residential Development is planned to be located on Orangeburg Road in Knightsville, SC. The proposed development will consist of 195 single-family homes and 105 low-rise townhomes. The development is planned to be accessed by a full access driveway on Orangeburg Road. This driveway location has been coordinated with SCDOT staff. For the purposes of this TIA, the development is assumed complete by 2021.

3.0 Inventory

3.1 Study Area

The study area for the TIA includes the following existing intersections:

- Orangeburg Road at Central Avenue
- Orangeburg Road at Julius Street
- Orangeburg Road at Cone Lane
- Orangeburg Road at Claussen Street

Figure 1 (**Appendix**) shows the site location and **Figure 2** (**Appendix**) shows the project conceptual site plan.

3.2 Existing Conditions

Roadways in the project vicinity include Orangeburg Road, Central Avenue, Julius Street, Cone Lane, and Claussen Street.

Orangeburg Road is a two-lane roadway with a posted speed limit of 35 miles per hour (mph) in the vicinity of the project. Per 2016 SCDOT Average Annual Daily Traffic (AADT) data, Orangeburg Road carries approximately 13,500 vehicles per day (vpd) in the project area.

Central Avenue is a two-lane roadway with a posted speed limit of 40 mph at the intersection of Central Avenue at Orangeburg Road. The roadway is in the process of being improved to a three-lane section in the vicinity of the intersection of Central Avenue at Orangeburg Road. Central Avenue has a 2016 SCDOT AADT of 10,200 vpd west of Orangeburg Road and 13,700 vpd east of Orangeburg Road.

Julius Street is a two-lane roadway with a posted speed limit of 25 mph.

Cone Lane is a two-lane roadway.

Claussen Street is a two-lane roadway with a posted speed limit of 35 mph.

Figure 3 (**Appendix**) shows the existing roadway laneage in the study area.

4.0 Traffic Generation

The traffic generation potential of the proposed development was determined using trip generation rates published in Institute of Transportation Engineers (ITE) *Trip Generation* (Institute of Transportation Engineers, Tenth Edition).

Table 1 summarizes the daily and peak hour trips associated with the proposed site.

Table 1:
Trip Generation[1]

Land Use and Intensity	ITE Land Use Code	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
195 Single Family Homes	210	1,922	143	36	107	193	122	71
105 Low-Rise Townhomes	220	753	50	12	38	62	39	23
New Trips		**2,675**	**193**	**48**	**145**	**255**	**161**	**94**

1. Source: ITE *Trip Generation*, Tenth Edition

The proposed development is projected to generate 2,675 daily trips with 193 trips during the AM peak hour (48 entering and 145 exiting) and 255 trips during the PM peak hour (161 entering and 94 exiting).

5.0 Site Traffic Distribution

The proposed project traffic was assigned to the surrounding roadway network. The directional distribution and assignment were based on qualitative knowledge of the project area, quantitative application of existing traffic patterns, and expected trip length.

The following general trip distribution was applied to the project trips:

- 20% to/from the north on Orangeburg Road
- 45% to/from the south on Orangeburg Road
- 5% to/from the west on Central Avenue
- 30% to/from the east on Central Avenue

Figure 4 shows the proposed traffic distribution for the project trips.

6.0 Traffic Volumes

6.1 2017 Existing Traffic

Peak hour intersection turning movement counts including vehicular, pedestrian, and heavy vehicle traffic were performed in October 2017 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM at the following intersections:

- Orangeburg Road at Central Avenue
- Orangeburg Road at Julius Street
- Orangeburg Road at Cone Lane
- Orangeburg Road at Claussen Street

The turning movement count data is included in the **Appendix** and the AM and PM peak hour existing traffic volumes are shown in **Figure 5** (**Appendix**). The study intersections of Orangeburg Road at Cone Lane and Orangeburg Road at Claussen Street were counted as one intersection due to their proximity but were analyzed as two separate intersections.

6.2 2021 No Build Traffic

Historic growth is defined as the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area. Based on historic daily traffic trends, a 3.5 percent per year growth rate was applied for this analysis.

The 2021 No Build traffic volumes include existing traffic grown to the buildout year. **Figure 6** (**Appendix**) and **Figure 7** (**Appendix**) show the 2021 No Build AM and PM peak hour traffic volumes, respectively.

6.3 Project Traffic

The AM peak hour and PM peak hour projected project trips were assigned based on the trip distribution discussed in **Section 5.**

6.4 2021 Build Traffic

The 2021 total traffic volumes include the 2021 background traffic and the proposed development traffic at buildout. The 2021 AM and PM peak hour total traffic volumes are shown in **Figure 6** (**Appendix**) and **Figure 7** (**Appendix**), respectively.

Intersection volume development worksheets are included in the **Appendix**.

7.0 Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours for the 2017 Existing, 2021 No Build, and 2021 Build conditions using the Synchro software to determine the operating characteristics of the adjacent roadway network and the impacts of the proposed project. The analyses were conducted with methodologies contained in the *2010 Highway Capacity Manual* (Transportation Research Board, December 2010).

Capacity of an intersection is defined as the maximum number of vehicles that can pass through an intersection during a specified time, typically an hour. Capacity is described by level of service (LOS) for the operating characteristics of an intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for signalized intersections is determined by the overall intersection operations and is reflected in average delay per vehicle. LOS D or better is typically considered acceptable for signalized intersections.

LOS for a two-way stop-controlled (TWSC) intersection is determined by the delay of the poorest performing minor approach, as LOS is not defined for TWSC intersections as a whole. It is typical for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F while the majority of the traffic moving through the corridor typically experiences little or no delay.

Capacity analyses were performed for the 2017 Existing, 2021 No Build, and 2021 Build AM and PM peak hour traffic conditions for the following intersections:

- Orangeburg Road at Central Avenue (signalized)
- Orangeburg Road at Julius Street (unsignalized)
- Orangeburg Road at Cone Lane (unsignalized)

- Orangeburg Road at Claussen Street (unsignalized)
- Orangeburg Road at the Site Driveway (unsignalized) (Build conditions only)

Existing signal timings were applied to the signalized intersection of Orangeburg Road at Central Avenue, and the signal timings were optimized in the 2021 No Build and 2021 Build conditions. In the 2021 Build with Improvements conditions, the signal timings were optimized and included the addition of a right-turn overlap phase.

7.1 Orangeburg Road at Central Avenue

Table 2 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 No Build, 2021 Build, and 2021 Build with Improvements AM and PM peak hour conditions at the signalized intersection of Orangeburg Road at Central Avenue.

Table 2:
LOS Analysis Summary
Orangeburg Road at Central Avenue

Analysis Scenario	Approach	AM Peak Hour		PM Peak Hour	
		Approach LOS (Delay[1])	Overall LOS (Delay[1])	Approach LOS (Delay[1])	Overall LOS (Delay[1])
Existing	NB SB EB WB	D (36.4) D (41.2) D (36.6) D (36.1)	D (37.8)	D (53.6) D (43.6) D (35.8) D (39.1)	D (43.2)
2021 No Build[2]	NB SB EB WB	D (53.4) E (71.3) E (62.1) D (53.8)	E (60.4)	E (68.9) E (56.1) E (65.7) E (78.3)	E (67.6)
2021 Build[3]	NB SB EB WB	F (100.6) E (79.1) E (62.1) E (61.6)	E (77.1)	F (95.2) E (66.9) E (65.7) F (99.5)	F (83.2)
2021 Build with Improvements[4]	NB SB EB WB	C (25.8) E (67.3) E (62.0) D (54.4)	D (51.7)	C (32.6) E (68.3) E (67.9) F (71.6)	E (59.6)

1. Delay = average seconds per vehicle
2. Signal timings optimized
3. Signal timings optimized, no laneage improvements
4. Exclusive northbound right-turn lane added, signal timings optimized, right-turn overlap phases added

As shown in **Table 2**, the intersection of Orangeburg Road at Central Avenue currently operates at LOS D during the AM and PM peak hours. Based on the projected traffic growth, the intersection is projected to experience elevated delay during the AM and PM peak hours in the 2021 No Build and 2021 Build conditions with signal timing optimization only. Installation of a northbound right-turn lane with an overlap phase was included in the Build with Improvements conditions based on discussion with SCDOT on potential improvements for the intersection. With these improvements, the intersection is projected to operate at LOS D in the 2021 AM peak hour Build with Improvements conditions and LOS E in the PM peak hour Build with Improvements conditions. Intersection laneage improvements, traffic signal timing adjustments, and integration with existing driveways will need to be coordinated with SCDOT in the design phase.

7.2 Orangeburg Road at Julius Street

Table 3 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 No Build, and 2021 Build AM and PM peak hour conditions for the unsignalized intersection of Orangeburg Road at Julius Street.

Table 3:
LOS Analysis Summary
Orangeburg Road at Julius Street

Analysis Scenario	Approach	AM Peak Hour Approach LOS (Delay[1,3])	PM Peak Hour Approach LOS (Delay[1,3])
Existing	NB SB WB[2]	A (0.0) A (0.0) D (25.6)	A (0.0) A (0.0) C (21.4)
2021 No Build	NB SB WB[2]	A (0.0) A (0.0) D (32.7)	A (0.0) A (0.0) D (26.0)
2021 Build with Improvements[4]	NB SB WB[2]	A (0.0) A (0.0) C (19.7)	A (0.0) A (0.0) C (20.3)

1. Delay = average seconds per vehicle
2. Stop controlled approach for unsignalized intersection
3. Overall intersection LOS is not provided for two-way stop controlled unsignalized intersections
4. The Build conditions include a two-way left-turn lane on Orangeburg Road at this intersection as part of the improvements associated with the intersection of Orangeburg Road at the Site Driveway.

As shown in **Table 3**, the intersection of Orangeburg Road at Julius Street currently operates at LOS D in the AM peak hour and LOS C in the PM peak hour. Based on the projected intersection operations, the intersection is projected to operate at LOS D during the AM and PM peak hours in the 2021 No Build conditions. The intersection is projected to operate at LOS C during the AM and PM peak hours in the 2021 Build with Improvements conditions with the inclusion of the TWLTL associated with the Site Driveway.

7.3 Orangeburg Road at Cone Lane

Table 4 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 No Build, and 2021 Build AM and PM peak hour conditions for the unsignalized intersection of Orangeburg Road at Cone Lane.

Table 4:
LOS Analysis Summary
Orangeburg Road at Cone Lane

Analysis Scenario	Approach	AM Peak Hour Approach LOS (Delay[1,3])	PM Peak Hour Approach LOS (Delay[1,3])
Existing	NB SB EB[2]	A (0.1) A (0.0) C (19.7)	A (0.2) A (0.0) B (14.6)
2021 No Build	NB SB EB[2]	A (0.1) A (0.0) C (23.1)	A (0.2) A (0.0) C (16.3)
2021 Build	NB SB EB[2]	A (0.1) A (0.0) D (25.1)	A (0.2) A (0.0) C (18.5)

1. Delay = average seconds per vehicle
2. Stop controlled approach for unsignalized intersection
3. Overall intersection LOS is not provided for two-way stop controlled unsignalized intersections

As shown in **Table 4**, the intersection of Orangeburg Road at Cone Lane currently operates at LOS C or better during the Existing AM and PM peak hour conditions. Based on the projected intersection operations, the intersection of Orangeburg Road at Cone Lane is expected to operate at LOS D or better in the 2021 No Build and 2021 Build conditions during the AM and PM peak hours.

7.4 Orangeburg Road at Claussen Street

Table 5 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2021 No Build, and 2021 Build AM and PM peak hour conditions for the unsignalized intersection of Orangeburg Road at Claussen Street.

As shown in **Table 5**, the intersection of Orangeburg Road at Claussen Street currently operates at LOS D during the AM peak hour and LOS B during the PM peak hour. Based on the projected intersection operations the intersection is projected to operate at LOS D during the AM peak hour and LOS C during the PM peak hour in the 2021 No Build conditions. The intersection is projected to experience some delay during the AM peak hour and to operate at LOS C during the PM peak hour in the 2021 Build conditions. It is typical for stop-controlled side streets to experience longer delays during peak hours while most of the traffic moving through the corridor typically experiences little or no delay.

Table 5: LOS Analysis Summary Orangeburg Road at Claussen Street			
Analysis Scenario	**Approach**	**AM Peak Hour Approach LOS (Delay[1,3])**	**PM Peak Hour Approach LOS (Delay[1,3])**
Existing	NB SB WB[2]	A (0.0) A (0.0) D (25.2)	A (0.0) A (0.1) B (14.8)
2021 No Build	NB SB WB[2]	A (0.0) A (0.0) D (32.7)	A (0.0) A (0.1) C (16.5)
2021 Build	NB SB WB[2]	A (0.0) A (0.0) E (38.9)	A (0.0) A (0.1) C (17.6)

1. Delay = average seconds per vehicle
2. Stop controlled approach for unsignalized intersection
3. Overall intersection LOS is not provided for two-way stop controlled unsignalized intersections

7.5 Orangeburg Road at the Site Driveway

Table 6 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected 2021 Build with Improvements AM and PM peak hour conditions at the unsignalized intersection of Orangeburg Road at the Site Driveway.

Table 6: LOS Analysis Summary Orangeburg Road at the Site Driveway			
Analysis Scenario	**Approach**	**AM Peak Hour Approach LOS (Delay[1,3])**	**PM Peak Hour Approach LOS (Delay[1,3])**
2021 Build with Improvements[4]	NB SB EB[2]	A (0.5) A (0.0) F (123.6)	A (0.8) A (0.0) F (72.8)

1. Delay = average seconds per vehicle
2. Stop controlled approach for unsignalized intersection
3. Overall intersection LOS is not provided for two-way stop controlled unsignalized intersections
4. Addition of an exclusive 100-foot northbound left-turn lane opening to a TWLTL on Orangeburg Road, exclusive southbound right-turn lane, and exclusive eastbound left- and right-turn lanes exiting the site

In the 2021 Build with Improvements conditions, exclusive eastbound left- and right-turn lanes exiting the development were included at the intersection.

The intersection was further reviewed for consideration of the installation of an exclusive southbound right-turn lane and an exclusive northbound left-turn lane on Orangeburg Road based on SCDOT Design Manual guidelines and projected intersection volumes. Based on the analysis, the AM and PM peak hour conditions are projected to meet the guidelines for installation of an exclusive northbound left-turn lane and the PM peak hour conditions are projected to meet the guidelines for installation of an exclusive southbound right-turn lane.

With the inclusion of these improvements, the eastbound traffic exiting the development is still projected to experience some delay in the 2021 Build with Improvements peak hour conditions. The eastbound left-turn queue exiting the site is projected to be approximately six vehicles in the 2021 Build with Improvements AM peak hour conditions and approximately four vehicles in the 2021 Build with Improvements PM conditions. The eastbound right-turn queue is projected to be approximately one vehicle in the 2021 Build with Improvements AM and PM peak hour conditions. These operations are typical for stop-controlled side streets and driveways on major streets, which may experience longer delays during peak hours while most of the traffic moving through the corridor typically experiences little or no delay.

7.6 Preliminary Coordination with SCDOT

At a February 6, 2018 meeting with SCDOT, the Site Driveway location and turn lane concepts at the intersection of Orangeburg Road at the Site Driveway was discussed. Based on that discussion, it was determined that at the Site Driveway, the exclusive southbound right-turn lane length on Orangeburg Road will be maximized with the taper beginning just after the driveway south of Cone Lane. The exclusive northbound left-turn lane will have approximately 100 feet of storage, then open into TWLTL to the south, past the intersection of Orangeburg Road at Julius Street. The Site Driveway will be full access and have exclusive outbound left- and right-turn lanes.

Overall intersection improvements to the intersection of Orangeburg Road at Central Avenue were discussed with SCDOT for inclusion in the analysis.

7.7 Summary

In summary, based on the projected future conditions and discussion with SCDOT staff, the following transportation improvements are recommended as a part of this project:

- Installation of exclusive northbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at Central Avenue – details to be coordinated with SCDOT
- Update traffic signal timings at the intersection of Orangeburg Road at Central Avenue including the installation of a right-turn overlap operation and associated signal hardware
- Installation of an exclusive 100-foot northbound left-turn lane opening to a TWLTL, and an exclusive southbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at the Site Driveway per previous discussion with SCDOT

- Installation of exclusive eastbound left- and right-turn lanes exiting the Site Driveway at Orangeburg Road

8.0 Conclusion

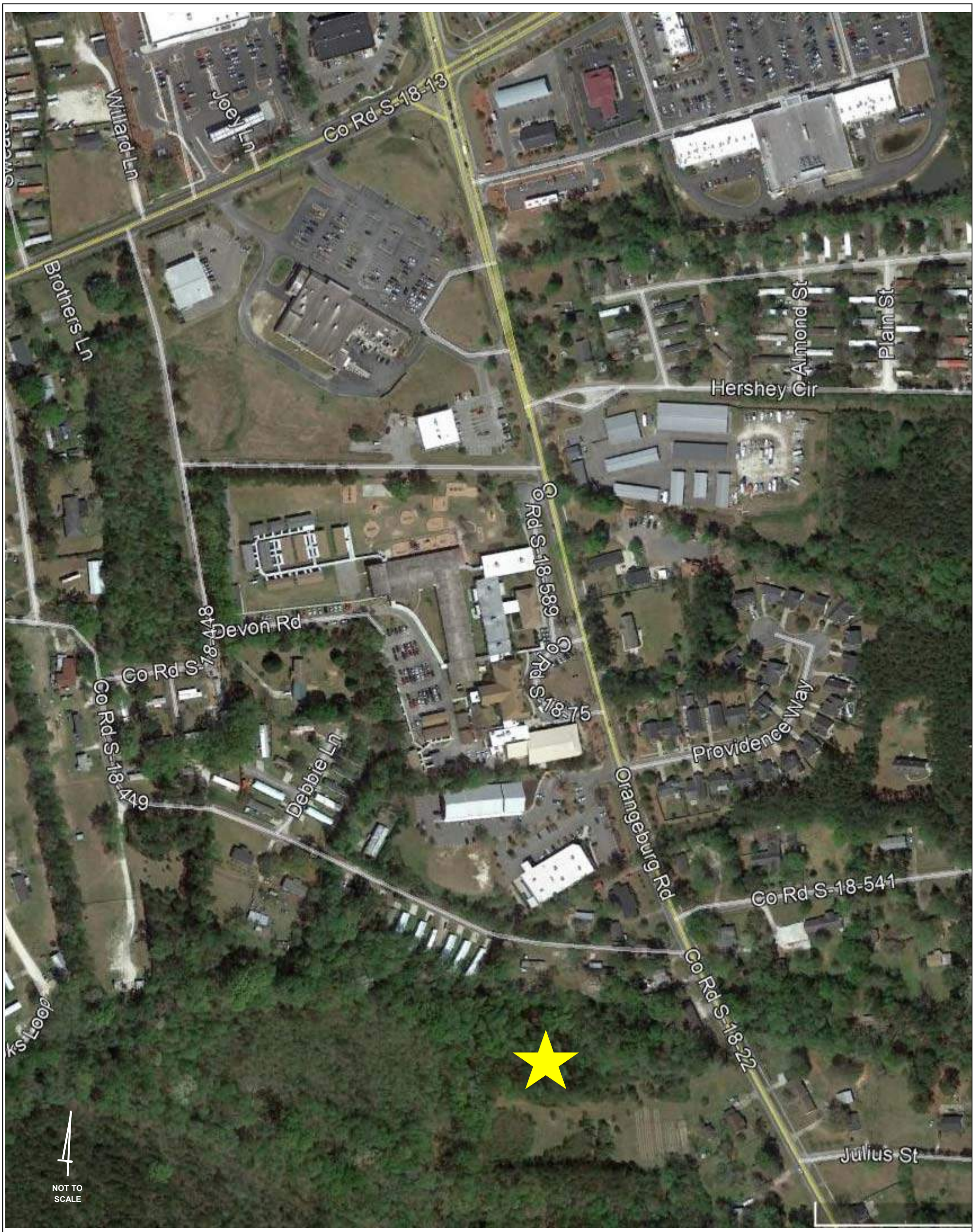
This report updates the December 4, 2017 traffic study for the Knightsville Residential Development from 273 units to 300 total single-family and multi-family units. The report also updates the March 20, 2018 traffic study for the Knightsville Residential Development to revise the recommendations for the intersection of Orangeburg Road at Central Avenue per discussion of overall intersection improvements with SCDOT.

The Knightsville Residential Development is planned to be located on Orangeburg Road in Knightsville, SC. The proposed development will consist of 195 single-family homes and 105 low-rise townhomes. The development is planned to be accessed by a full access driveway on Orangeburg Road. This driveway location has been coordinated with SCDOT staff. For the purposes of this TIA, the development is assumed complete by 2021.

Based on the projected future conditions and discussion with SCDOT staff, the following transportation improvements are recommended as a part of this project:

- Installation of exclusive northbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at Central Avenue – details to be coordinated with SCDOT
- Update traffic signal timings at the intersection of Orangeburg Road at Central Avenue including the installation of a right-turn overlap operation and associated signal hardware
- Installation of an exclusive 100-foot northbound left-turn lane opening to a TWLTL, and an exclusive southbound right-turn lane on Orangeburg Road at the intersection of Orangeburg Road at the Site Driveway per previous discussion with SCDOT
- Installation of exclusive eastbound left- and right-turn lanes exiting the Site Driveway at Orangeburg Road

Appendix



LEGEND
★ Project Site

BIHL ENGINEERING	Knightsville Residential Development Traffic Impact Analysis	Site Location	Figure 1

Knightsville Residential Development
Traffic Impact Analysis

Site Plan

Figure 2

Note:
This plan is conceptual and based upon incomplete survey information. It is subject to change upon receipt of full survey, final programming, final engineering and review and approval of governmental regulating bodies.

LEGEND

- 40'x120' lot
- 35'x120' lot
- Townhome

AREA CHART

Total Site - 75.41 Acres

Open Space - 32.72 Acres
- Wetland..... 9.57 Acres
- Active Park..... 1.86 Acres
- Passive Park..... 21.29 Acres

Lots - 300 Total
- Townhome..... 105 (29%)
- 35' Lots..... 86 (71%)
- 40' Lots..... 109 (71%)

0' 200' 400' 600'

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

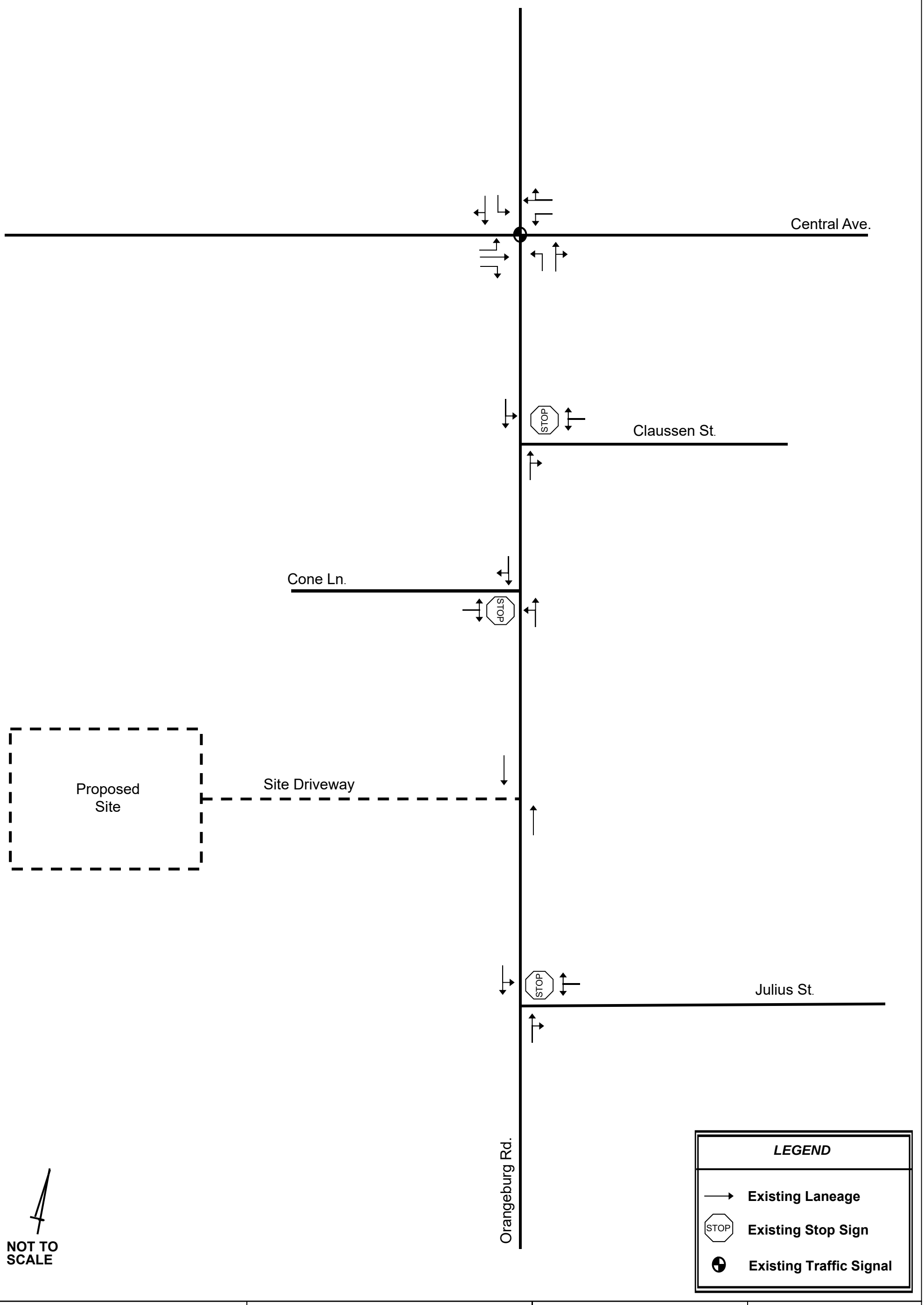
SEAMONWHITESIDE

CONCEPTUAL DEVELOPMENT PLAN

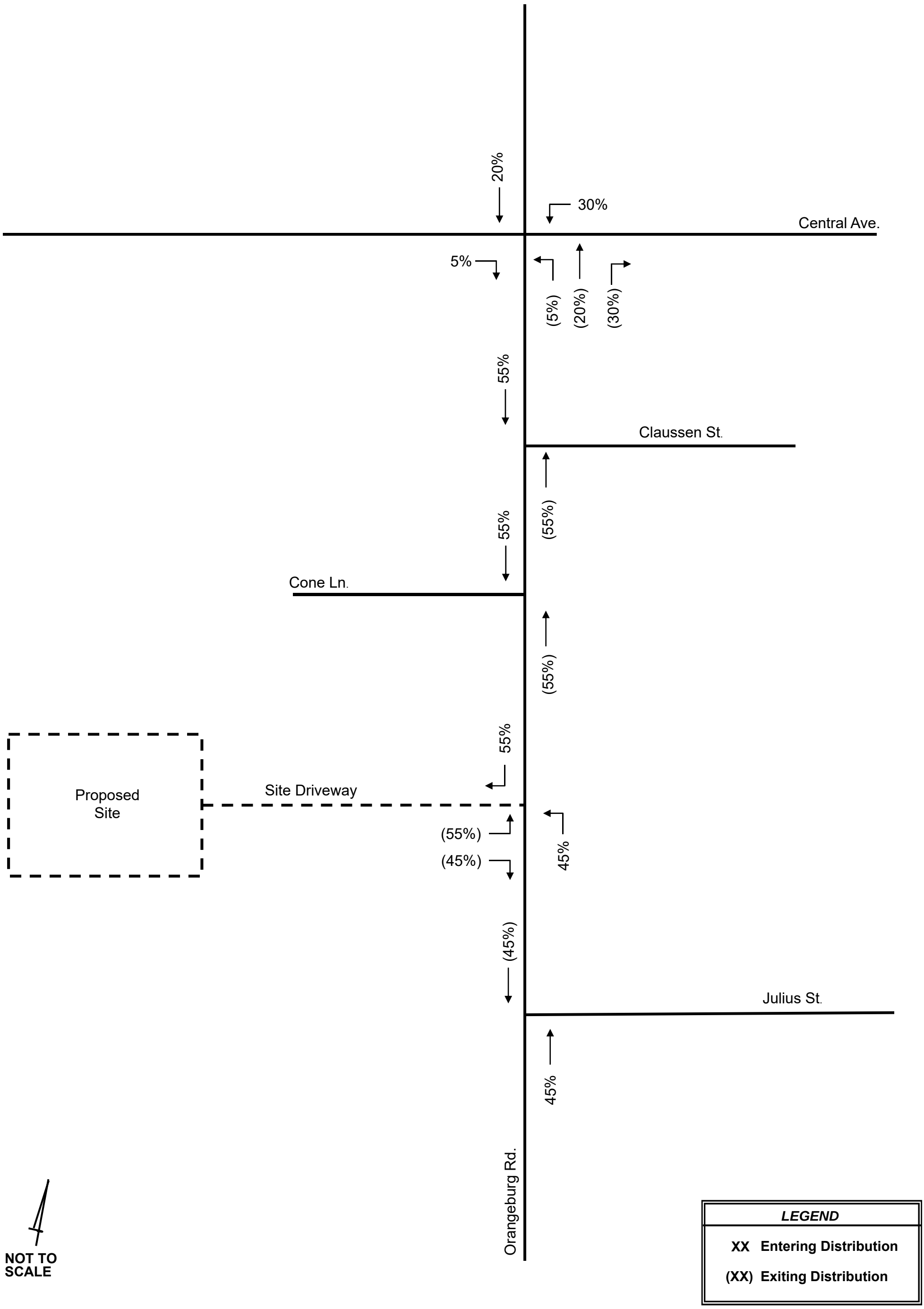
DORCHESTER COUNTY, SOUTH CAROLINA

7690

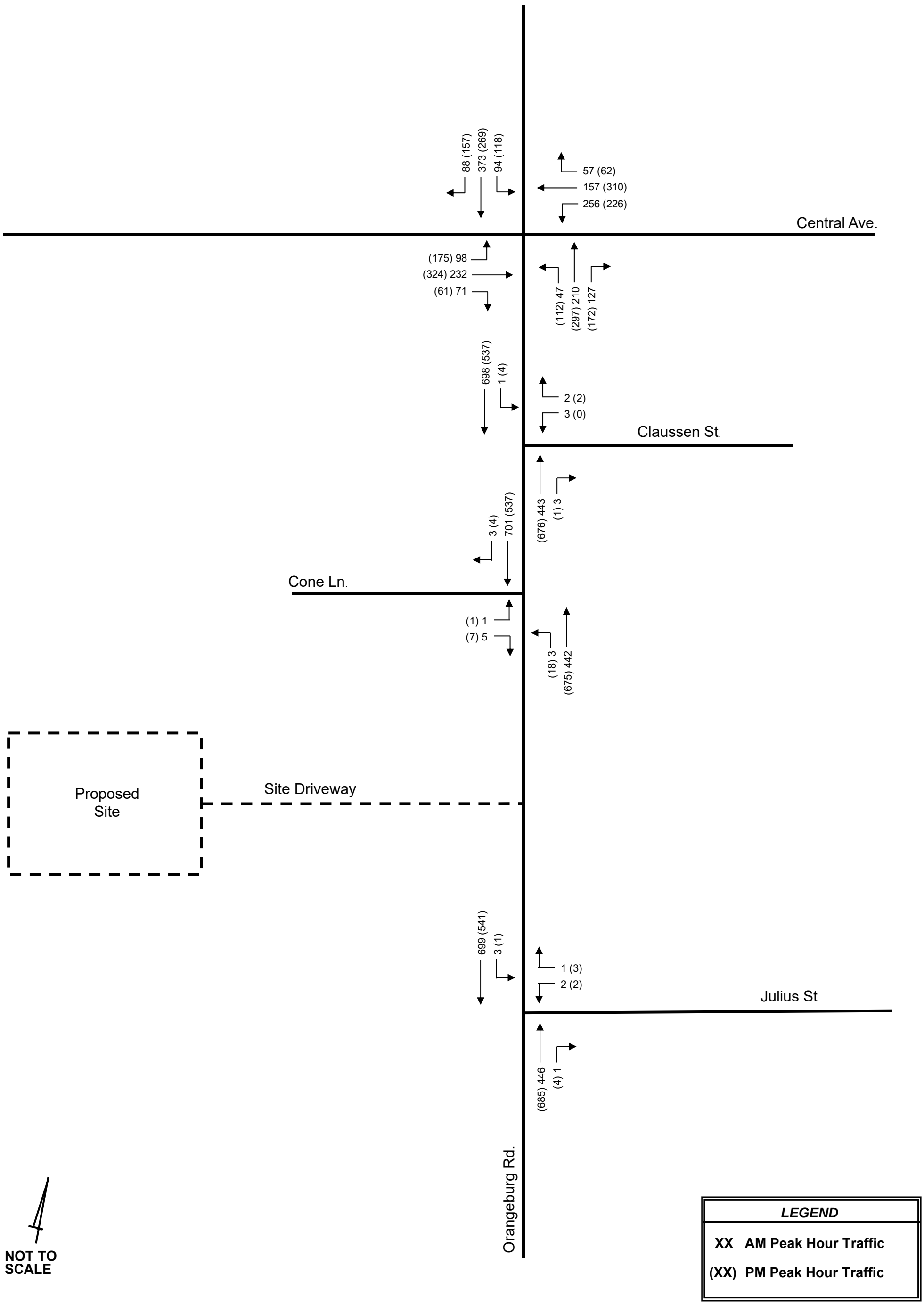
01.11.18



BIHL ENGINEERING	**Knightsville Residential Development Traffic Impact Analysis**	**Existing Laneage**	**Figure 3**



BIHL ENGINEERING	**Knightsville Residential Development Traffic Impact Analysis**	**Trip Distribution**	**Figure 4**

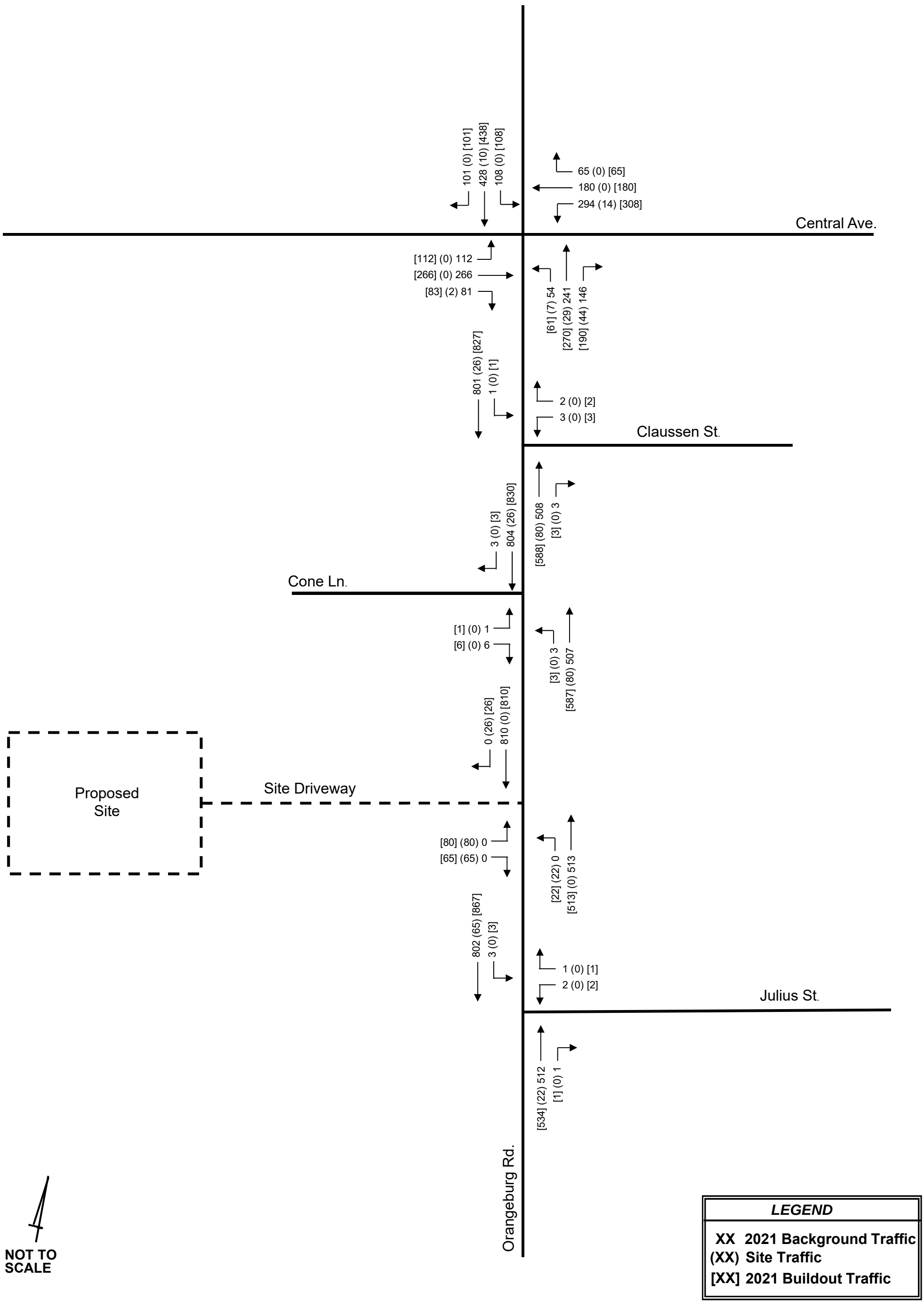


BIHL ENGINEERING

Knightsville Residential Development Traffic Impact Analysis

Existing Traffic Volumes

Figure 5

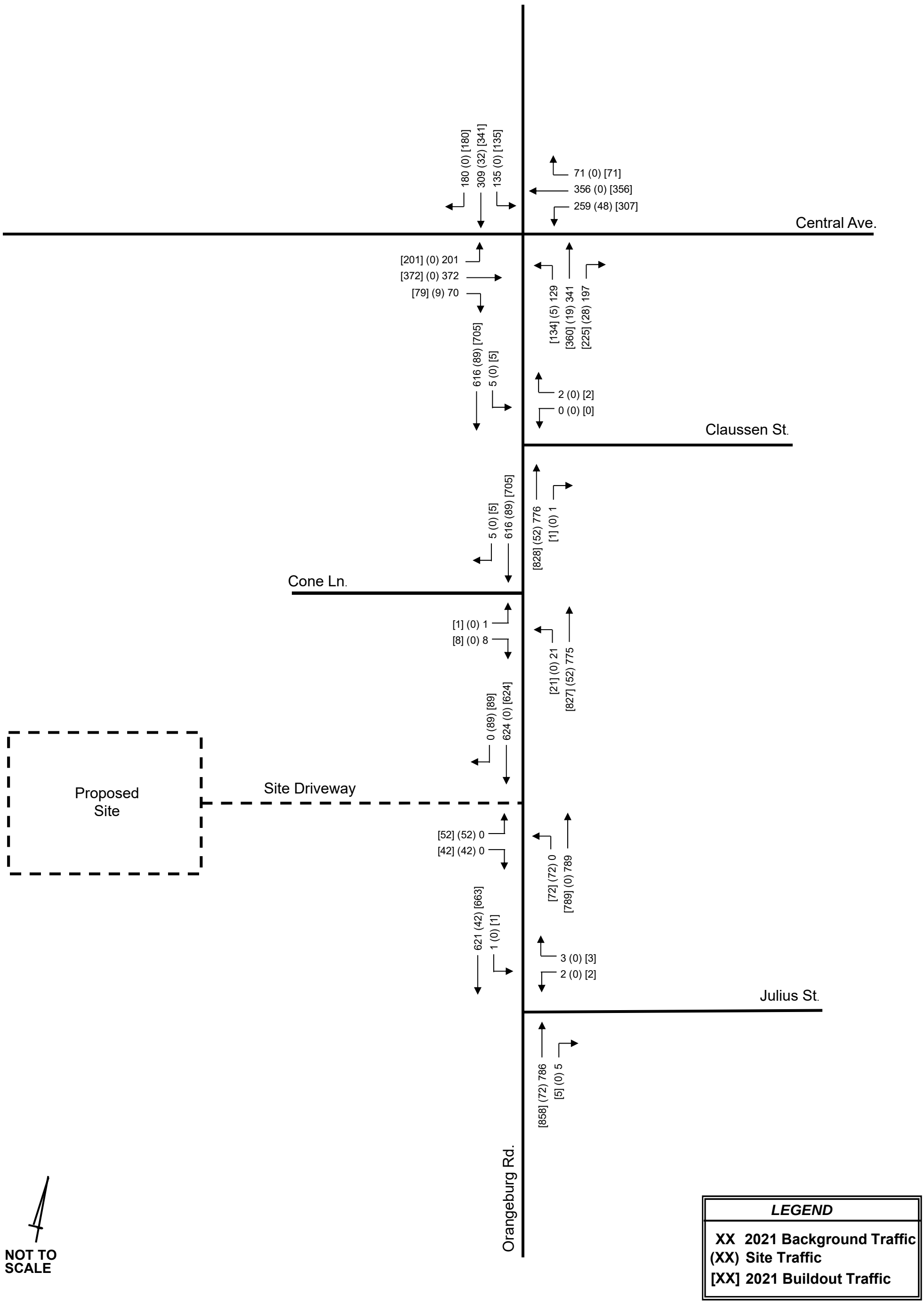


BIHL ENGINEERING

Knightsville Residential Development Traffic Impact Analysis

2021 AM Peak Traffic Volumes

Figure 6



BIHL ENGINEERING

Knightsville Residential Development Traffic Impact Analysis

2021 PM Peak Traffic Volumes

Figure 7

Short Counts

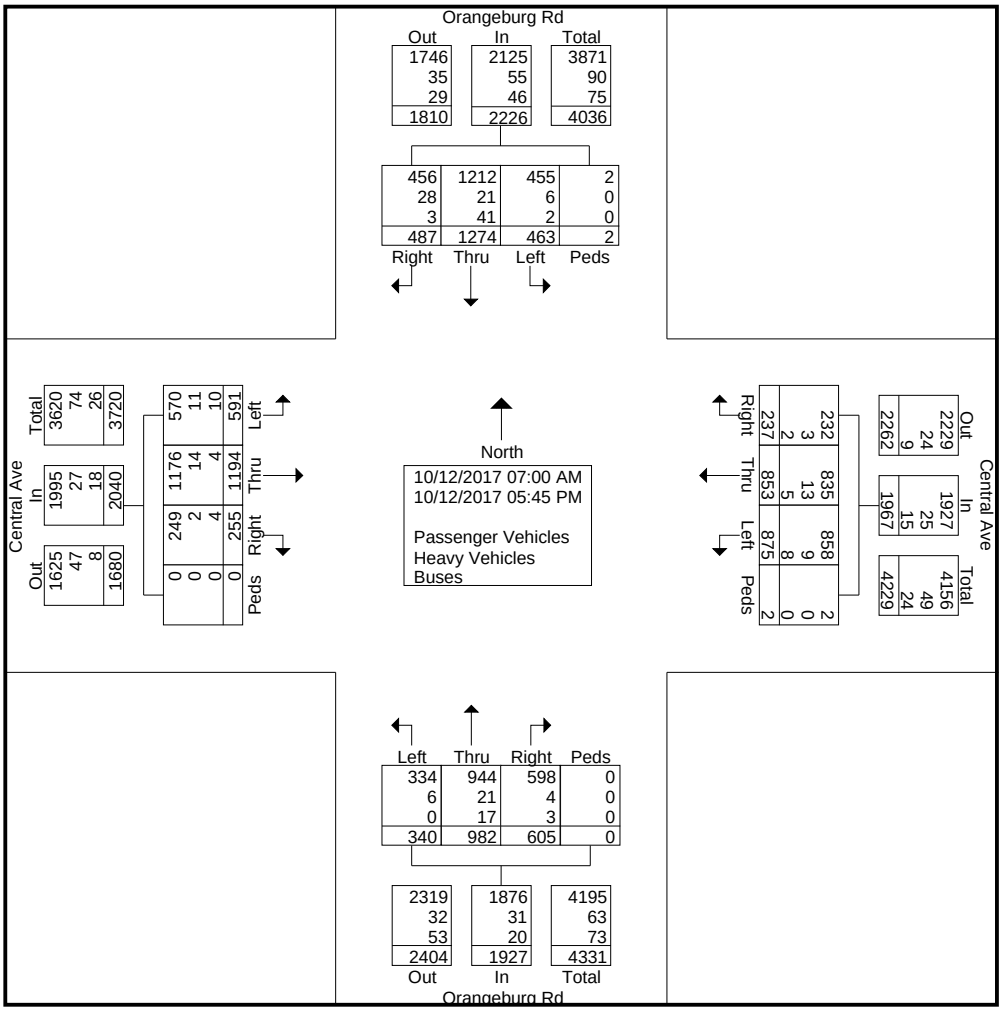
File Name : Orangeburg Rd @ Central Ave
Site Code :
Start Date : 10/12/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Orangeburg Rd From North				Central Ave From East				Orangeburg Rd From South				Central Ave From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	25	87	35	0	46	32	8	0	13	41	25	0	58	103	11	0	484
07:15 AM	24	77	21	0	41	16	14	0	10	74	31	0	40	85	10	0	443
07:30 AM	28	80	24	0	49	30	9	0	7	49	32	0	50	77	10	0	445
07:45 AM	21	85	25	0	49	30	13	0	11	38	30	0	28	73	14	0	417
Total	98	329	105	0	185	108	44	0	41	202	118	0	176	338	45	0	1789
08:00 AM	21	101	29	0	51	44	15	0	9	46	18	0	20	57	16	0	427
08:15 AM	21	114	18	0	99	37	12	0	5	44	27	0	26	53	24	0	480
08:30 AM	30	101	24	0	78	42	11	0	14	57	37	0	19	58	9	0	480
08:45 AM	22	57	17	0	28	34	19	0	19	63	45	0	33	64	22	0	423
Total	94	373	88	0	256	157	57	0	47	210	127	0	98	232	71	0	1810
04:00 PM	36	69	40	0	62	83	14	0	22	74	44	0	37	72	17	0	570
04:15 PM	26	67	37	0	50	72	20	0	32	79	40	0	44	92	11	0	570
04:30 PM	31	64	47	0	50	69	17	0	36	77	41	0	48	87	17	0	584
04:45 PM	25	69	33	2	64	86	11	2	22	67	47	0	46	73	16	0	563
Total	118	269	157	2	226	310	62	2	112	297	172	0	175	324	61	0	2287
05:00 PM	40	63	33	0	42	63	21	0	34	73	49	0	32	86	17	0	553
05:15 PM	34	84	41	0	68	75	16	0	40	49	61	0	34	57	14	0	573
05:30 PM	44	76	35	0	61	69	24	0	33	80	35	0	36	74	16	0	583
05:45 PM	35	80	28	0	37	71	13	0	33	71	43	0	40	83	31	0	565
Total	153	303	137	0	208	278	74	0	140	273	188	0	142	300	78	0	2274
Grand Total	463	1274	487	2	875	853	237	2	340	982	605	0	591	1194	255	0	8160
Apprch %	20.8	57.2	21.9	0.1	44.5	43.4	12	0.1	17.6	51	31.4	0	29	58.5	12.5	0	
Total %	5.7	15.6	6	0	10.7	10.5	2.9	0	4.2	12	7.4	0	7.2	14.6	3.1	0	
Passenger Vehicles	455	1212	456	2	858	835	232	2	334	944	598	0	570	1176	249	0	7923
% Passenger Vehicles	98.3	95.1	93.6	100	98.1	97.9	97.9	100	98.2	96.1	98.8	0	96.4	98.5	97.6	0	97.1
Heavy Vehicles	6	21	28	0	9	13	3	0	6	21	4	0	11	14	2	0	138
% Heavy Vehicles	1.3	1.6	5.7	0	1	1.5	1.3	0	1.8	2.1	0.7	0	1.9	1.2	0.8	0	1.7
Buses	2	41	3	0	8	5	2	0	0	17	3	0	10	4	4	0	99
% Buses	0.4	3.2	0.6	0	0.9	0.6	0.8	0	0	1.7	0.5	0	1.7	0.3	1.6	0	1.2

Short Counts

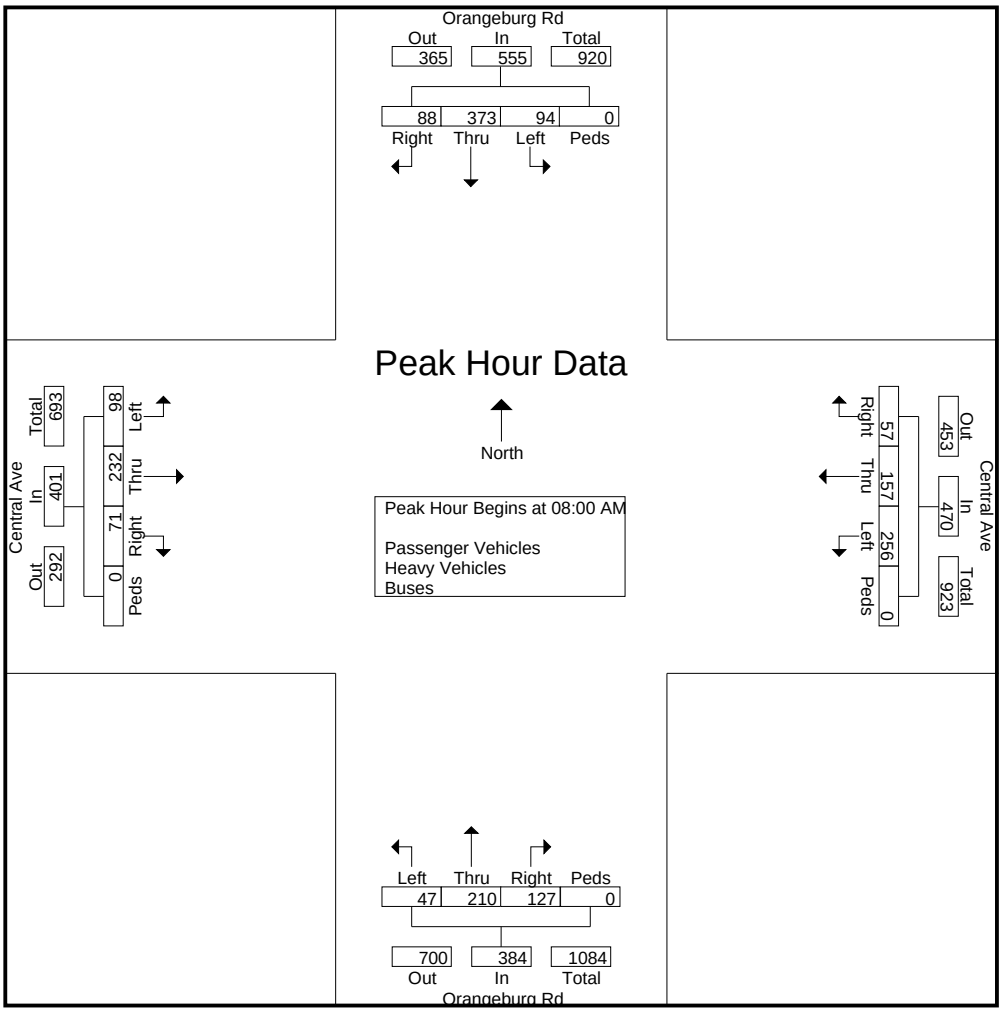
File Name : Orangeburg Rd @ Central Ave
Site Code :
Start Date : 10/12/2017
Page No : 2



Short Counts

File Name : Orangeburg Rd @ Central Ave
Site Code :
Start Date : 10/12/2017
Page No : 3

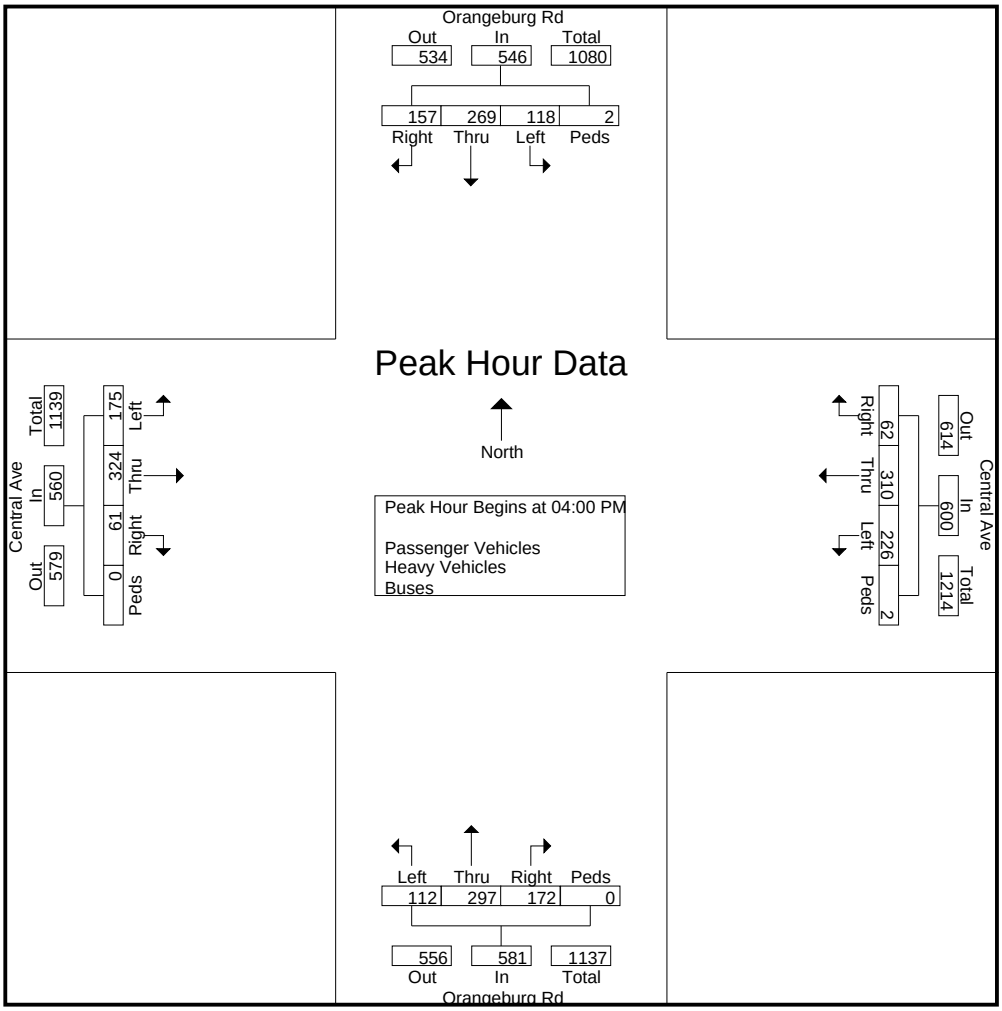
	Orangeburg Rd From North					Central Ave From East					Orangeburg Rd From South					Central Ave From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	21	101	**29**	0	151	51	**44**	15	0	110	9	46	18	0	73	20	57	16	0	93	427
08:15 AM	21	**114**	18	0	153	**99**	37	12	0	**148**	5	44	27	0	76	26	53	**24**	0	103	**480**
08:30 AM	**30**	101	24	0	**155**	78	42	11	0	131	14	57	37	0	108	19	58	9	0	86	480
08:45 AM	22	57	17	0	96	28	34	**19**	0	81	**19**	**63**	**45**	0	**127**	**33**	**64**	22	0	**119**	423
Total Volume	94	373	88	0	555	256	157	57	0	470	47	210	127	0	384	98	232	71	0	401	1810
% App. Total	16.9	67.2	15.9	0		54.5	33.4	12.1	0		12.2	54.7	33.1	0		24.4	57.9	17.7	0		
PHF	.783	.818	.759	.000	.895	.646	.892	.750	.000	.794	.618	.833	.706	.000	.756	.742	.906	.740	.000	.842	.943



Short Counts

File Name : Orangeburg Rd @ Central Ave
Site Code :
Start Date : 10/12/2017
Page No : 4

	Orangeburg Rd From North					Central Ave From East					Orangeburg Rd From South					Central Ave From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	**36**	**69**	40	0	**145**	62	83	14	0	159	22	74	44	0	140	37	72	**17**	0	126	570
04:15 PM	26	67	37	0	130	50	72	**20**	0	142	32	**79**	40	0	151	44	**92**	11	0	147	570
04:30 PM	31	64	**47**	0	142	50	69	17	0	136	**36**	77	41	0	**154**	**48**	87	17	0	**152**	**584**
04:45 PM	25	69	33	**2**	129	**64**	**86**	11	**2**	**163**	22	67	**47**	0	136	46	73	16	0	135	563
Total Volume	118	269	157	2	546	226	310	62	2	600	112	297	172	0	581	175	324	61	0	560	2287
% App. Total	21.6	49.3	28.8	0.4		37.7	51.7	10.3	0.3		19.3	51.1	29.6	0		31.2	57.9	10.9	0		
PHF	.819	.975	.835	.250	.941	.883	.901	.775	.250	.920	.778	.940	.915	.000	.943	.911	.880	.897	.000	.921	.979



Short Counts

File Name : Orangeburg Rd @ Julius St
Site Code :
Start Date : 10/12/2017
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Orangeburg Rd From North				Julius St From East				Orangeburg Rd From South				From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	139	0	0	1	0	0	1	0	101	1	0	0	0	0	0	243
07:15 AM	0	142	0	0	0	0	0	1	0	121	0	0	0	0	0	0	264
07:30 AM	0	140	0	0	0	0	0	0	0	102	0	0	0	0	0	0	242
07:45 AM	0	144	0	0	0	0	1	0	0	78	0	0	0	0	0	0	223
Total	0	565	0	0	1	0	1	2	0	402	1	0	0	0	0	0	972
08:00 AM	1	169	0	0	0	0	0	1	0	84	0	0	0	0	0	0	255
08:15 AM	0	240	0	0	0	0	1	0	0	110	0	0	0	0	0	0	351
08:30 AM	2	191	0	0	2	0	0	0	0	125	0	0	0	0	0	0	320
08:45 AM	0	99	0	0	0	0	0	0	0	127	1	0	0	0	0	0	227
Total	3	699	0	0	2	0	1	1	0	446	1	0	0	0	0	0	1153
04:00 PM	0	136	0	0	0	0	1	0	0	211	3	0	0	0	0	0	351
04:15 PM	0	135	0	1	2	0	1	1	0	149	1	0	0	0	0	0	290
04:30 PM	1	133	0	0	0	0	1	2	0	184	0	0	0	0	0	0	321
04:45 PM	0	137	0	0	0	0	0	0	0	141	0	0	0	0	0	0	278
Total	1	541	0	1	2	0	3	3	0	685	4	0	0	0	0	0	1240
05:00 PM	0	124	0	0	1	0	0	0	0	144	0	0	0	0	0	0	269
05:15 PM	0	152	0	0	0	0	0	0	0	159	0	0	0	0	0	0	311
05:30 PM	0	152	0	0	0	0	0	0	0	163	0	0	0	0	0	0	315
05:45 PM	0	136	0	0	0	0	0	0	0	156	0	0	0	0	0	0	292
Total	0	564	0	0	1	0	0	0	0	622	0	0	0	0	0	0	1187
Grand Total	4	2369	0	1	6	0	5	6	0	2155	6	0	0	0	0	0	4552
Apprch %	0.2	99.8	0	0	35.3	0	29.4	35.3	0	99.7	0.3	0	0	0	0	0	
Total %	0.1	52	0	0	0.1	0	0.1	0.1	0	47.3	0.1	0	0	0	0	0	
Passenger Vehicles	4	2286	0	1	6	0	5	6	0	2106	6	0	0	0	0	0	4420
% Passenger Vehicles	100	96.5	0	100	100	0	100	100	0	97.7	100	0	0	0	0	0	97.1
Heavy Vehicles	0	32	0	0	0	0	0	0	0	29	0	0	0	0	0	0	61
% Heavy Vehicles	0	1.4	0	0	0	0	0	0	0	1.3	0	0	0	0	0	0	1.3
Buses	0	51	0	0	0	0	0	0	0	20	0	0	0	0	0	0	71
% Buses	0	2.2	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	1.6

Short Counts

File Name : Orangeburg Rd @ Julius St
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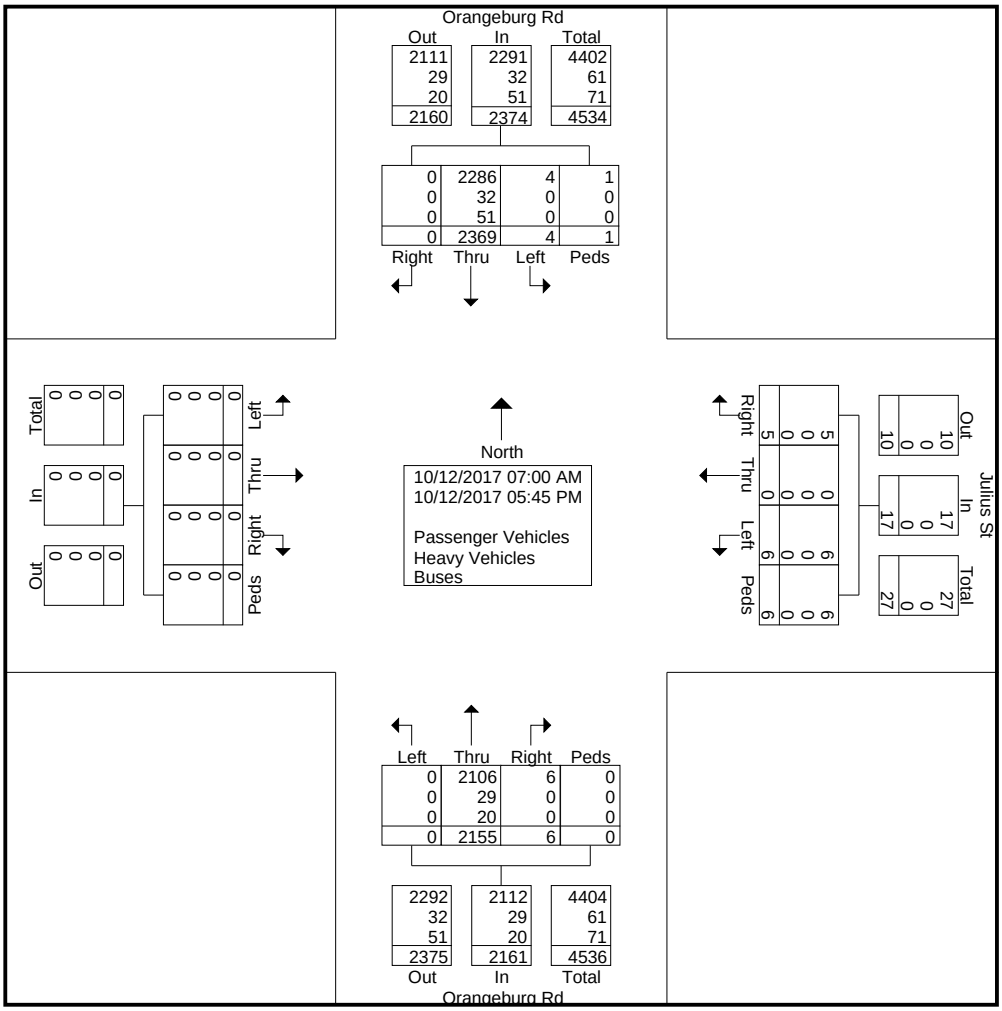
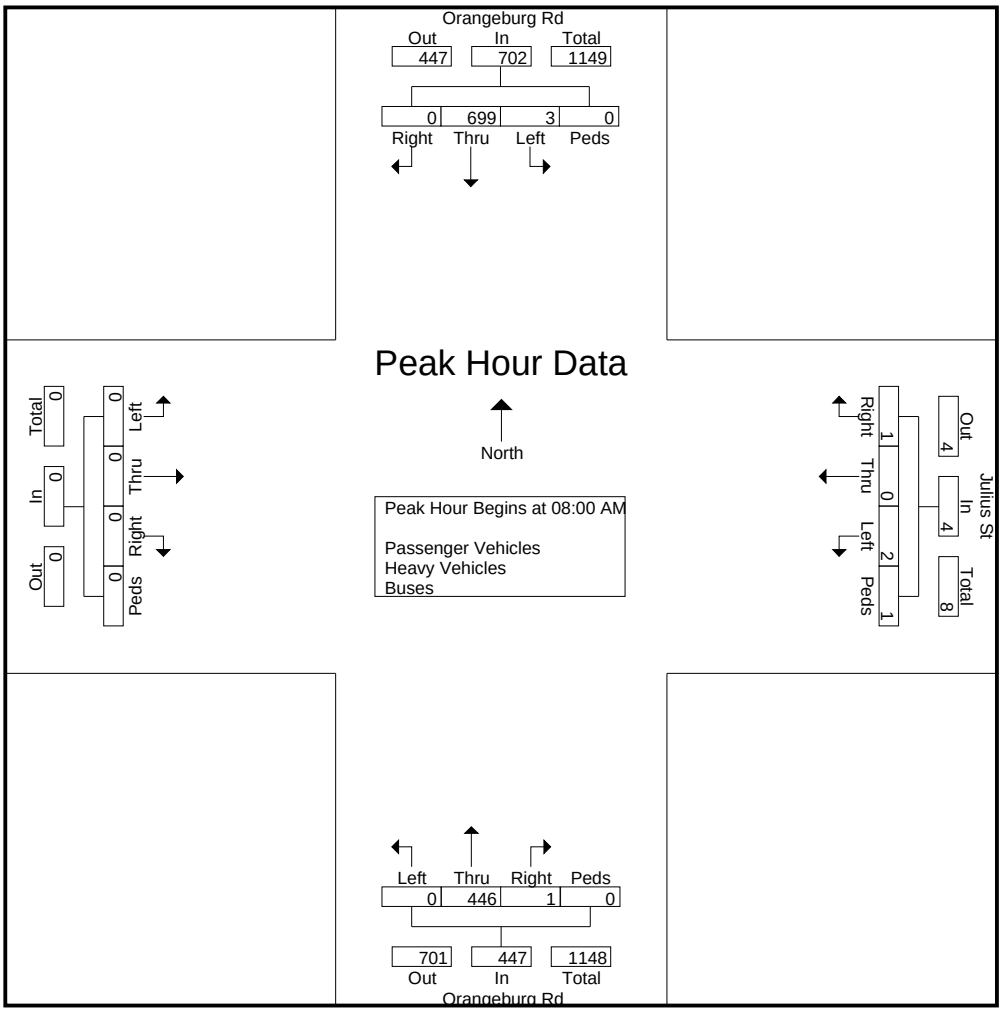


Short Counts

File Name : Orangeburg Rd @ Julius St
Site Code :
Start Date : 10/12/2017
Page No : 3

	Orangeburg Rd From North					Julius St From East					Orangeburg Rd From South					From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	169	0	0	170	0	0	0	**1**	1	0	84	0	0	84	0	0	0	0	0	255
08:15 AM	0	**240**	0	0	**240**	0	0	**1**	0	1	0	110	0	0	110	0	0	0	0	0	**351**
08:30 AM	**2**	191	0	0	193	**2**	0	0	0	**2**	0	125	0	0	125	0	0	0	0	0	320
08:45 AM	0	99	0	0	99	0	0	0	0	0	0	**127**	**1**	0	**128**	0	0	0	0	0	227
Total Volume	3	699	0	0	702	2	0	1	1	4	0	446	1	0	447	0	0	0	0	0	1153
% App. Total	0.4	99.6	0	0		50	0	25	25		0	99.8	0.2	0		0	0	0	0		
PHF	.375	.728	.000	.000	.731	.250	.000	.250	.250	.500	.000	.878	.250	.000	.873	.000	.000	.000	.000	.000	.821



Short Counts

File Name : Orangeburg Rd @ Julius St
Site Code :
Start Date : 10/12/2017
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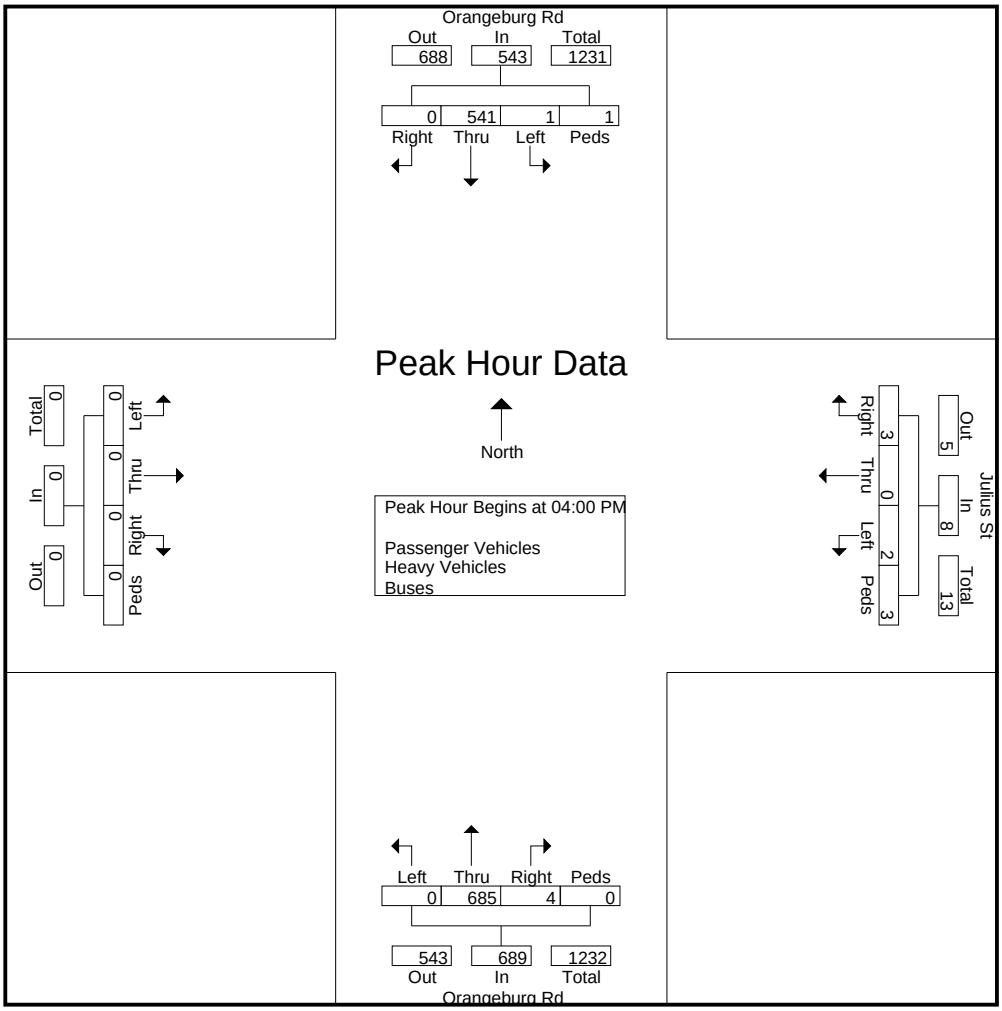
	Orangeburg Rd From North					Julius St From East					Orangeburg Rd From South					From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	136	0	0	136	0	0	**1**	0	1	0	**211**	**3**	0	**214**	0	0	0	0	0	**351**
04:15 PM	0	135	0	**1**	136	**2**	0	1	1	**4**	0	149	1	0	150	0	0	0	0	0	290
04:30 PM	**1**	133	0	0	134	0	0	1	**2**	3	0	184	0	0	184	0	0	0	0	0	321
04:45 PM	0	**137**	0	0	**137**	0	0	0	0	0	0	141	0	0	141	0	0	0	0	0	278
Total Volume	1	541	0	1	543	2	0	3	3	8	0	685	4	0	689	0	0	0	0	0	1240
% App. Total	0.2	99.6	0	0.2		25	0	37.5	37.5		0	99.4	0.6	0		0	0	0	0		
PHF	.250	.987	.000	.250	.991	.250	.000	.750	.375	.500	.000	.812	.333	.000	.805	.000	.000	.000	.000	.000	.883



Short Counts

File Name : orangeburg rd @ cone-claussen st
Site Code :
Start Date : 10/12/2017
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Orangeburg Rd From North				Claussen St From East				Orangeburg Rd From South				Cone St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	138	2	0	1	0	0	1	5	97	0	0	1	0	2	0	247
07:15 AM	0	136	2	0	0	0	2	1	1	119	0	0	1	0	1	0	263
07:30 AM	0	147	1	0	0	0	2	0	1	96	0	0	1	0	0	0	248
07:45 AM	1	135	1	0	1	0	0	0	1	85	0	3	1	0	2	0	230
Total	1	556	6	0	2	0	4	2	8	397	0	3	4	0	5	0	988
08:00 AM	0	158	1	0	1	0	2	1	1	85	0	0	0	0	1	0	250
08:15 AM	0	236	0	0	2	0	0	1	1	99	3	0	0	0	2	0	344
08:30 AM	0	203	1	0	0	0	0	1	0	118	0	0	1	0	1	0	325
08:45 AM	1	101	0	0	0	0	0	0	1	140	0	0	0	0	1	0	244
Total	1	698	2	0	3	0	2	3	3	442	3	0	1	0	5	0	1163
04:00 PM	1	134	0	0	0	0	0	2	5	203	0	2	0	0	1	0	348
04:15 PM	0	127	0	0	0	0	0	0	7	146	1	0	0	0	4	0	285
04:30 PM	1	134	4	0	0	0	1	2	5	196	0	0	1	0	1	0	345
04:45 PM	2	142	0	0	0	0	1	0	1	130	0	0	0	0	1	0	277
Total	4	537	4	0	0	0	2	4	18	675	1	2	1	0	7	0	1255
05:00 PM	0	116	1	0	0	0	0	0	3	145	1	0	1	0	0	0	267
05:15 PM	3	154	0	0	0	0	1	0	0	158	0	0	0	0	0	0	316
05:30 PM	2	148	1	0	0	0	1	0	2	156	0	0	0	0	0	0	310
05:45 PM	0	137	0	0	0	0	1	0	2	157	0	0	1	0	0	0	298
Total	5	555	2	0	0	0	3	0	7	616	1	0	2	0	0	0	1191
Grand Total	11	2346	14	0	5	0	11	9	36	2130	5	5	8	0	17	0	4597
Apprch %	0.5	98.9	0.6	0	20	0	44	36	1.7	97.9	0.2	0.2	32	0	68	0	
Total %	0.2	51	0.3	0	0.1	0	0.2	0.2	0.8	46.3	0.1	0.1	0.2	0	0.4	0	
Passenger Vehicles	11	2262	14	0	5	0	11	9	35	2074	5	5	8	0	16	0	4455
% Passenger Vehicles	100	96.4	100	0	100	0	100	100	97.2	97.4	100	100	100	0	94.1	0	96.9
Heavy Vehicles	0	29	0	0	0	0	0	0	0	34	0	0	0	0	0	0	63
% Heavy Vehicles	0	1.2	0	0	0	0	0	0	0	1.6	0	0	0	0	0	0	1.4
Buses	0	55	0	0	0	0	0	0	1	22	0	0	0	0	1	0	79
% Buses	0	2.3	0	0	0	0	0	0	2.8	1	0	0	0	0	5.9	0	1.7

Short Counts

File Name : orangeburg rd @ cone-claussen st
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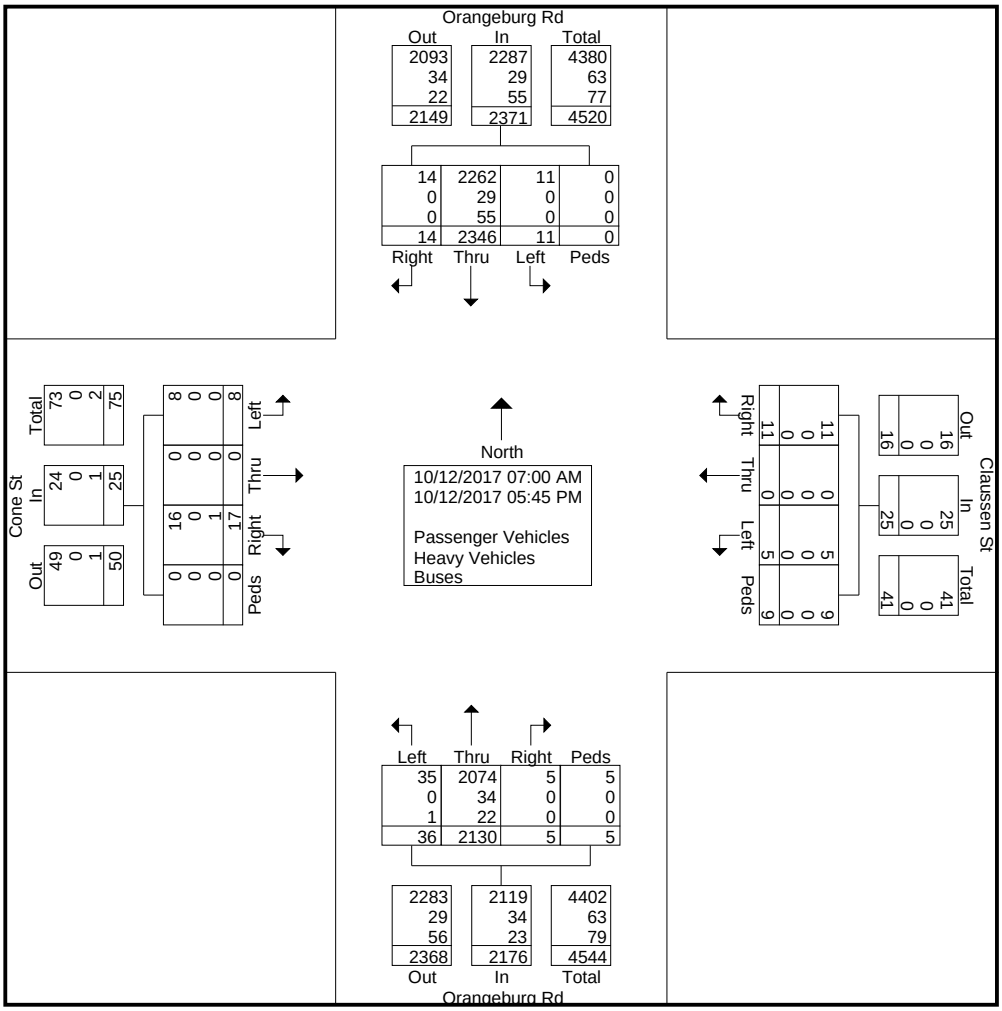
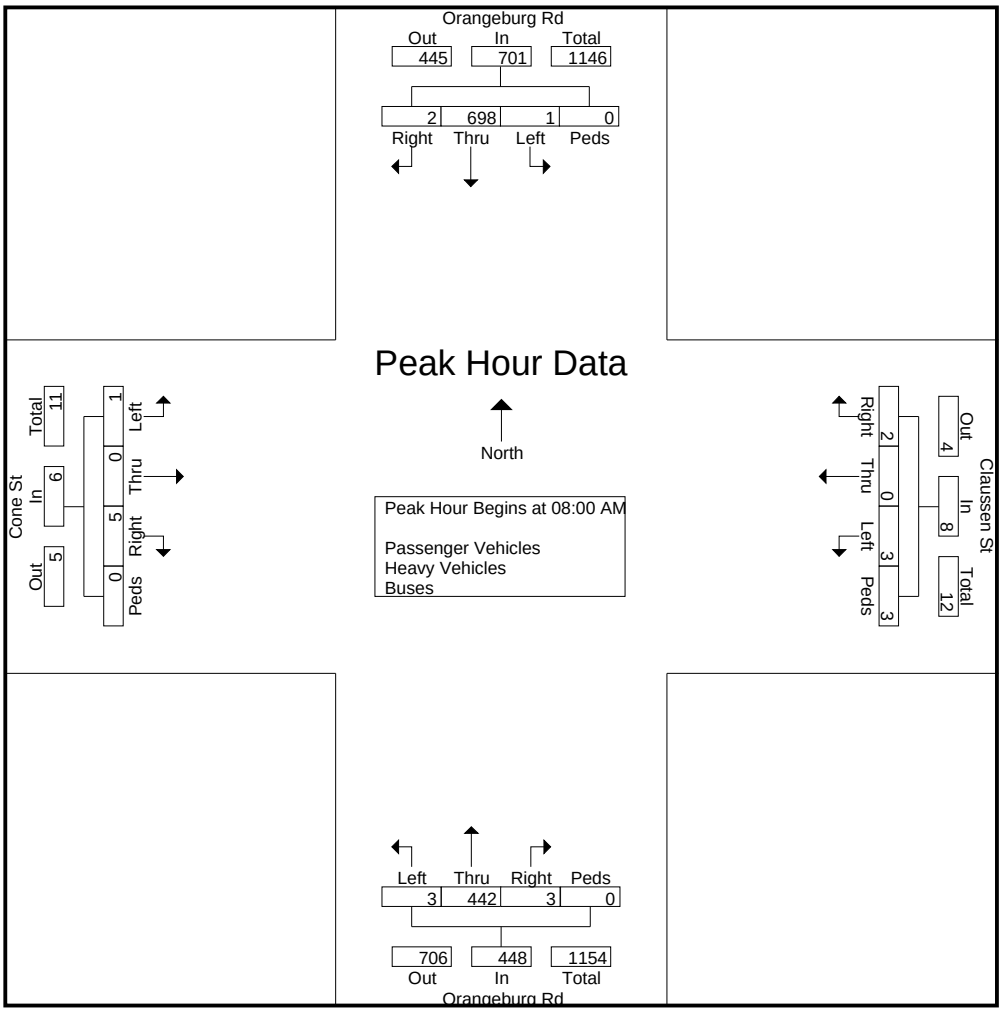


Short Counts

File Name : orangeburg rd @ cone-claussen st
Site Code :
Start Date : 10/12/2017
Page No : 3

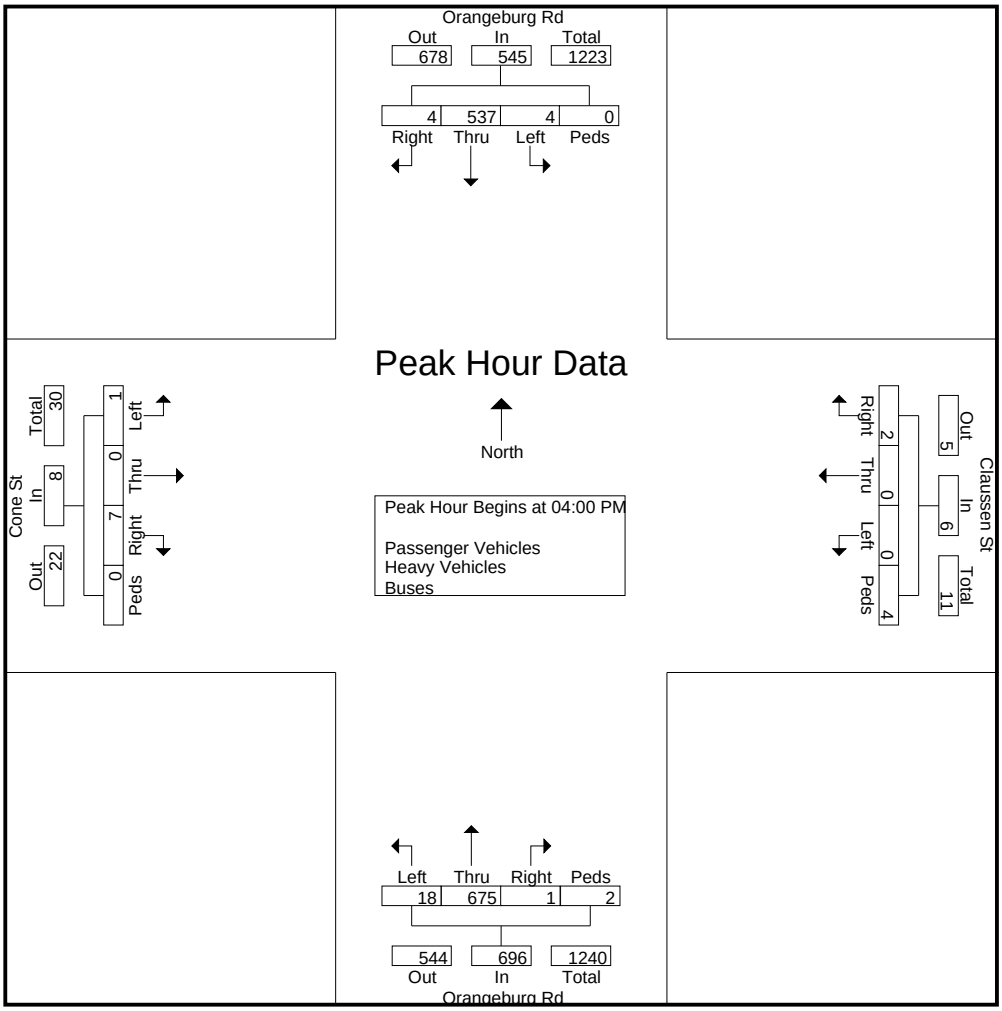
	Orangeburg Rd From North					Claussen St From East					Orangeburg Rd From South					Cone St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	158	**1**	0	159	1	0	**2**	**1**	**4**	**1**	85	0	0	86	0	0	1	0	1	250
08:15 AM	0	**236**	0	0	**236**	**2**	0	0	1	3	1	99	**3**	0	103	0	0	**2**	0	**2**	**344**
08:30 AM	0	203	1	0	204	0	0	0	1	1	0	118	0	0	118	**1**	0	1	0	2	325
08:45 AM	**1**	101	0	0	102	0	0	0	0	0	1	**140**	0	0	**141**	0	0	1	0	1	244
Total Volume	1	698	2	0	701	3	0	2	3	8	3	442	3	0	448	1	0	5	0	6	1163
% App. Total	0.1	99.6	0.3	0		37.5	0	25	37.5		0.7	98.7	0.7	0		16.7	0	83.3	0		
PHF	.250	.739	.500	.000	.743	.375	.000	.250	.750	.500	.750	.789	.250	.000	.794	.250	.000	.625	.000	.750	.845



Short Counts

File Name : orangeburg rd @ cone-claussen st
Site Code :
Start Date : 10/12/2017
Page No : 4

	Orangeburg Rd From North					Claussen St From East					Orangeburg Rd From South					Cone St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	134	0	0	135	0	0	0	**2**	2	5	**203**	0	**2**	**210**	0	0	1	0	1	**348**
04:15 PM	0	127	0	0	127	0	0	0	0	0	**7**	146	**1**	0	154	0	0	**4**	0	**4**	285
04:30 PM	1	134	**4**	0	139	0	0	**1**	2	**3**	5	196	0	0	201	**1**	0	1	0	2	345
04:45 PM	**2**	**142**	0	0	**144**	0	0	1	0	1	1	130	0	0	131	0	0	1	0	1	277
Total Volume	4	537	4	0	545	0	0	2	4	6	18	675	1	2	696	1	0	7	0	8	1255
% App. Total	0.7	98.5	0.7	0		0	0	33.3	66.7		2.6	97	0.1	0.3		12.5	0	87.5	0		
PHF	.500	.945	.250	.000	.946	.000	.000	.500	.500	.500	.643	.831	.250	.250	.829	.250	.000	.438	.000	.500	.902



INTERSECTION VOLUME DEVELOPMENT

Orangeburg Road at Central Avenue
AM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Central Avenue Eastbound			Central Avenue Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	47	210	127	94	373	88	98	232	71	256	157	57
Pedestrians		0			0			0			0	
Heavy Vehicle %		2.6%			4.5%			2.2%			2.0%	
Peak Hour Factor		0.76			0.90			0.84			0.79	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	54	241	146	108	428	101	112	266	81	294	180	65
New Project Trips												
Trip Distribution IN					20%				5%	30%		
Trip Distribution OUT	5%	20%	30%									
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	7	29	44	0	10	0	0	0	2	14	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	7	29	44	0	10	0	0	0	2	14	0	0
2021 Buildout Total	**61**	**270**	**190**	**108**	**438**	**101**	**112**	**266**	**83**	**308**	**180**	**65**

PM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Central Avenue Eastbound			Central Avenue Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	112	297	172	118	269	157	175	324	61	226	310	62
Pedestrians		0			2			0			2	
Heavy Vehicle %		2.6%			4.5%			2.2%			2.0%	
Peak Hour Factor		0.94			0.94			0.92			0.92	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	129	341	197	135	309	180	201	372	70	259	356	71
New Project Trips												
Trip Distribution IN					20%				5%	30%		
Trip Distribution OUT	5%	20%	30%									
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	5	19	28	0	32	0	0	0	9	48	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	5	19	28	0	32	0	0	0	9	48	0	0
2021 Buildout Total	**134**	**360**	**225**	**135**	**341**	**180**	**201**	**372**	**79**	**307**	**356**	**71**

INTERSECTION VOLUME DEVELOPMENT

Orangeburg Road at Claussen Street
AM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			- Eastbound			Claussen Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	443	3	1	698	0	0	0	0	3	0	2
Pedestrians		0			0			0			3	
Heavy Vehicle %		2.6%			3.5%			0.0%			0.0%	
Peak Hour Factor		0.79			0.74			0.00			0.42	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	0	508	3	1	801	0	0	0	0	3	0	2
New Project Trips												
Trip Distribution IN					55%							
Trip Distribution OUT		55%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	80	0	0	26	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	80	0	0	26	0	0	0	0	0	0	0
2021 Buildout Total	**0**	**588**	**3**	**1**	**827**	**0**	**0**	**0**	**0**	**3**	**0**	**2**

PM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			- Eastbound			Claussen Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	676	1	4	537	0	0	0	0	0	0	2
Pedestrians		2			0			0			6	
Heavy Vehicle %		2.6%			3.5%			0.0%			0.0%	
Peak Hour Factor		0.83			0.95			0.50			0.50	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	0	776	1	5	616	0	0	0	0	0	0	2
New Project Trips												
Trip Distribution IN					55%							
Trip Distribution OUT		55%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	52	0	0	89	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	52	0	0	89	0	0	0	0	0	0	0
2021 Buildout Total	**0**	**828**	**1**	**5**	**705**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

INTERSECTION VOLUME DEVELOPMENT

Orangeburg Road at Cone Lane
AM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Cone Lane Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	3	442	0	0	701	3	1	0	5	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		2.6%			3.5%			4.0%			0.0%	
Peak Hour Factor		0.79			0.74			0.75			0.00	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	3	507	0	0	804	3	1	0	6	0	0	0
New Project Trips												
Trip Distribution IN					55%							
Trip Distribution OUT		55%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	80	0	0	26	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	80	0	0	26	0	0	0	0	0	0	0
2021 Buildout Total	**3**	**587**	**0**	**0**	**830**	**3**	**1**	**0**	**6**	**0**	**0**	**0**

PM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Cone Lane Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	18	675	0	0	537	4	1	0	7	0	0	0
Pedestrians		2			0			0			0	
Heavy Vehicle %		2.6%			3.5%			4.0%			0.0%	
Peak Hour Factor		0.83			0.95			0.50			0.00	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	21	775	0	0	616	5	1	0	8	0	0	0
New Project Trips												
Trip Distribution IN					55%							
Trip Distribution OUT		55%										
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	52	0	0	89	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	52	0	0	89	0	0	0	0	0	0	0
2021 Buildout Total	**21**	**827**	**0**	**0**	**705**	**5**	**1**	**0**	**8**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT

Orangeburg Road at Julius Street
AM PEAK HOUR

Description	Orangeburg Street Northbound			Orangeburg Street Southbound			- Eastbound			Julius Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	446	1	3	699	0	0	0	0	2	0	1
Pedestrians		0			0			0			1	
Heavy Vehicle %		2.3%			3.5%			0.0%			0.0%	
Peak Hour Factor		0.87			0.73			0.00			0.38	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	0	512	1	3	802	0	0	0	0	2	0	1
New Project Trips												
Trip Distribution IN		45%										
Trip Distribution OUT					45%							
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	22	0	0	65	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	22	0	0	65	0	0	0	0	0	0	0
2021 Buildout Total	**0**	**534**	**1**	**3**	**867**	**0**	**0**	**0**	**0**	**2**	**0**	**1**

PM PEAK HOUR

Description	Orangeburg Street Northbound			Orangeburg Street Southbound			- Eastbound			Julius Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	685	4	1	541	0	0	0	0	2	0	3
Pedestrians		4			1			0			3	
Heavy Vehicle %		2.3%			3.5%			0.0%			0.0%	
Peak Hour Factor		0.81			0.99			0.00			0.42	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2021 Background Traffic	0	786	5	1	621	0	0	0	0	2	0	3
New Project Trips												
Trip Distribution IN		45%										
Trip Distribution OUT					45%							
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	0	72	0	0	42	0	0	0	0	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	72	0	0	42	0	0	0	0	0	0	0
2021 Buildout Total	**0**	**858**	**5**	**1**	**663**	**0**	**0**	**0**	**0**	**2**	**0**	**3**

INTERSECTION VOLUME DEVELOPMENT

Orangeburg Road at Site Driveway #1
AM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Site Driveway #1 Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 AM Volumes	0	447	0	0	706	0	0	0	0	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		2.6%			3.5%			2.0%			2.0%	
Peak Hour Factor		0.79			0.74			0.90			0.90	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic												
2021 Background Traffic	0	513	0	0	810	0	0	0	0	0	0	0
New Project Trips												
Trip Distribution IN	45%					55%						
Trip Distribution OUT							55%		45%			
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	22	0	0	0	0	26	80	0	65	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	22	0	0	0	0	26	80	0	65	0	0	0
2021 Buildout Total	**22**	**513**	**0**	**0**	**810**	**26**	**80**	**0**	**65**	**0**	**0**	**0**

PM PEAK HOUR

Description	Orangeburg Road Northbound			Orangeburg Road Southbound			Site Driveway #1 Eastbound			- Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2017 PM Volumes	0	688	0	0	544	0	0	0	0	0	0	0
Pedestrians		0			0			0			0	
Heavy Vehicle %		2.6%			3.5%			2.0%			2.0%	
Peak Hour Factor		0.83			0.95			0.90			0.90	
Annual Growth Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Growth Factor	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
Approved Development Traffic												
2021 Background Traffic	0	789	0	0	624	0	0	0	0	0	0	0
New Project Trips												
Trip Distribution IN	45%					55%						
Trip Distribution OUT							55%		45%			
Pass-by Project Trips												
Trip Distribution IN												
Trip Distribution OUT												
New Trips	72	0	0	0	0	89	52	0	42	0	0	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	72	0	0	0	0	89	52	0	42	0	0	0
2021 Buildout Total	**72**	**789**	**0**	**0**	**624**	**89**	**52**	**0**	**42**	**0**	**0**	**0**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	232	71	256	157	57	47	210	127	94	373	88
Future Volume (veh/h)	98	232	71	256	157	57	47	210	127	94	373	88
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	117	276	0	324	199	72	62	276	167	104	414	98
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.76	0.76	0.76	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	342	335	285	383	333	121	223	349	211	270	471	112
Arrive On Green	0.07	0.18	0.00	0.15	0.26	0.26	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1307	473	1757	1078	652	1723	1415	335
Grp Volume(v), veh/h	117	276	0	324	0	271	62	0	443	104	0	512
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1779	1757	0	1730	1723	0	1750
Q Serve(g_s), s	4.7	12.8	0.0	13.0	0.0	12.0	2.0	0.0	20.9	3.5	0.0	24.7
Cycle Q Clear(g_c), s	4.7	12.8	0.0	13.0	0.0	12.0	2.0	0.0	20.9	3.5	0.0	24.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.38	1.00		0.19
Lane Grp Cap(c), veh/h	342	335	285	383	0	454	223	0	560	270	0	583
V/C Ratio(X)	0.34	0.82	0.00	0.85	0.00	0.60	0.28	0.00	0.79	0.38	0.00	0.88
Avail Cap(c_a), veh/h	476	697	592	383	0	665	397	0	560	425	0	583
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	35.4	0.0	24.8	0.0	29.3	21.5	0.0	27.5	20.7	0.0	28.2
Incr Delay (d2), s/veh	0.6	5.1	0.0	16.0	0.0	1.3	0.7	0.0	10.9	0.9	0.0	17.0
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	2.3	7.1	0.0	7.9	0.0	6.0	1.0	0.0	11.7	1.7	0.0	14.7
LnGrp Delay(d),s/veh	27.6	40.4	0.0	40.8	0.0	30.6	22.1	0.0	38.4	21.6	0.0	45.2
LnGrp LOS	C	D		D		C	C		D	C		D
Approach Vol, veh/h		393			595			505			616	
Approach Delay, s/veh		36.6			36.1			36.4			41.2	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	35.8	20.0	22.6	11.9	35.0	13.3	29.3
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	13.6	29.0	* 13	33.5	13.6	29.0	* 13	33.5
Max Q Clear Time (g_c+I1), s	4.0	26.7	15.0	14.8	5.5	22.9	6.7	14.0
Green Ext Time (p_c), s	0.1	0.7	0.0	1.3	0.1	1.4	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.8
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	443	3	1	698
Future Vol, veh/h	3	2	443	3	1	698
Conflicting Peds, #/hr	0	3	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	42	42	79	79	74	74
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	7	5	561	4	1	943

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1508	566	0	0	565	0
Stage 1	563	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	133	524	-	-	997	-
Stage 1	570	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	133	523	-	-	997	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	378	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.2	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	190	997	-
HCM Lane V/C Ratio	-	-	0.063	0.001	-
HCM Control Delay (s)	-	-	25.2	8.6	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	446	1	3	699
Future Vol, veh/h	2	1	446	1	3	699
Conflicting Peds, #/hr	0	1	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	38	38	87	87	73	73
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	3	513	1	4	958

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1480	515	0	0	514	0
Stage 1	514	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	138	560	-	-	1041	-
Stage 1	600	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	137	560	-	-	1041	-
Mov Cap-2 Maneuver	137	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	369	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	183	1041	-
HCM Lane V/C Ratio	-	-	0.043	0.004	-
HCM Control Delay (s)	-	-	25.6	8.5	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	3	442	701	3
Future Vol, veh/h	1	5	3	442	701	3
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	75	75	79	79	74	74
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	1	7	4	559	947	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1516	949	951	0	-	0
Stage 1	949	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	130	313	718	-	-	-
Stage 1	373	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	129	313	718	-	-	-
Mov Cap-2 Maneuver	129	-	-	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	718	-	253	-	-
HCM Lane V/C Ratio	0.005	-	0.032	-	-
HCM Control Delay (s)	10	0	19.7	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	324	61	226	310	62	112	297	172	118	269	157
Future Volume (veh/h)	175	324	61	226	310	62	112	297	172	118	269	157
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	190	352	0	246	337	67	119	316	183	126	286	167
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	295	429	365	351	383	76	243	334	193	215	331	193
Arrive On Green	0.10	0.23	0.00	0.13	0.25	0.25	0.07	0.30	0.30	0.07	0.31	0.31
Sat Flow, veh/h	1774	1863	1583	1774	1509	300	1757	1096	635	1723	1071	626
Grp Volume(v), veh/h	190	352	0	246	0	404	119	0	499	126	0	453
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1808	1757	0	1730	1723	0	1697
Q Serve(g_s), s	7.6	17.1	0.0	9.9	0.0	20.4	4.4	0.0	26.8	4.7	0.0	24.0
Cycle Q Clear(g_c), s	7.6	17.1	0.0	9.9	0.0	20.4	4.4	0.0	26.8	4.7	0.0	24.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.37	1.00		0.37
Lane Grp Cap(c), veh/h	295	429	365	351	0	459	243	0	527	215	0	524
V/C Ratio(X)	0.64	0.82	0.00	0.70	0.00	0.88	0.49	0.00	0.95	0.59	0.00	0.86
Avail Cap(c_a), veh/h	360	656	557	374	0	636	379	0	527	342	0	524
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	34.8	0.0	24.9	0.0	34.1	23.6	0.0	32.3	24.4	0.0	31.0
Incr Delay (d2), s/veh	2.8	4.9	0.0	5.4	0.0	10.3	1.5	0.0	28.0	2.5	0.0	17.2
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	3.9	9.4	0.0	5.2	0.0	11.5	2.2	0.0	16.9	2.4	0.0	13.7
LnGrp Delay(d),s/veh	28.7	39.7	0.0	30.3	0.0	44.4	25.1	0.0	60.3	26.9	0.0	48.2
LnGrp LOS	C	D		C		D	C		E	C		D
Approach Vol, veh/h		542			650			618			579	
Approach Delay, s/veh		35.8			39.1			53.6			43.6	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	35.4	18.8	28.4	13.0	35.0	16.5	30.7
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	13.6	29.0	* 13	33.5	13.6	29.0	* 13	33.5
Max Q Clear Time (g_c+I1), s	6.4	26.0	11.9	19.1	6.7	28.8	9.6	22.4
Green Ext Time (p_c), s	0.1	0.8	0.1	1.6	0.2	0.1	0.2	1.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.2
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	676	1	4	537
Future Vol, veh/h	0	2	676	1	4	537
Conflicting Peds, #/hr	0	6	0	2	2	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	50	50	83	83	95	95
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	0	4	814	1	4	565

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1390	823	0	0	817	0
Stage 1	817	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	157	373	-	-	802	-
Stage 1	434	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	156	371	-	-	801	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	371	801	-
HCM Lane V/C Ratio	-	-	0.011	0.005	-
HCM Control Delay (s)	-	-	14.8	9.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	685	4	1	541
Future Vol, veh/h	2	3	685	4	1	541
Conflicting Peds, #/hr	0	3	0	4	4	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	42	42	81	81	99	99
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	7	846	5	1	546

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1401	856	0	0	855	0
Stage 1	853	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	154	357	-	-	776	-
Stage 1	418	-	-	-	-	-
Stage 2	579	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	153	355	-	-	773	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	579	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	773	-
HCM Lane V/C Ratio	-	-	0.051	0.001	-
HCM Control Delay (s)	-	-	21.4	9.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	7	18	675	537	4
Future Vol, veh/h	1	7	18	675	537	4
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	50	50	83	83	95	95
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	2	14	22	813	565	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1424	567	569	0	-	0
Stage 1	567	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	148	519	998	-	-	-
Stage 1	564	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	519	998	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	412	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	998	-	390	-	-
HCM Lane V/C Ratio	0.022	-	0.041	-	-
HCM Control Delay (s)	8.7	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	266	81	294	180	65	54	241	146	108	428	101
Future Volume (veh/h)	112	266	81	294	180	65	54	241	146	108	428	101
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	133	317	0	372	228	82	71	317	192	120	476	112
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.76	0.76	0.76	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	324	330	280	373	351	126	177	336	203	214	456	107
Arrive On Green	0.07	0.18	0.00	0.16	0.27	0.27	0.06	0.31	0.31	0.07	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1309	471	1757	1077	652	1723	1417	333
Grp Volume(v), veh/h	133	317	0	372	0	310	71	0	509	120	0	588
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1780	1757	0	1730	1723	0	1751
Q Serve(g_s), s	5.5	15.2	0.0	14.4	0.0	13.9	2.4	0.0	25.8	4.2	0.0	28.9
Cycle Q Clear(g_c), s	5.5	15.2	0.0	14.4	0.0	13.9	2.4	0.0	25.8	4.2	0.0	28.9
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.38	1.00		0.19
Lane Grp Cap(c), veh/h	324	330	280	373	0	477	177	0	539	214	0	563
V/C Ratio(X)	0.41	0.96	0.00	1.00	0.00	0.65	0.40	0.00	0.94	0.56	0.00	1.04
Avail Cap(c_a), veh/h	324	330	280	373	0	477	197	0	539	216	0	563
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	36.7	0.0	25.8	0.0	29.1	23.1	0.0	30.2	22.9	0.0	30.5
Incr Delay (d2), s/veh	0.8	39.4	0.0	45.9	0.0	3.1	1.5	0.0	27.2	3.2	0.0	50.1
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	2.7	11.4	0.0	6.9	0.0	7.2	1.2	0.0	16.4	2.2	0.0	21.6
LnGrp Delay(d),s/veh	28.7	76.1	0.0	71.7	0.0	32.2	24.6	0.0	57.4	26.1	0.0	80.6
LnGrp LOS	C	E		E		C	C		E	C		F
Approach Vol, veh/h		450			682			580			708	
Approach Delay, s/veh		62.1			53.8			53.4			71.3	
Approach LOS		E			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	34.9	21.2	22.4	12.3	34.0	13.0	30.6
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	28.0	* 14	15.9	6.0	28.0	* 6.2	24.1
Max Q Clear Time (g_c+I1), s	4.4	30.9	16.4	17.2	6.2	27.8	7.5	15.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.4
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	508	3	1	801
Future Vol, veh/h	3	2	508	3	1	801
Conflicting Peds, #/hr	0	3	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	42	42	79	79	74	74
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	7	5	643	4	1	1082

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1729	648	0	0	647	0
Stage 1	645	-	-	-	-	-
Stage 2	1084	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	97	470	-	-	929	-
Stage 1	522	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	97	469	-	-	929	-
Mov Cap-2 Maneuver	97	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	324	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	142	929	-
HCM Lane V/C Ratio	-	-	0.084	0.001	-
HCM Control Delay (s)	-	-	32.7	8.9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	512	1	3	802
Future Vol, veh/h	2	1	512	1	3	802
Conflicting Peds, #/hr	0	1	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	38	38	87	87	73	73
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	3	589	1	4	1099

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1697	591	0	0	590	0
Stage 1	590	-	-	-	-	-
Stage 2	1107	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	102	507	-	-	976	-
Stage 1	554	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	101	507	-	-	976	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	316	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	138	976	-
HCM Lane V/C Ratio	-	-	0.057	0.004	-
HCM Control Delay (s)	-	-	32.7	8.7	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	3	507	804	3
Future Vol, veh/h	1	6	3	507	804	3
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	75	75	79	79	74	74
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	1	8	4	642	1086	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1738	1088	1090	0	-	0
Stage 1	1088	-	-	-	-	-
Stage 2	650	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	95	260	636	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	94	260	636	-	-	-
Mov Cap-2 Maneuver	94	-	-	-	-	-
Stage 1	317	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	636	-	208	-	-
HCM Lane V/C Ratio	0.006	-	0.045	-	-
HCM Control Delay (s)	10.7	0	23.1	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	372	70	259	356	71	129	341	197	135	309	180
Future Volume (veh/h)	201	372	70	259	356	71	129	341	197	135	309	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	218	404	0	282	387	77	137	363	210	144	329	191
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	244	422	358	297	376	75	206	353	204	185	346	201
Arrive On Green	0.09	0.23	0.00	0.12	0.25	0.25	0.06	0.32	0.32	0.06	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1508	300	1757	1096	634	1723	1074	623
Grp Volume(v), veh/h	218	404	0	282	0	464	137	0	573	144	0	520
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1808	1757	0	1730	1723	0	1697
Q Serve(g_s), s	9.0	20.4	0.0	11.2	0.0	23.7	4.9	0.0	30.6	5.3	0.0	28.4
Cycle Q Clear(g_c), s	9.0	20.4	0.0	11.2	0.0	23.7	4.9	0.0	30.6	5.3	0.0	28.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.37	1.00		0.37
Lane Grp Cap(c), veh/h	244	422	358	297	0	451	206	0	557	185	0	547
V/C Ratio(X)	0.89	0.96	0.00	0.95	0.00	1.03	0.66	0.00	1.03	0.78	0.00	0.95
Avail Cap(c_a), veh/h	244	422	358	297	0	451	206	0	557	185	0	547
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	36.3	0.0	27.4	0.0	35.7	24.2	0.0	32.2	24.5	0.0	31.5
Incr Delay (d2), s/veh	31.3	33.2	0.0	39.0	0.0	49.9	7.7	0.0	45.5	19.0	0.0	28.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	14.3	0.0	8.9	0.0	18.0	2.8	0.0	21.6	3.5	0.0	17.6
LnGrp Delay(d),s/veh	58.8	69.5	0.0	66.4	0.0	85.5	32.0	0.0	77.7	43.5	0.0	59.6
LnGrp LOS	E	E		E		F	C		F	D		E
Approach Vol, veh/h		622			746			710			664	
Approach Delay, s/veh		65.7			78.3			68.9			56.1	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	36.6	18.0	28.0	12.4	36.6	15.8	30.2
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	30.6	* 11	21.5	6.0	30.6	* 9	23.7
Max Q Clear Time (g_c+I1), s	6.9	30.4	13.2	22.4	7.3	32.6	11.0	25.7
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.6
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	776	1	5	616
Future Vol, veh/h	0	2	776	1	5	616
Conflicting Peds, #/hr	0	6	0	2	2	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	50	50	83	83	95	95
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	0	4	935	1	5	648

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1596	944	0	0	938	0
Stage 1	938	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	117	318	-	-	722	-
Stage 1	381	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	115	316	-	-	721	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	316	721	-
HCM Lane V/C Ratio	-	-	0.013	0.007	-
HCM Control Delay (s)	-	-	16.5	10	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	786	5	1	621
Future Vol, veh/h	2	3	786	5	1	621
Conflicting Peds, #/hr	0	3	0	4	4	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	42	42	81	81	99	99
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	7	970	6	1	627

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1606	980	0	0	980	0
Stage 1	977	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	116	303	-	-	696	-
Stage 1	365	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	115	301	-	-	694	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	363	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	183	694	-
HCM Lane V/C Ratio	-	-	0.065	0.001	-
HCM Control Delay (s)	-	-	26	10.2	0
HCM Lane LOS	-	-	D	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	8	21	775	616	5
Future Vol, veh/h	1	8	21	775	616	5
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	50	50	83	83	95	95
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	2	16	25	934	648	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1635	651	653	0	-	0
Stage 1	651	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	110	465	929	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	359	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	104	465	929	-	-	-
Mov Cap-2 Maneuver	104	-	-	-	-	-
Stage 1	486	-	-	-	-	-
Stage 2	359	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	929	-	336	-	-
HCM Lane V/C Ratio	0.027	-	0.054	-	-
HCM Control Delay (s)	9	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	266	83	308	180	65	61	270	190	108	438	101
Future Volume (veh/h)	112	266	83	308	180	65	61	270	190	108	438	101
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	133	317	0	390	228	82	80	355	250	120	487	112
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.76	0.76	0.76	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	324	330	280	373	351	126	181	314	221	193	455	105
Arrive On Green	0.07	0.18	0.00	0.16	0.27	0.27	0.06	0.31	0.31	0.07	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1309	471	1757	1009	710	1723	1424	328
Grp Volume(v), veh/h	133	317	0	390	0	310	80	0	605	120	0	599
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1780	1757	0	1719	1723	0	1752
Q Serve(g_s), s	5.5	15.2	0.0	14.4	0.0	13.9	2.7	0.0	28.0	4.2	0.0	28.7
Cycle Q Clear(g_c), s	5.5	15.2	0.0	14.4	0.0	13.9	2.7	0.0	28.0	4.2	0.0	28.7
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.41	1.00		0.19
Lane Grp Cap(c), veh/h	324	330	280	373	0	477	181	0	536	193	0	559
V/C Ratio(X)	0.41	0.96	0.00	1.05	0.00	0.65	0.44	0.00	1.13	0.62	0.00	1.07
Avail Cap(c_a), veh/h	324	330	280	373	0	477	197	0	536	195	0	559
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	36.7	0.0	25.8	0.0	29.1	23.1	0.0	30.9	23.1	0.0	30.6
Incr Delay (d2), s/veh	0.8	39.4	0.0	59.1	0.0	3.1	1.7	0.0	79.7	5.9	0.0	58.5
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	2.7	11.4	0.0	8.2	0.0	7.2	1.4	0.0	25.0	2.3	0.0	22.8
LnGrp Delay(d),s/veh	28.7	76.1	0.0	84.9	0.0	32.2	24.8	0.0	110.7	29.0	0.0	89.1
LnGrp LOS	C	E		F		C	C		F	C		F
Approach Vol, veh/h		450			700			685			719	
Approach Delay, s/veh		62.1			61.6			100.6			79.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	34.7	21.2	22.4	12.3	34.0	13.0	30.6
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	28.0	* 14	15.9	6.0	28.0	* 6.2	24.1
Max Q Clear Time (g_c+I1), s	4.7	30.7	16.4	17.2	6.2	30.0	7.5	15.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	266	83	308	180	65	61	270	190	108	438	101
Future Volume (veh/h)	112	266	83	308	180	65	61	270	190	108	438	101
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1845	1810	1810	1900
Adj Flow Rate, veh/h	133	317	0	390	228	82	80	355	250	120	487	112
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.76	0.76	0.76	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	339	336	370	392	366	132	167	598	780	311	476	109
Arrive On Green	0.07	0.18	0.00	0.17	0.28	0.28	0.05	0.32	0.32	0.06	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1309	471	1757	1845	1568	1723	1424	328
Grp Volume(v), veh/h	133	317	0	390	0	310	80	355	250	120	0	599
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1780	1757	1845	1568	1723	0	1752
Q Serve(g_s), s	6.0	16.7	0.0	17.2	0.0	15.1	2.9	16.0	9.5	4.6	0.0	33.2
Cycle Q Clear(g_c), s	6.0	16.7	0.0	17.2	0.0	15.1	2.9	16.0	9.5	4.6	0.0	33.2
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	339	336	370	392	0	498	167	598	780	311	0	585
V/C Ratio(X)	0.39	0.94	0.00	0.99	0.00	0.62	0.48	0.59	0.32	0.39	0.00	1.02
Avail Cap(c_a), veh/h	339	336	370	392	0	498	179	598	780	323	0	585
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	40.2	0.0	27.2	0.0	31.2	25.4	28.1	14.9	21.5	0.0	33.1
Incr Delay (d2), s/veh	0.7	34.8	0.0	43.7	0.0	2.4	2.1	4.3	1.1	0.8	0.0	43.2
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	3.0	11.9	0.0	13.1	0.0	7.7	1.5	8.8	4.3	2.2	0.0	23.0
LnGrp Delay(d),s/veh	30.8	75.0	0.0	70.9	0.0	33.6	27.5	32.4	16.0	22.3	0.0	76.3
LnGrp LOS	C	E		E		C	C	C	B	C		F
Approach Vol, veh/h		450			700			685			719	
Approach Delay, s/veh		62.0			54.4			25.8			67.3	
Approach LOS		E			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	39.2	24.0	24.4	12.7	38.2	14.1	34.3
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	33.2	* 17	17.9	7.0	32.2	* 7.3	27.8
Max Q Clear Time (g_c+I1), s	4.9	35.2	19.2	18.7	6.6	18.0	8.0	17.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Notes

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	588	3	1	827
Future Vol, veh/h	3	2	588	3	1	827
Conflicting Peds, #/hr	0	3	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	42	42	79	79	74	74
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	7	5	744	4	1	1118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1866	749	0	0	748	0
Stage 1	746	-	-	-	-	-
Stage 2	1120	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	80	412	-	-	852	-
Stage 1	469	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	411	-	-	852	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	312	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	118	852	-
HCM Lane V/C Ratio	-	-	0.101	0.002	-
HCM Control Delay (s)	-	-	38.9	9.2	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	1	534	1	3	867
Future Vol, veh/h	2	1	534	1	3	867
Conflicting Peds, #/hr	0	1	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	38	38	87	87	73	73
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	3	614	1	4	1188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1811	616	0	0	615	0
Stage 1	615	-	-	-	-	-
Stage 2	1196	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	86	491	-	-	955	-
Stage 1	539	-	-	-	-	-
Stage 2	287	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	85	491	-	-	955	-
Mov Cap-2 Maneuver	203	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	287	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	252	955	-
HCM Lane V/C Ratio	-	-	0.031	0.004	-
HCM Control Delay (s)	-	-	19.7	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	6	3	587	830	3
Future Vol, veh/h	1	6	3	587	830	3
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	75	75	79	79	74	74
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	1	8	4	743	1122	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1875	1124	1126	0	-	0
Stage 1	1124	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	78	248	617	-	-	-
Stage 1	308	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	248	617	-	-	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	305	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	617	-	188	-	-
HCM Lane V/C Ratio	0.006	-	0.05	-	-
HCM Control Delay (s)	10.9	0	25.1	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	80	65	22	513	810	26
Future Vol, veh/h	80	65	22	513	810	26
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	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	74	74
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	89	72	28	649	1095	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1800	1095	1130	0	-	0
Stage 1	1095	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	~ 88	260	615	-	-	-
Stage 1	321	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 84	260	615	-	-	-
Mov Cap-2 Maneuver	~ 84	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	123.6	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	615	-	84	260	-	-
HCM Lane V/C Ratio	0.045	-	1.058	0.278	-	-
HCM Control Delay (s)	11.1	-	204.4	24.1	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	6.1	1.1	-	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	372	79	307	356	71	134	360	225	135	341	180
Future Volume (veh/h)	201	372	79	307	356	71	134	360	225	135	341	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1900	1810	1810	1900
Adj Flow Rate, veh/h	218	404	0	334	387	77	143	383	239	144	363	191
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	244	422	358	297	376	75	187	342	214	185	360	189
Arrive On Green	0.09	0.23	0.00	0.12	0.25	0.25	0.06	0.32	0.32	0.06	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1508	300	1757	1062	663	1723	1116	587
Grp Volume(v), veh/h	218	404	0	334	0	464	143	0	622	144	0	554
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1808	1757	0	1725	1723	0	1704
Q Serve(g_s), s	9.0	20.4	0.0	11.2	0.0	23.7	5.2	0.0	30.6	5.3	0.0	30.6
Cycle Q Clear(g_c), s	9.0	20.4	0.0	11.2	0.0	23.7	5.2	0.0	30.6	5.3	0.0	30.6
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.38	1.00		0.34
Lane Grp Cap(c), veh/h	244	422	358	297	0	451	187	0	556	185	0	549
V/C Ratio(X)	0.89	0.96	0.00	1.13	0.00	1.03	0.77	0.00	1.12	0.78	0.00	1.01
Avail Cap(c_a), veh/h	244	422	358	297	0	451	187	0	556	185	0	549
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	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	36.3	0.0	28.4	0.0	35.7	24.5	0.0	32.2	24.5	0.0	32.2
Incr Delay (d2), s/veh	31.3	33.2	0.0	90.5	0.0	49.9	17.1	0.0	75.3	19.0	0.0	40.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	14.3	0.0	9.7	0.0	18.0	3.4	0.0	26.1	3.5	0.0	20.5
LnGrp Delay(d),s/veh	58.8	69.5	0.0	118.9	0.0	85.5	41.6	0.0	107.5	43.5	0.0	73.0
LnGrp LOS	E	E		F		F	D		F	D		F
Approach Vol, veh/h		622			798			765			698	
Approach Delay, s/veh		65.7			99.5			95.2			66.9	
Approach LOS		E			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	36.6	18.0	28.0	12.4	36.6	15.8	30.2
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	30.6	* 11	21.5	6.0	30.6	* 9	23.7
Max Q Clear Time (g_c+I1), s	7.2	32.6	13.2	22.4	7.3	32.6	11.0	25.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	83.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	372	79	307	356	71	134	360	225	135	341	180
Future Volume (veh/h)	201	372	79	307	356	71	134	360	225	135	341	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1845	1845	1845	1810	1810	1900
Adj Flow Rate, veh/h	218	404	0	334	387	77	143	383	239	144	363	191
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	5	5	5
Cap, veh/h	261	412	445	334	401	80	177	583	721	283	354	186
Arrive On Green	0.10	0.22	0.00	0.14	0.27	0.27	0.06	0.32	0.32	0.06	0.32	0.32
Sat Flow, veh/h	1774	1863	1583	1774	1508	300	1757	1845	1563	1723	1116	587
Grp Volume(v), veh/h	218	404	0	334	0	464	143	383	239	144	0	554
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	0	1808	1757	1845	1563	1723	0	1704
Q Serve(g_s), s	9.5	21.6	0.0	14.5	0.0	25.3	5.5	17.9	9.7	5.7	0.0	31.7
Cycle Q Clear(g_c), s	9.5	21.6	0.0	14.5	0.0	25.3	5.5	17.9	9.7	5.7	0.0	31.7
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	261	412	445	334	0	481	177	583	721	283	0	540
V/C Ratio(X)	0.83	0.98	0.00	1.00	0.00	0.96	0.81	0.66	0.33	0.51	0.00	1.03
Avail Cap(c_a), veh/h	261	412	445	334	0	481	177	583	721	283	0	540
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	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	38.7	0.0	27.4	0.0	36.2	26.2	29.5	17.1	23.1	0.0	34.2
Incr Delay (d2), s/veh	20.3	39.3	0.0	48.9	0.0	32.0	23.2	5.7	1.2	1.5	0.0	45.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	15.6	0.0	11.6	0.0	16.9	3.8	10.1	4.4	2.8	0.0	21.7
LnGrp Delay(d),s/veh	49.0	78.1	0.0	76.3	0.0	68.2	49.4	35.2	18.4	24.6	0.0	79.6
LnGrp LOS	D	E		E		E	D	D	B	C		F
Approach Vol, veh/h		622			798			765			698	
Approach Delay, s/veh		67.9			71.6			32.6			68.3	
Approach LOS		E			E			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	37.7	21.3	28.6	12.5	37.6	16.8	33.1
Change Period (Y+Rc), s	6.4	6.0	* 6.8	6.5	6.4	6.0	* 6.8	6.5
Max Green Setting (Gmax), s	6.0	31.7	* 15	22.1	6.1	31.6	* 10	26.6
Max Q Clear Time (g_c+I1), s	7.5	33.7	16.5	23.6	7.7	19.9	11.5	27.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.6
HCM 2010 LOS	E

Notes

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	828	1	5	705
Future Vol, veh/h	0	2	828	1	5	705
Conflicting Peds, #/hr	0	6	0	2	2	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	50	50	83	83	95	95
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	0	4	998	1	5	742

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1753	1007	0	0	1001	0
Stage 1	1001	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	94	292	-	-	684	-
Stage 1	355	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	93	290	-	-	683	-
Mov Cap-2 Maneuver	93	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	466	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	290	683	-
HCM Lane V/C Ratio	-	-	0.014	0.008	-
HCM Control Delay (s)	-	-	17.6	10.3	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	3	858	5	1	663
Future Vol, veh/h	2	3	858	5	1	663
Conflicting Peds, #/hr	0	3	0	4	4	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	42	42	81	81	99	99
Heavy Vehicles, %	2	2	2	2	4	4
Mvmt Flow	5	7	1059	6	1	670

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1738	1069	0	0	1069	0
Stage 1	1066	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	96	269	-	-	644	-
Stage 1	331	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	96	267	-	-	642	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	508	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	247	642	-
HCM Lane V/C Ratio	-	-	0.048	0.002	-
HCM Control Delay (s)	-	-	20.3	10.6	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	8	21	827	705	5
Future Vol, veh/h	1	8	21	827	705	5
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	50	50	83	83	95	95
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	2	16	25	996	742	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1791	745	747	0	-	0
Stage 1	745	-	-	-	-	-
Stage 2	1046	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	88	411	857	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	82	411	857	-	-	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	335	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	857	-	284	-	-
HCM Lane V/C Ratio	0.03	-	0.063	-	-
HCM Control Delay (s)	9.3	0	18.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	52	42	72	789	624	89
Future Vol, veh/h	52	42	72	789	624	89
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	-	-	175
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	83	83	95	95
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	58	47	87	951	657	94

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1782	657	751	0	-	0
Stage 1	657	-	-	-	-	-
Stage 2	1125	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	90	465	854	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	465	854	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	310	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	72.8	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	854	-	81	465	-	-
HCM Lane V/C Ratio	0.102	-	0.713	0.1	-	-
HCM Control Delay (s)	9.7	-	120.7	13.6	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	3.4	0.3	-	-