

Town of Thompson's Station  
Municipal Planning Commission  
Meeting Agenda  
September 25, 2018

**Meeting Called To Order**

**Pledge Of Allegiance**

**Minutes-**

**Consideration Of The Minutes Of The August 28, 2018 Meeting**

Documents:

[08282018 MINUTES.PDF](#)

**Public Comment**

**Planner Report**

**Unfinished Business:**

**1. Final Plat For The Creation Of 70 Single-Family Lots And Five (5) Open Space Lots Within Section 17 Of Tollgate Village (FP 2018- 013)**

Documents:

[ITEM 1 MEMO ON DEFERRAL SECTION 17.PDF](#)  
[ITEM 1 AUG STAFF REPORT ATTACH TO MEMO.PDF](#)  
[ITEM 1 TV FINAL PLAT SECTION 17.PDF](#)

**New Business:**

**2. Preliminary Plat For The Subdivision Of 69 Lots For The Development Of Avenue Downs Located At The Southeast Corner Of Critz Lane/Clayton Arnold Road (PP 2018-007)**

Documents:

[ITEM 2 STAFF REPORT FOR AVENUE DOWNS.PDF](#)  
[ITEM 2 PRELIMINARY PLAT AVENUE DOWNS.PDF](#)  
[ITEM 2 LANDSCAPE PLAN AVENUE DOWNS.PDF](#)  
[ITEM 2 REVISED TRAFFIC IMPACT STUDY.PDF](#)

**3. Final Plat For The Creation Of Three (3) Single-Family Lots Within Section 18A Of Tollgate Village (FP 2018-016)**

Documents:

[ITEM 3 STAFF REPORT TV 18A.PDF](#)  
[ITEM 3 TV FINAL PLAT SECTION 18A.PDF](#)

**4. LDO Amendment To Reduce The Garage As Required In Section 4.10 Use Residential Property Standards (LDO Amend 2018-006)**

Documents:

ITEM 4 STAFF REPORT LDO GARAGE.PDF

**Adjourn**

*This meeting will be held at 7:00 p.m. at the Thompson's Station Community Center  
1555 Thompson's Station Rd West*

**Minutes of the Meeting**  
**of the Municipal Planning Commission**  
**of the Town of Thompson 's Station, Tennessee**  
**August 28 , 2018**

**Call to Order:**

The meeting of the Municipal Planning Commission of the Town of Thompson's Station was called to order at 7:00 p.m. on the 28<sup>nd</sup> day of August 2018 at the Thompson's Station Community Center with the required quorum. Members and staff in attendance were: Chairman Jack Elder; Vice Chairman Mike Roberts; Commissioner Shaun Alexander; Alderman Ben Dilks; Commissioner Trent Harris; Commissioner Tara Rumpler; Commissioner Bob Whitmer; Town Planner Wendy Deats, Town Clerk Jennifer Jones and Town Attorney Todd Moore.

**Pledge of Allegiance.**

**Minutes:**

The minutes of the July 24, 2018 meeting were previously submitted.

**Commissioner Whitmer made a motion to approve of the July 24, 2018 meeting minutes. The motion was seconded and carried unanimously.**

**Public Comment:**

None.

**Planner Report:**

**Littlebury** – The project is currently in SOP review. The Preliminary Plat application is anticipated to be on September's agenda.

**Avenue Downs** – Nothing has been submitted.

**Consideration of reducing garage standard** – The current standard in the LDO is 22 x 22, and Staff brought up the possibility of considering an amendment to this standard within LDO.

**New Business:**

- 1. Final Plat for the creation of 70 single-family lots and five (5) open space lots within section 17 of Tollgate Village (FP 2018-013).**

Mrs. Deats reviewed her report and recommends that the Planning Commission deny the final plat for the following reasons:

1. Sewer improvements as identified in the approval for the preliminary plat and development agreements are not complete.
2. Open space is not platted in accordance with Section 5.4.7.

Mrs. Deats also noted that should the Commission wish to approve the final plat, Staff recommends the Commission consider the contingencies listed within the staff report which include the following:

Page 2

1. Prior to the recordation of the final plat, a plat identifying all remaining open space shall be approved by the Town.
2. Prior to recordation of the final plat, all sewer improvements shall be completed and shall pass any necessary testing.
3. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$470,000 for roadways, drainage and erosion control with automatic renewal.
4. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$280,000 for sewer with automatic renewal.
5. All tree replacements shall be installed in accordance with the approved replacement plan for phase 17.
6. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$84,000 for the landscaping (tree replacement).
7. As built drawings shall be required for the drainage and sewer system with a letter from the Design Engineer that they are constructed per the approved drawings and functioning as intended.

Bob Nichols and Troy Gardner with Ragan Smith came forward to speak on behalf of the applicant.

**After discussion, Commissioner Whitmer made a motion to defer Item 1, the Final Plat for the creation of 70 single-family lots and five (5) open space lots within section 17 of Tollgate Village based on Staff's recommendation. The motion was seconded and carried by a vote of 4 to 3 with Commissioners Alexander, Dilks and Harris casting the dissenting votes.**

**2. Final Plat for the creation of three (3) single-family lots within section 18A of Tollgate Village (FP 2018-012).**

Mrs. Deats reviewed her report and Staff recommends the Planning Commission deny the final plat for the following reasons:

1. The developer has not obtained approvals related to sewer improvements as required at the preliminary plat approval.
2. Open space is not platted in accordance with Section 5.4.7.

Bob Nichols with Ragan Smith came forward to speak on behalf of the applicant.

**After discussion, Commissioner Roberts made a motion to deny Item 2, the Final Plat for the creation of three (3) single family lots within section 18A of Tollgate Village based on Staff's recommendation. The motion was seconded and carried by all.**

**3. Preliminary Plat for the subdivision of 59 lots for phase 2 of the "town center" in the Tollgate Village community (PP 2018-005).**

Mrs. Deats reviewed her report and Staff recommends the Planning Commission deferral of the preliminary plat for the following reasons:



Page 3

1. The project may meet the thresholds for the construction of another access or further improvements to the north access and the developer must provide additional information as requested by the traffic engineer.
2. A geotechnical report must be submitted.

Dave McGowan with Regent Homes came forward to speak on his behalf.

**After discussion, Commissioner Dilks made a motion to deny Item 3, a Preliminary Plat for the subdivision of 59 lots for Phase 2 of the “Town Center” in the Tollgate Village Community based on Staff’s recommendation. The motion was seconded and carried by all.**

**4. Site plan for the development of Phase 2 (townhomes, condominiums, live work and mixed use) within the Tollgate Village community (SP 2018-005).**

Mrs. Deats reviewed her report and recommends that the Planning Commission deny the site plan for the following reasons:

1. The project does not meet all LDO requirements, including, density as noted in table 4.13 and parking as permitted in section 4.12.
2. The project may meet the thresholds for the construction of another access or further improvements to the north access and the developer must provide additional information as requested by the traffic engineer.
3. A geotechnical report must be submitted.
4. The project does not have sewer availability.

**After discussion, Commissioner Whitmer made a motion to deny Item 4, a site plan for the development of Phase 2 (townhomes, condominiums, live work and mixed use) within the Tollgate Village community based on Staff’s recommendation. The motion was seconded and carried by all.**

**5. Final Plat for the creation of one (1) open space lot for Tollgate Village (FP 2018-015).**

Mrs. Deats reviewed her report and Staff recommends the Planning Commission approve the final plat for the open space.

**After discussion, Commissioner Roberts made a motion to approve Item 5, the Final Plat for the creation of one (1) open space lot for Tollgate Village. The motion was seconded and carried by all.**

There being no further business, Commissioner Alexander made a motion to adjourn. The motion was seconded, and the meeting was adjourned at 7:59 p.m.

---

Jack Elder, Chairman

Attest:

Municipal Planning Commission – Minutes of the Meeting  
August 28<sup>th</sup>, 2018

Page 4

---

Shaun Alexander, Secretary



**DATE:** September 17, 2018  
**TO:** Planning Commission  
**FROM:** Wendy Deats, Town Planner  
**SUBJECT:** Item 1 – Section 17 Tollgate Village (FP 2018-013)

---

On August 28, 2018, the Planning Commission reviewed the final plat for section 17 and deferred the request to the September 25<sup>th</sup> meeting to provide the developer time to comply with the contingencies outlined in the phase 17 preliminary plat approval and to record the required open space.

Sewer improvements are substantially complete at the pump station along with the paving of the road where the line was rerouted within Section 13B. However, improvements to the main pump station should also include a paved driveway from Wareham Drive to the pump station. This was not included in the approval for construction of the improvements for a 12-inch line upgrade. In addition, a water spigot is also necessary for general clean up and maintenance at the pump station. These improvements are required within section 1.15 of the town's *Specifications Covering the Design and Installation of Sewer Collection Systems*. Therefore, Staff requests these two additional improvements be specifically added as a contingency to the approval of the section 17 final plat.

The open space required for the Tollgate Village subdivision is 120 acres and as of this submittal, 82.92 acres are recorded. The plat for section 16 open space was approved and will have 20.4 acres. Once the final plat for section 16 open space is recorded, a total of 103.32 acres will be recorded. Another 16.71 acres will be recorded as part of this plat for section 17 (if approved) for a total of 120 acres. The Land Development Ordinance states in section 5.4.7 of the Land Development Ordinance that "no more than 60% of the lots may be platted prior to the platting of all of the open space as determined on the concept plan." Therefore, a contingency should be placed on this plat that all remaining open space shall be recorded prior to the recordation of this final plat, including the section 16 open space.

### **RECOMMENDATION**

Based on the project's consistency with the preliminary plat for section 17 and with the incorporation of the recommended contingencies, the plat will comply with the Land Development Ordinance, therefore, Staff recommends the Planning Commission approve the final plat with the following contingencies:

1. Prior to the recordation of the final plat, a plat with all remaining open space shall be recorded.
2. Prior to recordation of the final plat, all sewer improvements shall be completed and shall pass any necessary testing. These improvements shall include a driveway from Wareham Drive to the pump station in addition to a water spigot at the pump station.
3. Prior to the recordation of the final plat, the roadway paving, including final topping shall be completed to the satisfaction of the Town.
4. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$470,000 for roadways, drainage and erosion control with automatic renewal.

Phone: (615) 794-4333  
Fax: (615) 794-3313  
www.thompsons-station.com



1550 Thompson's Station Road W.  
P.O. Box 100  
Thompson's Station, TN 37179

5. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$280,000 for sewer with automatic renewal.
6. All tree replacements shall be installed in accordance with the approved replacement plan for phase 17.
7. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$84,000 for the landscaping (tree replacement).
8. As built drawings shall be required for the drainage and sewer system with a letter from the Design Engineer that they are constructed per the approved drawings and functioning as intended.

### **ATTACHMENTS**

Final Plat

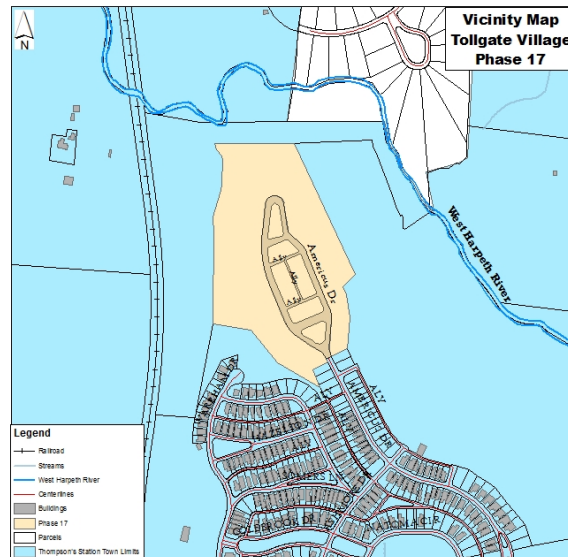
August 2018 Planning Commission Staff Report

**Thompson's Station Planning Commission**  
**Staff Report –Item 1 (FP 2018-013)**  
**August 28, 2018**

**Request to approve the final plat for Section 17 to create 70 single-family lots and five open space lots within Tollgate Village.**

**PROJECT DESCRIPTION**

A request to approve the final plat for Section 17 of Tollgate Village to create 70 single-family lots and five (5) open space lots.



**BACKGROUND**

On March 24, 2017, the Planning Commission approved the preliminary plat for phase 17 of Tollgate Village for the subdivision of 34.29 acres of land into 70 single-family lots and five open space lots with the following contingencies:

1. Prior to the approval of construction plans, a development agreement shall be approved and executed between the Town and the Developer.
2. Prior to the approval of construction plans, all sureties for each phase/section in Tollgate Village and for the installation of the traffic signal shall be posted and submitted to the Town in accordance with the requirements with the Land Development Ordinance.
3. All recommendations for traffic mitigation shall be completed in accordance with the phasing/timing set forth within the traffic study dated February 28, 2017.
4. Prior to the submittal of the final plat for phase 17, all sewer improvements must be completed to the satisfaction of the Town.
5. The construction route adjacent to Tollgate Boulevard, north of Phase 14 shall be utilized by all construction traffic.
6. All tree replacement shall be revised to include trees 18 inches or greater as specified by the Land Development Ordinance subject to review and approval to the satisfaction of the Town.

**ANALYSIS**

**Final Plat**

The purpose of the final plat is to provide a legal instrument where the transfer of ownership of lots is allowed and shall constitute a way where streets and other infrastructure can be accepted (LDO Section 5.2.7).

Section 17 consists of 70 single-family lots along Americus Drive, Ridgeland Drive and Rockhurst Drive. The setbacks are 10 feet for the front yard, 7.5 feet for the side yard, and 20 feet for the rear yard. Lot widths vary; however, the minimum lot width will be maintained at 50 feet, except where less width is permitted on the curve of a road. The right of way includes a five-foot sidewalk and a five-foot landscape strip. Several lots are critical throughout this phase as noted on the plat. All critical lots will require engineered site plans to address all site-specific issues.

#### *Trees*

Development of phase 17 will result in the removal of seven (7) trees for a total of 280 inches. The Land Development Ordinance requires the replacement of trees 18 inches and greater at a ratio of one and a half inches for every inch removed. Therefore, 420 inches of trees is required to be replaced within the development. The replacement plan includes 61 inches within phase 7, 60 inches within phase 12, nine inches within phase 14 and the remaining 290 inches in phase 17.

#### *Open Space*

The open space required for the Tollgate Village subdivision is 120 acres and as of this submittal, 82.92 acres are recorded. With the recordation of this plat, another 16.71 acres will be recorded for a total of 99.63. The Land Development Ordinance states in section 5.4.7 of the Land Development Ordinance that “no more than 60% of the lots may be platted prior to the platting of all of the open space as determined on the concept plan.” No further lots in Tollgate Village may be platted until all the open space is dedicated. Therefore, the developer is required to plat 20.37 additional acres of open space.

#### *Sewer*

The Tollgate Village development has approval for 943 sewer taps. With the approval of these 70 single-family lots, a total of 829 sewer taps will be committed leaving 114 taps available for future approvals. Furthermore, sewer improvements for Tollgate Village that include rerouting the gravity line in phase 13 and upgrades to the sewer line from the manhole on Wareham to the pump station. The development agreement executed on May 9, 2018 states that “prior to the submittal of the final plat for phase 17, all sewer improvements must be completed to the satisfaction of the Town.” At this time, the sewer improvements are not complete, therefore Staff cannot recommend approval of this plat.

#### *Sureties*

Sureties are required prior to the recordation of any final plat to ensure that all necessary improvements are guaranteed to be installed per approved construction plans. The Tollgate Village phase 17 construction plans are approved, and improvements have been started within this phase. Roadway work is completed to base course with curbs, drainage and utilities in place and erosion control is installed. After an evaluation of this section and the progress of the construction, the Town Engineer recommends that the roads, drainage and erosion control surety should be set at \$470,000.

Sewer is installed however testing has not occurred and flow is not applied to the system. After an evaluation of the progress of the sewer, the Town Engineer recommends that the sewer surety be set at \$280,000.

#### **Recommendation**

Staff recommends the Planning Commission deny the final plat for the following reasons:

1. Sewer improvements as identified in the approval for the preliminary plat and development agreements are not complete.
2. Open space is not platted in accordance with Section 5.4.7.

Should the Commission wish to approve the final plat, Staff recommends the following be considered as contingencies:

1. Prior to the recordation of the final plat, a plat identifying all remaining open space shall be approved by the Town.
2. Prior to recordation of the final plat, all sewer improvements shall be completed and shall pass any necessary testing.
3. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$470,000 for roadways, drainage and erosion control with automatic renewal.
4. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$280,000 for sewer with automatic renewal.
5. All tree replacements shall be installed in accordance with the approved replacement plan for phase 17.
6. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$84,000 for the landscaping (tree replacement).
7. As built drawings shall be required for the drainage and sewer system with a letter from the Design Engineer that they are constructed per the approved drawings and functioning as intended.

**Attachments**

Final Plat



**GENERAL NOTES**

- THE PURPOSE OF THIS PLAT IS TO CREATE 70 RESIDENTIAL SINGLE-FAMILY LOTS AND 5 OPEN SPACE TRACTS.
- BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE COORDINATE SYSTEM OF 1983. GPS EQUIPMENT WAS USED DURING THE COURSE OF THE SURVEY ON THE SITE TO DETERMINE THE POSITION OF TWO CONTROL POINTS FOR ESTABLISHING THE BEARING BASE. TYPE OF EQUIPMENT USED: TRIMBLE MODEL R10, DUAL FREQUENCY RECEIVER. THE TYPE OF SURVEY: NETWORK ADJUSTED REAL TIME KINEMATIC. CONTROL POINTS FOR BEARING BASE FOR PROJECT AND ROAD LOCATION IMPROVEMENTS.
- THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE, IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS NO LESS THAN THREE (3) NOR MORE THAN TEN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT, TENNESSEE ONE CALL, DIAL 811.
- THIS PROPERTY IS CURRENTLY ZONED D3 (HIGH DENSITY RESIDENTIAL). MAXIMUM LOT COVERAGE 55%. MINIMUM BUILDING SETBACKS PER TOWN OF THOMPSON'S STATION LAND DEVELOPMENT ORDINANCE:  
FRONT: 10'  
REAR: 20'  
SIDE: 7.5'  
\*20' MINIMUM DRIVEWAY LENGTH, EXCLUSIVE OF SIDEWALKS
- BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONES "AE" AND "X" (OTHER AREAS), AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NO. 47187C0335F, WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT, COMMUNITY NO. 470424, PANEL NO. 0335, SUFFIX F, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "AE" UNDER "SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD" AS BASE FLOOD ELEVATIONS DETERMINED. SAID MAP DEFINES ZONE "X" (OTHER AREAS) UNDER "OTHER AREAS" AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
- ALL STREETS ARE DESIGNATED PUBLIC AND AS SUCH ARE PUBLIC UTILITY, ACCESS AND DRAINAGE EASEMENTS.
- ALL PUBLIC STREETS AND DRAINAGE STRUCTURES WITHIN THE RIGHTS-OF-WAY WILL BE MAINTAINED BY THE TOWN OF THOMPSON'S STATION.
- OPEN SPACE AREAS, PUBLIC UTILITY AND DRAINAGE EASEMENTS (INCLUDING DRAINAGE AND DETENTION STRUCTURES), ALLEYS AND ALL LANDSCAPING WITHIN ROADWAY MEDIANS WILL BE MAINTAINED BY THE HOMEOWNERS' ASSOCIATION.
- LOTS SHOWN THUS (\*) ARE DESIGNATED AS CRITICAL LOTS AND HAVE MANMADE SLOPES IN EXCESS OF 15%. PER SECTION 3.3.7 OF THE SUBDIVISION REGULATIONS, PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, A SITE GRADING PLAN FOR DEVELOPMENT OF THE LOT SHALL BE SUBMITTED ADDRESSING SITE SPECIFIC NATURAL RESOURCE ISSUES TO THE TOWN OF THOMPSON'S STATION FOR REVIEW AND APPROVAL. NO BUILDING PERMIT WILL BE ISSUED ON SAID LOTS UNTIL AND UNLESS THE TOWN ENGINEER HAS RECEIVED AND REVIEWED THE SITE PLAN.
- OPEN SPACE TRACTS 1789-1793 ARE ALSO A PUBLIC UTILITY, DRAINAGE, AND ACCESS EASEMENTS.
- DOMESTIC WATER SUPPLY INFORMATION SHOWN HEREON TAKEN FROM PLANS PREPARED BY JAMES C. HAILEY & CO. DATED APRIL 28, 2017.
- I HEREBY STATE THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AND THIS IS A CATEGORY I SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS 1:43,595.

BY:  DATE: AUGUST 2, 2018  
JOHN T. DARNALL, TN RLS #1571

**SITE DATA TABLE (PHASE 17)**

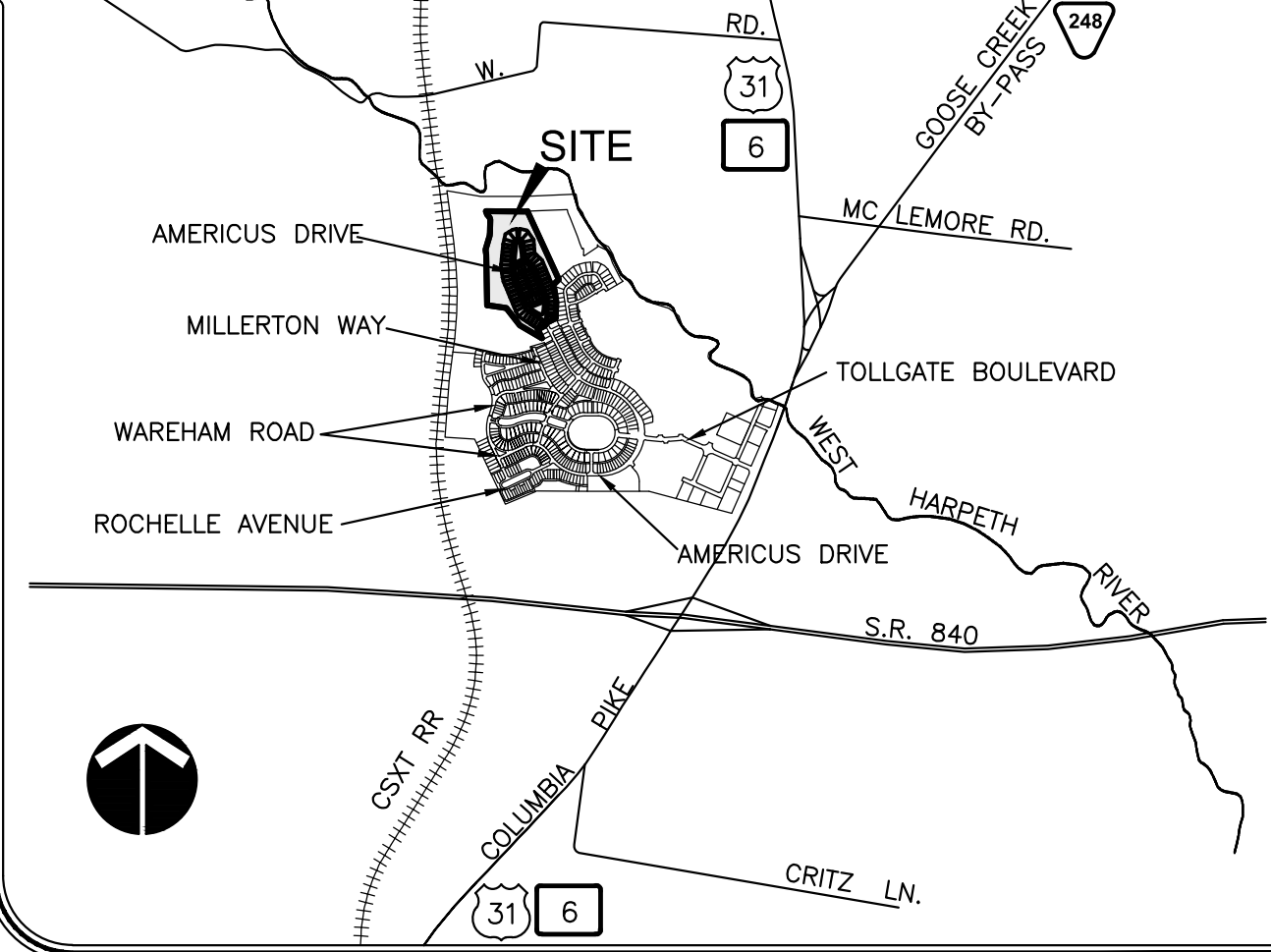
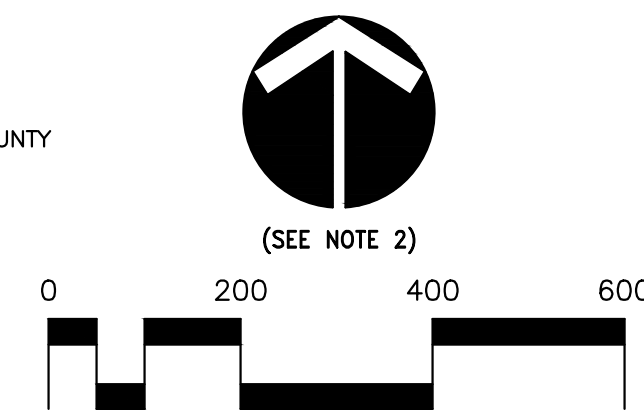
TOTAL LOT AREA	- 13.76 ACRES±
TOTAL R.O.W. AREA	- 3.82 ACRES±
OPEN SPACE AREA	- 16.71 ACRES±
TOTAL SITE AREA	- 34.29 ACRES±
MILES NEW ROAD	- 0.82±

**DEED REFERENCE**

BEING A PORTION OF THE SAME PROPERTY CONVEYED TO MBSC TN HOMEBUILDERS, LLC, FROM TOP 2010, LLC OF RECORD IN BOOK 5264, PAGE 242, REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TENNESSEE.

**PROPERTY MAP REFERENCE**

BEING A PORTION OF PARCEL 1 AS SHOWN ON WILLIAMSON COUNTY PROPERTY MAP 132.



**LOCATION MAP**  
NOT TO SCALE

**LOT AREA TABLE**

LOT	SQ. FT.±	ACRES±
1706	8,261	0.19
1707	8,316	0.19
1708	8,298	0.19
1709	8,274	0.19
1710	8,804	0.20
1711	10,603	0.24
1712	10,679	0.25
1713	9,148	0.21
1714	8,250	0.19
1715	8,250	0.19
1716	8,250	0.19
1717	8,250	0.19
1718	8,250	0.19
1719	8,716	0.20
1720	9,031	0.21
1721	9,132	0.21
1722	9,202	0.21
1723	9,197	0.21
1724	9,345	0.21
1725	9,243	0.21
1726	8,614	0.20
1727	8,250	0.19
1728	8,250	0.19
1729	8,250	0.19
1730	9,841	0.23
1731	13,716	0.31
1732	12,940	0.30
1733	14,161	0.33
1734	14,599	0.34
1735	11,258	0.26
1736	8,739	0.20
1737	8,784	0.20
1738	10,803	0.25
1739	8,274	0.19
1740	10,478	0.24
1741	9,041	0.21
1742	8,250	0.19
1743	8,250	0.19
1744	8,250	0.19
1745	8,250	0.19
1746	8,250	0.19
1747	8,250	0.19
1748	8,172	0.19
1749	8,541	0.20
1750	8,412	0.19
1751	7,866	0.18
1752	7,341	0.17
1753	7,458	0.17
1754	7,575	0.17
1755	8,429	0.19
1756	6,837	0.16
1757	6,678	0.15
1758	6,678	0.15
1759	6,678	0.15
1760	7,077	0.16
1761	7,013	0.16
1762	6,678	0.15
1763	6,678	0.15
1764	6,678	0.15
1765	6,624	0.15
1766	6,710	0.15
1767	10,118	0.23
1768	6,804	0.16
1769	10,912	0.25
1770	7,013	0.16
1771	6,678	0.15
1772	6,678	0.15
1773	6,678	0.15
1774	6,678	0.15
1775	7,013	0.16

**SHEET 3**

**SHEET 2**

**OPEN SPACE AREA TABLE**

OPEN SPACE	SO. FT.±	ACRES±
1789	25,171	0.58
1790	2,016	0.05
1791	2,016	0.05
1792	22,431	0.51
1793	676,013	15.52

**RECORDER'S INFORMATION**

Blank box for Recorder's Information.

TOTAL AREA = 1,493,683 SQUARE FEET OR 34.29 ACRES ±

**CERTIFICATE OF OWNERSHIP & DEDICATION**

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK 5264, PAGE 242, R.O.W.C., AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) FREE CONSENT. ESTABLISH THE MINIMUM BUILDING RESTRICTION LINE, AND THAT OFFERS OF IRREVOCABLE DEDICATION FOR ALL PUBLIC STREETS, UTILITIES AND OTHER FACILITIES HAVE BEEN FILED AS REQUIRED BY THESE REGULATIONS.

DATE: AUGUST 2, 2018  
MBSC TN HOMEBUILDERS, LLC  
TITLE:

**CERTIFICATE OF ACCURACY**

I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY TO THE ACCURACY REQUIRED BY THE TOWN OF THOMPSON'S STATION MUNICIPAL PLANNING COMMISSION AND THAT THE MONUMENTS HAVE BEEN OR WILL BE PLACED AS SHOWN HEREON TO THE PRECISION OF THE SUBDIVISION REGULATIONS AS APPROVED BY THE TOWN ENGINEER. THIS IS A CATEGORY I SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS GREATER THAN 1:43,595 AS SHOWN HEREON.

RAGAN - SMITH - ASSOCIATES, INC.  
  
DATE: AUGUST 2, 2018  
JOHN T. DARNALL, RLS NO. 1571

**CERTIFICATE OF APPROVAL OF UTILITY SYSTEMS**

I HEREBY CERTIFY THAT THE FOLLOWING UTILITY SYSTEMS OUTLINED OR INDICATED ON THE PLAN SHOWN HEREON HAVE BEEN INSTALLED IN ACCORDANCE WITH CURRENT LOCAL AND/OR STATE GOVERNMENT REQUIREMENTS OR THAT A SURETY BOND HAS BEEN POSTED WITH THE PLANNING COMMISSION TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT. ALSO, I CERTIFY THAT THE HYDRAULIC DESIGN CRITERIA SPECIFIED IN SECTION 3-106 OF THE THOMPSON'S STATION SUBDIVISION REGULATIONS HAVE BEEN MET.

WATER SYSTEM: \_\_\_\_\_  
SEWER SYSTEM: \_\_\_\_\_  
DATE: \_\_\_\_\_  
NAME, TITLE, AND AGENCY OF AUTHORIZED APPROVING AGENT: \_\_\_\_\_

**CERTIFICATION OF THE APPROVAL OF STREETS**

I HEREBY CERTIFY: (1) THAT ALL STREETS DESIGNATED ON THIS FINAL SUBDIVISION PLAN HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO THOMPSON'S STATION'S SUBDIVISION REGULATIONS, OR (2) THAT A SURETY BOND HAS BEEN POSTED WITH THE PLANNING COMMISSION TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.

DATE: \_\_\_\_\_  
TOWN ENGINEER: \_\_\_\_\_

**CERTIFICATE OF APPROVAL OF MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION**

I HEREBY CERTIFY THAT THE REQUIREMENTS SET FORTH IN RULES, REGULATIONS, BY-LAWS, POLICY AND OPERATIONAL BULLETINS, PLAT APPROVAL CHECKLIST AND TREE PLANTING GUIDELINES HAVE BEEN MET FOR MTEC. ANY APPROVAL IS AT ALL TIMES CONTINGENT UPON CONTINUING COMPLIANCE WITH THE AFORESAID REQUIREMENTS.

DATE: \_\_\_\_\_  
MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION: \_\_\_\_\_

**CERTIFICATE OF APPROVAL FOR RECORDING**

I HEREBY CERTIFY THAT THE SUBDIVISION PLAN SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THOMPSON'S STATION SUBDIVISION REGULATIONS WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS ARE NOTED IN THE MINUTES OF THE PLANNING COMMISSION AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE COUNTY REGISTER.

DATE: \_\_\_\_\_  
SECRETARY OF PLANNING COMMISSION: \_\_\_\_\_

**CERTIFICATE OF APPROVAL OF SUBDIVISION NAME AND STREET NAMES**

I DO HEREBY CERTIFY THAT THE SUBDIVISION NAME AND STREET NAMES DENOTED ON THIS FINAL PLAN HAVE BEEN APPROVED BY THE WILLIAMSON COUNTY EMERGENCY COMMUNICATIONS AGENCY.

DATE: \_\_\_\_\_  
WILLIAMSON COUNTY PUBLIC SAFETY: \_\_\_\_\_

**CERTIFICATE FOR ADDRESSES**

I DO HEREBY CERTIFY THAT THE ADDRESSES DENOTED ON THIS FINAL PLAN ARE THOSE ASSIGNED BY DEPARTMENT OF INFORMATION TECHNOLOGY (IT).

DATE: \_\_\_\_\_  
IT DEPT. E-911 ADDRESSING COORDINATOR: \_\_\_\_\_

**FINAL PLAT**

**TOLLGATE VILLAGE SECTION 17**

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

REVISED: AUGUST 2, 2018  
DATE: JULY 19, 2018  
JOB NO. 10-081  
SCALE: 1"=200'  
W.O. 9260

**OWNER/DEVELOPER**  
MBSC TN HOMEBUILDERS, LLC  
C/O BRIAN ROWE  
312 S. GAY STREET, SUITE 200  
KNOXVILLE, TENNESSEE 37902  
(865) 408-8322

**RAGAN • SMITH**

LAND PLANNERS • CIVIL ENGINEERS  
LANDSCAPE ARCHITECTS • SURVEYORS

315 WOODLAND ST. P.O. BOX 60070 NASHVILLE, TN 37206  
(615) 244-8591 FAX (615) 244-6739 tdarnall@ragansmith.com  
CONTACT: TOM DARNALL, RLS

CS: 10/25/2018 10:53:00 AM, USER: JTD, PLOT: 17, PLOT AREA: 13.76 ACRES, PLOTTED BY: JTD, LAST UPDATED BY: JTD, DATE: 8/2/2018 9:20 AM



GENERAL NOTES  
 1. SEE SHEET 1 OF 3 FOR GENERAL NOTES AND LOT AND OPEN SPACE AREAS.



(ZONED D3)  
 TOLLGATE VILLAGE  
 OPEN SPACE AREA NO. 1  
 PLAT BOOK P56, PAGE 110,  
 R.O.W.C.T.

OPEN SPACE  
 1793

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 13C  
 PLAT BOOK P58, PAGE 145,  
 R.O.W.C.T.

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 15  
 PLAT BOOK P66, PAGE 75,  
 R.O.W.C.T.

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 15  
 NOT RECORDED AT THIS TIME

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 14B  
 PLAT BOOK P61, PAGE 32,  
 R.O.W.C.T.

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHD BRG
C38	25.00'	39.27'	90°00'00"	25.00	35.36'	S22°27'16"W
C39	25.00'	37.38'	85°40'01"	23.18	33.99'	N69°42'43"W
C40	177.00'	13.39'	4°19'59"	6.70	13.38'	S24°42'43"E
C41	10.00'	15.71'	90°00'00"	10.00	14.14'	N22°27'16"E
C42	10.00'	15.71'	90°00'00"	10.00	14.14'	S67°32'44"E
C43	10.00'	15.71'	90°00'00"	10.00	14.14'	S22°27'16"W
C44	10.00'	15.71'	90°00'00"	10.00	14.14'	N67°32'44"W
C45	10.00'	15.71'	90°00'00"	10.00	14.14'	N22°27'16"E
C46	10.00'	15.71'	90°00'00"	10.00	14.14'	S67°32'44"E
C47	10.00'	15.71'	90°00'00"	10.00	14.14'	S22°27'16"W
C48	10.00'	15.71'	90°00'00"	10.00	14.14'	N67°32'44"W
C49	777.00'	110.84'	8°10'25"	55.52	110.75'	N18°27'31"W
C50	777.00'	10.05'	0°44'27"	5.02	10.05'	N22°10'30"W
C51	777.00'	53.07'	3°54'48"	26.54	53.06'	N19°50'52"W
C52	777.00'	47.73'	3°31'10"	23.87	47.72'	N16°07'54"W
C53	10.00'	14.28'	81°49'35"	8.67	13.10'	N26°32'29"E
C54	10.00'	15.71'	90°00'00"	10.00	14.14'	S67°32'44"E
C55	177.00'	38.77'	12°33'06"	19.47	38.70'	S39°53'38"E
C56	10.00'	17.64'	101°04'22"	12.15	15.44'	S16°55'05"W
C57	10.00'	17.66'	101°12'19"	12.18	15.46'	N61°56'34"W

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHD BRG
C1	77.00'	41.22'	30°40'26"	21.12	40.73'	N42°00'17"W
C2	223.00'	135.43'	34°47'46"	69.88	133.36'	N39°56'37"W
C3	223.00'	10.85'	2°47'15"	5.43	10.85'	N55°56'52"W
C4	223.00'	50.58'	12°59'46"	25.40	50.47'	N48°03'22"W
C5	223.00'	50.58'	12°59'46"	25.40	50.47'	N35°03'36"W
C6	223.00'	23.42'	6°00'59"	11.72	23.41'	N25°33'13"W
C7	823.00'	413.60'	28°47'38"	211.26	409.26'	N08°08'55"W
C8	823.00'	43.98'	3°03'44"	22.00	43.98'	N21°00'52"W
C9	823.00'	53.70'	3°44'20"	26.86	53.70'	N17°36'50"W
C10	823.00'	53.70'	3°44'20"	26.86	53.70'	N13°52'30"W
C11	823.00'	55.01'	3°49'47"	27.52	55.00'	N10°05'27"W
C29	223.00'	20.77'	5°20'14"	10.39	20.77'	S25°12'51"E
C30	223.00'	103.34'	26°33'06"	52.62	102.42'	S09°16'10"E
C31	223.00'	29.30'	7°31'41"	14.67	29.28'	S18°46'53"E
C32	223.00'	50.58'	12°59'46"	25.40	50.47'	S08°31'09"E
C33	223.00'	23.46'	6°01'39"	11.74	23.45'	S00°59'33"W
C34	77.00'	41.22'	30°40'26"	21.12	40.73'	S11°19'50"E
C35	25.00'	51.77'	118°39'08"	42.15	43.00'	S63°19'57"W
C36	25.00'	54.45'	124°47'46"	47.82	44.31'	N05°03'23"E
C37	25.00'	50.86'	116°33'06"	40.44	42.53'	S54°16'10"E

- LEGEND**
- MONUMENT (NEW)  
(4" DIAMETER ALUMINUM DISC  
W/ 5/8" IRON ROD MARKED  
"RAGAN-SMITH ASSOCIATES")
  - IRON ROD (NEW)  
(5/8" X 18" W/CAP STAMPED  
"RAGAN-SMITH & ASSOCIATES")
  - IRON ROD (OLD)
  - CATCH BASIN
  - SANITARY SEWER MANHOLE
  - ⊕ STORM MANHOLE
  - ⊗ LOT NUMBER
  - R.O.W. RIGHT-OF-WAY
  - ★ CRITICAL LOT
  - [123] STREET ADDRESS
  - ⊕ FIRE HYDRANT
  - SA— SANITARY SEWER LINE
  - RCP— REINFORCED CONCRETE PIPE
  - M.T.E.M.C.E./P.U.D.E. MIDDLE TENN ELECTRIC MEMBERSHIP CORP EASEMENT/ PUBLIC UTILITY DRAINAGE EASEMENT
  - R.O.W. RIGHT-OF-WAY
  - M.B.S.L. MINIMUM BUILDING SETBACK LINE
  - CONCRETE SURFACE
  - R.O.W.C.T. REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TN
  - W— WATER LINE



**FINAL PLAT**  
**TOLLGATE VILLAGE**  
 SECTION 17

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

REVISED: AUGUST 2, 2018  
 DATE: JULY 19, 2018  
 JOB NO. 10-1081

SCALE: 1"=50'  
 W.O. 9260

**OWNER/DEVELOPER**  
 MBSC TN HOME BUILDER, LLC  
 C/O BRIAN ROWE  
 312 S. GAY STREET, SUITE 200  
 KNOXVILLE, TENNESSEE 37902  
 (865) 408-8322

**RAGAN • SMITH**

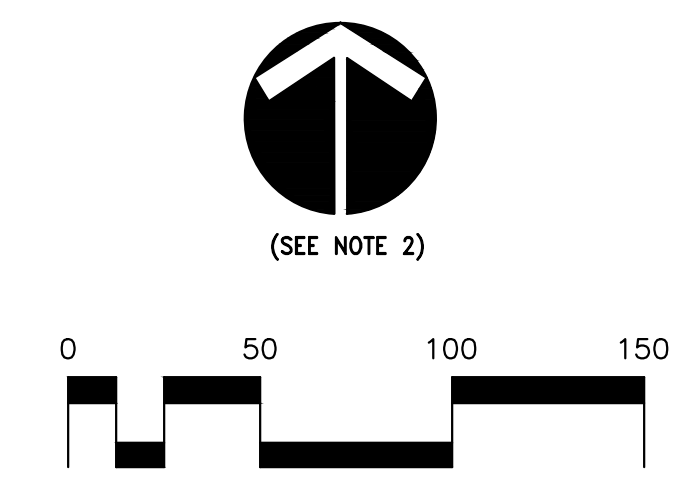
LAND PLANNERS • CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTS • SURVEYORS

315 WOODLAND ST., P.O. BOX 60070 NASHVILLE, TN, 37206  
 (615) 244-8591 FAX (615) 244-0739 tdarvall@ragansmith.com  
 CONTACT: TOM DARNALL, P.L.S.  
 SHEET 2 OF 3





**GENERAL NOTES**  
 1. SEE SHEET 1 OF 3 FOR GENERAL NOTES AND LOT AND OPEN SPACE AREAS.



CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHD BRG
C7	823.00'	413.60'	28°47'38"	211.26	409.26'	N08°08'55"W
C10	823.00'	53.70'	3°44'20"	26.86	53.70'	N13°52'30"W
C11	823.00'	55.01'	3°49'47"	27.52	55.00'	N10°05'27"W
C12	823.00'	55.01'	3°49'47"	27.52	55.00'	N06°15'40"W
C13	823.00'	55.01'	3°49'47"	27.52	55.00'	N02°25'53"W
C14	823.00'	55.01'	3°49'47"	27.52	55.00'	N01°23'54"E
C15	823.00'	16.00'	1°06'50"	8.00	16.00'	N03°52'12"E
C16	823.00'	26.16'	1°49'17"	13.08	26.16'	N05°20'15"E
C17	73.00'	210.80'	165°26'54"	571.76	144.82'	N88°58'21"E
C18	73.00'	14.70'	11°32'23"	7.38	14.68'	N12°01'06"E
C19	73.00'	42.19'	33°06'41"	21.70	41.60'	N34°20'38"E
C20	73.00'	42.19'	33°06'41"	21.70	41.60'	N67°27'18"E
C21	73.00'	16.03'	12°35'00"	8.05	16.00'	S89°41'52"E
C22	73.00'	43.84'	34°24'33"	22.60	43.18'	S66°12'05"E
C23	73.00'	45.78'	35°55'48"	23.67	45.03'	S31°01'55"E
C24	73.00'	6.07'	4°45'48"	3.04	6.07'	S10°41'07"E
C25	77.00'	50.89'	37°51'59"	26.41	49.97'	S27°14'12"E
C26	223.00'	91.95'	23°37'27"	46.64	91.30'	S34°21'27"E
C27	223.00'	20.59'	5°17'27"	10.30	20.59'	S43°31'28"E
C28	223.00'	50.58'	12°59'46"	25.40	50.47'	S34°22'51"E
C29	223.00'	20.77'	5°20'14"	10.39	20.77'	S25°12'51"E
C55	177.00'	38.77'	12°33'06"	19.47	38.70'	S39°53'38"E
C56	10.00'	17.64'	101°04'22"	12.15	15.44'	S16°55'05"W
C57	10.00'	17.66'	101°12'19"	12.18	15.46'	N61°56'34"W
C58	777.00'	100.49'	7°24'36"	50.31	100.42'	N07°38'07"W
C59	25.00'	31.15'	71°23'05"	17.96	29.17'	N31°45'44"E
C60	25.00'	28.96'	66°22'33"	16.35	27.37'	S79°21'27"E
C61	13.50'	22.14'	93°58'29"	14.47	19.74'	S20°28'02"W
C62	25.00'	50.85'	116°32'35"	40.43	42.53'	N54°16'26"W
C63	777.00'	30.52'	2°15'02"	15.26	30.52'	N05°07'23"E
C64	27.00'	77.97'	165°26'54"	211.47	53.57'	N88°58'21"E
C65	123.00'	39.11'	18°13'00"	19.72	38.94'	S17°24'42"E

(ZONED D3)  
 TOLLGATE VILLAGE  
 OPEN SPACE AREA NO. 1  
 PLAT BOOK P56, PAGE 110,  
 R.O.W.C.T.

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 15  
 PLAT BOOK P66, PAGE 75,  
 R.O.W.C.T.

(ZONED D3)  
 TOLLGATE VILLAGE  
 SECTION 15  
 PLAT BOOK P66, PAGE 75,  
 R.O.W.C.T.



FINAL PLAT

**TOLLGATE VILLAGE SECTION 17**

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

REVISED: AUGUST 2, 2018  
 DATE: JULY 19, 2018  
 JOB NO. 10-081

SCALE: 1"=50'  
 W.O. 9260

OWNER/DEVELOPER  
 MBSC TN HOMEBUILDER, LLC  
 C/O BRIAN ROWE  
 312 S. GAY STREET, SUITE 200  
 KNOXVILLE, TENNESSEE 37902  
 (865) 408-8322

**RAGAN•SMITH**

LAND PLANNERS • CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTS • SURVEYORS  
 315 WOODLAND ST. P.O. BOX 60070 NASHVILLE, TN 37206  
 (615) 244-8991 FAX (615) 244-6739 tdarnall@ragansmith.com  
 CONTACT: TOM DARNALL, RLS  
 SHEET 3 OF 3

**LEGEND**

■ MONUMENT (NEW) (4" DIAMETER ALUMINUM DISC W/ 5/8" IRON ROD MARKED "RAGAN-SMITH ASSOCIATES")	⊕ FIRE HYDRANT
● IRON ROD (NEW) (5/8" X 18" W/ "CS" STAMPED "RAGAN-SMITH ASSOCIATES")	—SA— SANITARY SEWER LINE
○ IRON ROD (OLD)	—RCP— REINFORCED CONCRETE PIPE
■ CATCH BASIN	M.T.E.M.C.E./ P.U.D.E. MIDDLE TENN ELECTRIC MEMBERSHIP CORP EASEMENT/ PUBLIC UTILITY DRAINAGE EASEMENT
⊙ SANITARY SEWER MANHOLE	R.O.W. RIGHT-OF-WAY
⊙ STORM MANHOLE	M.B.S.L. MINIMUM BUILDING SETBACK LINE
⊙ LOT NUMBER	CONCRETE SURFACE
R.O.W. RIGHT-OF-WAY	R.O.W.C.T. REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TN
★ CRITICAL LOT	—W— WATER LINE
[1723] STREET ADDRESS	

MATCHLINE  
 SEE SHEET 2

MATCHLINE  
 SEE SHEET 2



© 2018 RAGAN SMITH ASSOCIATES, INC. ALL RIGHTS RESERVED. THIS PLAN IS THE PROPERTY OF RAGAN SMITH ASSOCIATES, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

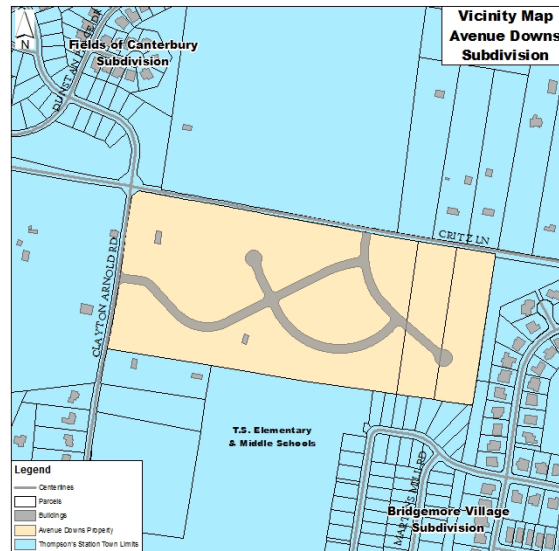


**Thompson's Station Planning Commission  
Staff Report – Item 2 (PP 2018-007)  
September 25, 2018**

**Avenue Downs Preliminary Plat for the creation of 69 single family lots, five open space lots, a pump station lot and the removal of 18 trees totaling 455 inches of trees.**

**PROJECT DESCRIPTION**

Ragan Smith & Associates, on behalf of Amber Lane Development, submitted a request for a preliminary plat for a two-phase project which will include 69 single family lots, a pump station lot and open space lots. The plat also includes the removal of 18 trees for a total of 455 inches.



**ANALYSIS**

*Land Use/Density*

The development is located within the D2 – Medium Intensity zoning district which permits one and a half units an acre and permits housing options that include single-family. This project includes 69 single family lots on 46.4 acres for a density of one and a half units per acre.

*Lot Width and Setbacks*

The single family lots will vary in size from .21 acres to .40 acres with lot widths greater than 65 feet. The proposed setbacks are 20 feet for the front and rear yard setbacks and 10 feet for the side yard setback.

*Roadways*

The standard for local roadways is 50 feet. Three new roads are proposed and will have a 50-foot right-of-way with a five-foot sidewalk and a five-foot landscape strip between the sidewalk and the road is required. Otterham Drive will connect to Clayton Arnold Road, Arundel Lane is an internal roadway, Cain Terrace is an internal cul de sac and Avenue Downs will connect to Critz Lane. Street lights will be located in the landscape strip between the sidewalk and the roadway. Critz Lane is currently in design for improvements and there is a slight elevation change at the connection of Road C. However, the developer is working on an agreement with the Town and Encompass Land Group for the completion of these improvements. Should this agreement be reached this issue would not be applicable. If an agreement is not reached and the construction of the site moves forward, Staff would recommend that the developer coordinate with the Town during the construction to ensure no conflicts occur between the construction of the proposed road and the improvements to Critz Lane.

### *Open Space/Amenities*

The minimum open space requirement is 45%. Five open space lots are proposed for a total of approximately 25 acres or 54% of the project site.

The LDO requires that neighborhoods with greater than 50 lots shall incorporate one of the following amenities: children's playground, swimming pool with amenities center, passive recreation areas, and trails throughout the open space where feasible. The developer is proposing a trail network through the site and a sidewalk along Clayton Arnold Road to provide amenity and access to the Town's future pedestrian paths and neighboring school.

### *Trees*

Development of site, as proposed, will result in the removal of 18 trees for a total of 455 inches. The LDO requires the replacement of trees 18 inches and greater at a ratio of one and a half inches for every inch removed. Therefore, 682.5 inches of trees are required to be replaced within the development. A landscape plan was submitted, and the developer proposes to install/plant 342 trees for a total of 684 inches of replacement trees. The proposed trees will include street trees along the proposed roads with the remaining trees within the open space area. This includes a buffer type 2 (broken screen) between the neighboring properties zoned D1 and the neighborhood zoned D2 as required by the LDO.

### *Traffic Study*

A traffic study was submitted and reviewed by the Town's traffic engineer. A revised traffic study was submitted to the Town and has been reviewed by the traffic engineer. The traffic engineer is recommending acceptance of the traffic study with its recommendations. All recommended mitigation shall be incorporated into the development agreement.

On July 10, 2018, the Planning Commission held a work session to discuss improvements to Critz Lane in conjunction with the plat submittals for The Fields of Canterbury and Avenue Downs. During the work session, the Commission expressed concerns over permitting any plats along the Critz corridor given the need for the improvements to Critz Lane. The developers of The Fields of Canterbury and Avenue Downs indicated that they would like to develop an agreement with the Town to pursue the roadway improvements and are working on the agreement to present to the Town for review.

### *Utilities*

The developer requested approval of wastewater from the Board of Mayor and Aldermen on June 12, 2018. The request was not approved; therefore, the project does not have sewer availability. The LDO states "land shall not be subdivided until proper provisions have been made for drainage, water, sewerage, telecommunications and other public utilities . . ." (Section 3.1.1). Therefore, Staff cannot recommend approval of a project that does not have access to sewer.

### **RECOMMENDATION**

Based on the lack of availability of utilities, specifically sewer as cited in Section 3.1.1 of LDO, Staff recommends denial of the preliminary plat.

### **ATTACHMENTS**

Preliminary Plat

Landscape Plan

Updated Traffic Study (8/13/2018)



**GENERAL NOTES**

- THE PURPOSE OF THIS PLAT IS TO CREATE 69 SINGLE FAMILY LOTS, A PUMP STATION LOT, OPEN SPACE TRACTS, AND PUBLIC RIGHT OF WAY.
- BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM NAD 1983. GPS EQUIPMENT WAS USED TO DETERMINE THE POSITION OF TWO CONTROL POINTS ON THE SURVEYED PROPERTY IN ORDER TO ESTABLISH THE BEARING BASE FOR THE SURVEY. TYPE EQUIPMENT USED: LEICA, MODEL QX1230, DUAL FREQUENCY RECEIVER. THE TYPE OF GPS SURVEY: NETWORK ADJUSTED REAL TIME KINEMATIC. THE RELATIVE POSITIONAL ACCURACY IS 0.05'.
- THE PROPERTY IS ZONED D2 (MEDIUM DENSITY RESIDENTIAL).  
MAXIMUM LOT COVERAGE (SINGLE FAMILY) - 55%.  
MINIMUM BUILDING SETBACKS:  
FRONT - 20'  
SIDE - 10'  
REAR - 20'
- BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONES "X" (OTHER FLOOD AREAS) AND "X" (OTHER AREAS), AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NOS. 47187C0345F AND 47187C0365F WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 470424, PANEL NOS. 0345 AND 0365, SUFFIX F, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "AE" UNDER "SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD" AS BASE FLOOD ELEVATIONS DETERMINED. SAID MAP DEFINES ZONE "X" (OTHER FLOOD AREAS) UNDER "OTHER FLOOD AREAS" AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. SAID MAP DEFINES ZONE "X" (OTHER AREAS) UNDER "OTHER AREAS" AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
- THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE, IT IS A REQUIREMENT, PER THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS NO LESS THAN THREE (3) NOR MORE THAN TEN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL, DIAL 811.
- SANITARY SEWER LINES AND STORM LINES SHOWN HEREON WERE TAKEN FROM A PRELIMINARY DESIGN. FINAL PLACEMENT OF UTILITIES WILL BE DEPICTED ON THE FINAL PLAT.
- DOMESTIC WATER SUPPLY INFORMATION SHOWN HEREON IS BASED ON A PRELIMINARY DESIGN.
- ALL PUBLIC STREETS AND DRAINAGE STRUCTURES WITHIN THE RIGHTS-OF-WAY WILL BE MAINTAINED BY THE TOWN OF THOMPSON'S STATION.
- HOMEOWNER'S ASSOCIATION WILL BE RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF STORMWATER INFRASTRUCTURE LOCATED IN DRAINAGE EASEMENTS AND ALL OPEN SPACE, INCLUDING LANDSCAPE AND DETENTION/RETENTION AREAS.
- ELEVATIONS SHOWN HEREON ARE BASED ON NAVD 88. CONTOURS ARE AT TWO FOOT INTERVALS AND ARE BASED ON A FIELD RUN SURVEY USING RANDOM SPOT ELEVATIONS. CONTOURS WERE DERIVED USING SURFACE MODELING TECHNIQUES.
- LOTS SHOWN WITH (\*) ARE DESIGNATED AS CRITICAL LOTS AND HAVE NATURAL SLOPES IN EXCESS OF 15%. PER SECTION 3-102.104 OF THE SUBDIVISION REGULATIONS, PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, A SITE GRADING PLAN FOR DEVELOPMENT OF THE LOT SHALL BE SUBMITTED ADDRESSING SITE SPECIFIC NATURAL RESOURCE ISSUES TO THE TOWN OF THOMPSON'S STATION FOR REVIEW AND APPROVAL. NO BUILDING PERMIT WILL BE ISSUED ON SAID LOTS UNTIL AND UNLESS THE TOWN ENGINEER HAS RECEIVED AND APPROVED THE SITE PLAN.
- I HEREBY STATE THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AND THIS IS A CATEGORY 1 SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS 1:15,715.

BY: *[Signature]* DATE: JULY 25, 2018  
JOHN T. DARNALL, TN RLS #1571

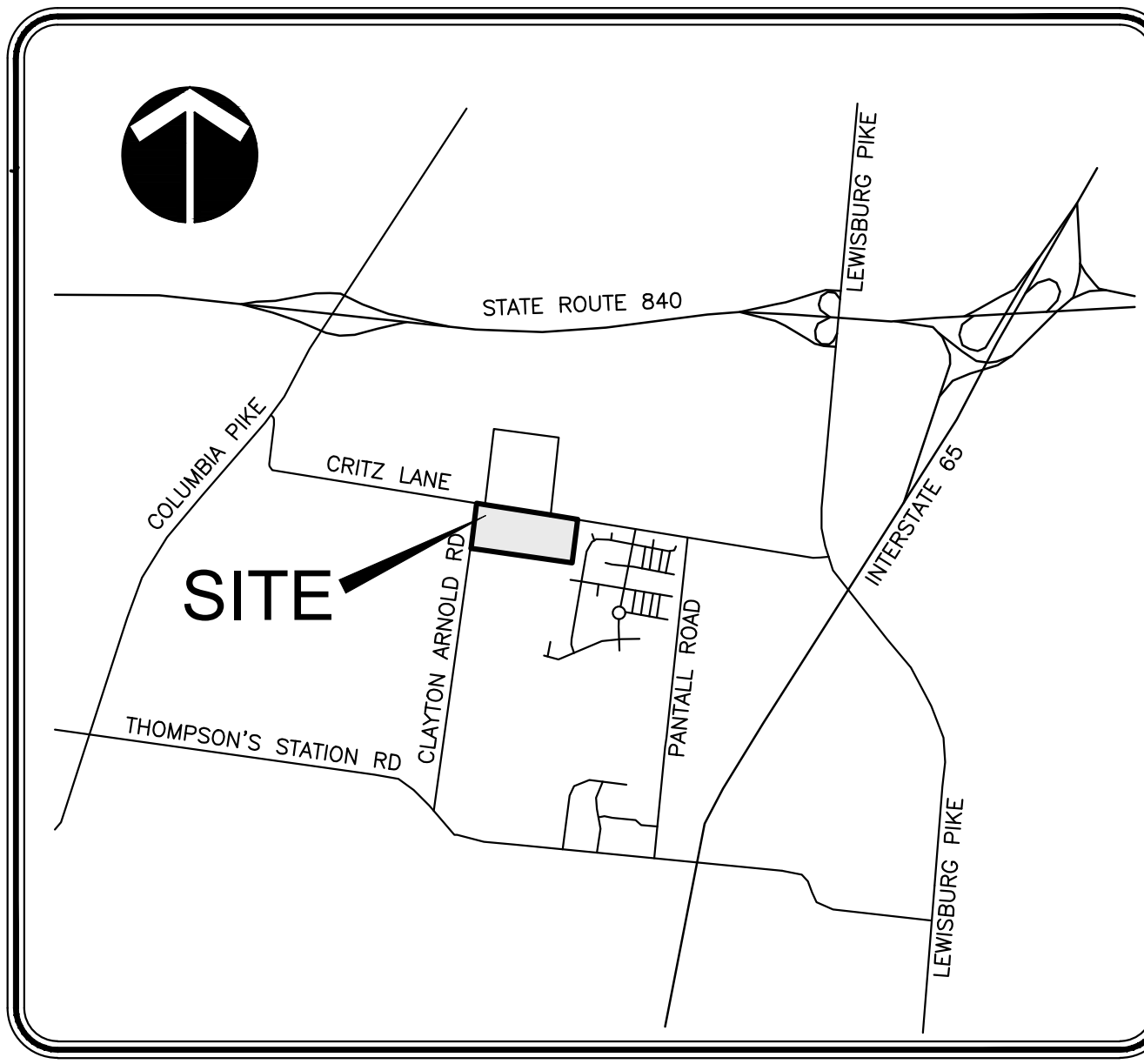
- ALL OPEN SPACE IS A PUBLIC UTILITY AND DRAINAGE EASEMENT.
- STREET LIGHT LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATION TO BE COORDINATED WITH MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION.

**DEED REFERENCE**

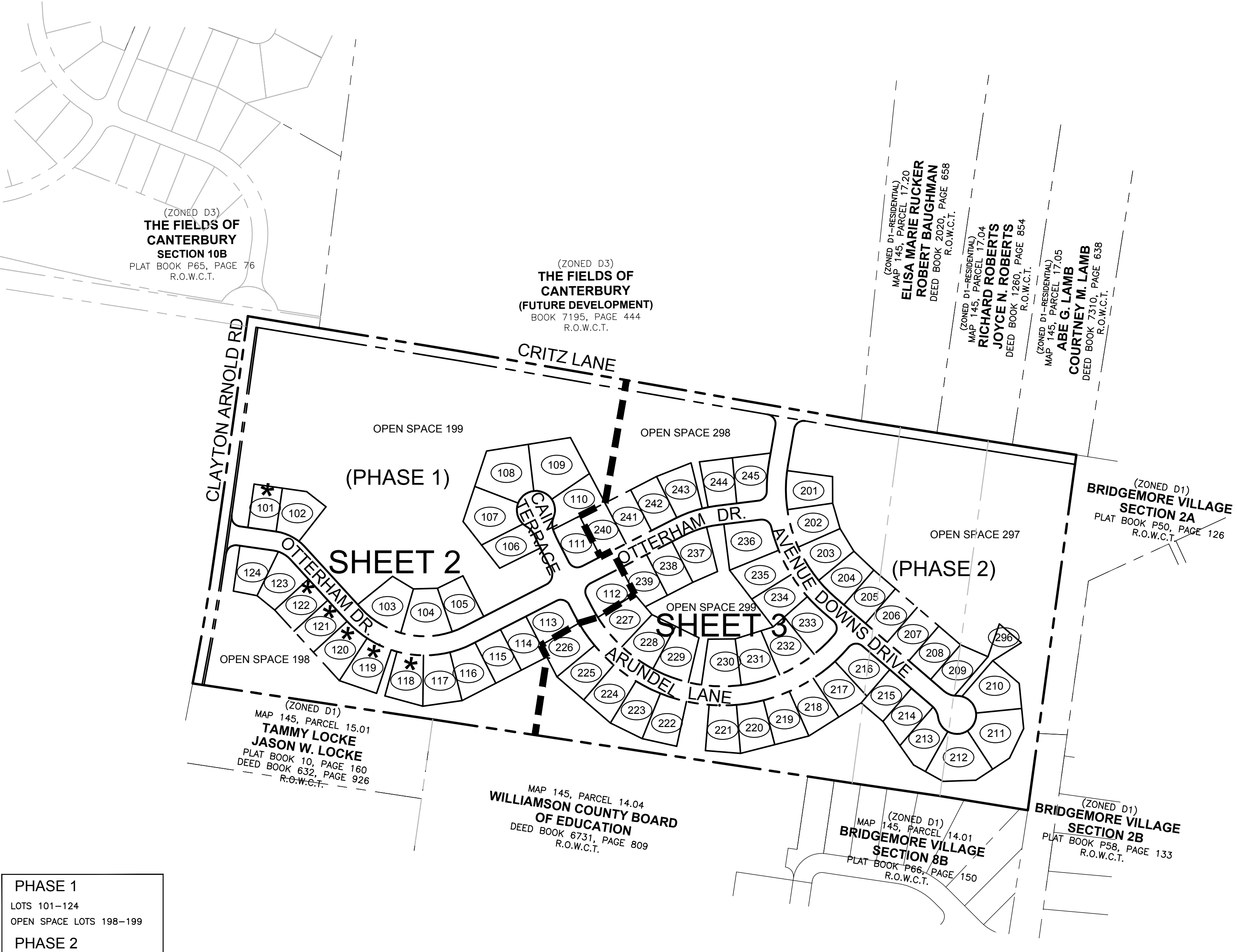
BEING THE SAME PROPERTY CONVEYED TO BYRD D. CAIN, JR. FROM AMBER LANE DEVELOPMENT, LLC BY WARRANTY DEED OF RECORD IN BOOK 7258, PAGE 303, REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TENNESSEE.

**PROPERTY MAP REFERENCE**

BEING PARCEL NUMBERS 6.01, 6.02, AND 6.03 AS SHOWN ON WILLIAMSON COUNTY PROPERTY MAP NUMBER 145.



LOCATION MAP  
N.T.S.



PHASE 1	
LOTS 101-124	
OPEN SPACE LOTS 198-199	
PHASE 2	
LOTS 201-245	
OPEN SPACE LOTS 297-299	
PUMP STATION LOT 296	

SITE DATA TABLE (PH. 1 & 2)	
TOTAL LOT AREA	- 16.61 ACRES±
TOTAL OPEN SPACE AREA	- 25.08 ACRES±
PUMP STATION LOT 296	- 0.14 ACRES±
TOTAL CRITZ, LN R.O.W. IN USE AREA	- 1.26 ACRES±
TOTAL CLAYTON ARNOLD RD. R.O.W. IN USE AREA	- 0.54 ACRES±
TOTAL CLAYTON ARNOLD RD. R.O.W. DEDICATION	- 0.11 ACRES±
TOTAL INTERNAL R.O.W. AREA	- 4.48 ACRES±
TOTAL SITE AREA	- 48.22 ACRES±
TOTAL LINEAR FEET OF ROAD	- 3,797 FEET

**SURVEYOR:**  
RAGAN-SMITH ASSOCIATES, INC.  
TOM DARNALL, RLS  
315 WOODLAND STREET  
NASHVILLE, TENNESSEE 37206  
(615) 244-8591

**OWNER / DEVELOPER:**  
AMBER LANE DEVELOPMENT, LLC  
C/O JORDAN CLARK  
1804 WILLIAMSON COURT, SUITE 107  
BRENTWOOD, TENNESSEE 37027  
(615) 794-6401

LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
101	8,625	0.20
102	11,334	0.26
103	12,166	0.28
104	12,270	0.28
105	9,978	0.23
106	9,532	0.22
107	14,521	0.33
108	16,625	0.38
109	17,293	0.40
110	10,498	0.24
111	9,456	0.22
112	9,432	0.22
113	9,308	0.21
114	9,000	0.21
115	9,000	0.21
116	10,447	0.24
117	11,238	0.26
118	10,690	0.25
119	10,665	0.24
120	10,473	0.24
121	9,000	0.21
122	9,000	0.21
123	10,475	0.24
124	10,145	0.23
201	10,452	0.24
202	10,452	0.24
203	10,452	0.24
204	9,908	0.23
205	9,000	0.21
206	9,000	0.21
207	9,000	0.21
208	9,000	0.21
209	9,805	0.23
210	13,160	0.30
211	15,026	0.34

LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
212	15,026	0.34
213	10,496	0.24
214	9,326	0.21
215	8,625	0.20
216	10,110	0.23
217	10,154	0.23
218	10,101	0.23
219	10,036	0.23
220	10,036	0.23
221	10,036	0.23
222	10,036	0.23
223	10,428	0.24
224	10,113	0.23
225	10,113	0.23
226	9,878	0.23
227	9,838	0.23
228	10,270	0.24
229	10,436	0.24
230	10,800	0.25
231	10,946	0.25
232	10,901	0.25
233	10,773	0.25
234	9,765	0.22
235	10,628	0.24
236	13,053	0.30
237	10,237	0.24
238	9,000	0.21
239	8,795	0.20
240	9,000	0.21
241	9,000	0.21
242	9,081	0.21
243	10,041	0.23
244	9,757	0.22
245	10,433	0.24

OPEN SPACE LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
198	113,106	2.60
199	436,381	10.02
297	424,739	9.75
298	74,390	1.71
299	44,025	1.01

PUMP STATION LOT AREA		
LOT	SQ. FT.±	ACRES±
296	5,939	0.14



- LEGEND**
- OS OPEN SPACE
  - R.O.W. R.O.W.
  - R.O.W.C.T. REGISTER'S OFFICE WILLIAMSON COUNTY, TENNESSEE
  - \* CRITICAL LOT (SEE NOTE 12)

**RAGAN-SMITH**  
LAND PLANNERS • CIVIL ENGINEERS  
LANDSCAPE ARCHITECTS • SURVEYORS  
NASHVILLE  
315 WOODLAND STREET  
NASHVILLE, TN 37206  
(615) 244-8591  
www.ragan-smith.com

**AVENUE DOWNS PHASES 1 AND 2**  
TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	0646	DESIGNED:	N/A	DATE:	JULY 25, 2018
JOB NO.	16-107	DRAWN:	AMR	REV. #	
SCALE:	1"=200'	DESCRIPTION:			

**PRELIMINARY PLAT**

**1 OF 3**

01/15/2018 09:45:10 AM C:\PROJECTS\16-107\16-107\_P1\16-107\_P1.dwg PLOTTED BY: AMR ON: 7/25/18 11:27 AM. LAST UPDATED BY: AMR ON: 7/25/18 11:27 AM



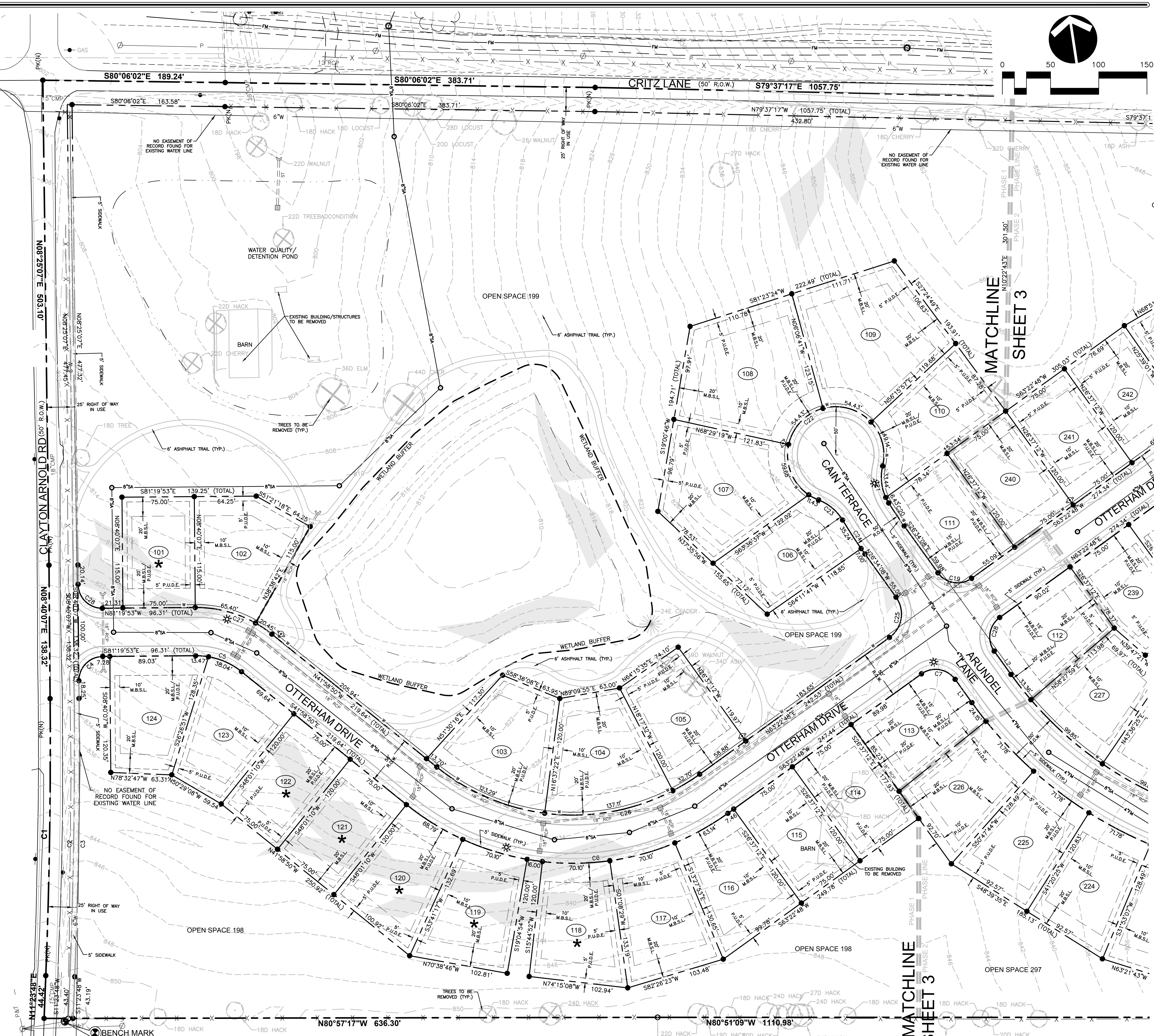
GENERAL NOTES  
SEE SHEET 1 FOR NOTES, REFERENCES AND AREA TABLES.

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHD BRG
C8	435.00'	851.74'	112°11'13"	647.19	722.06'	S82°39'44"E
C9	25.00'	39.27'	90°00'00"	25.00	35.36'	S86°14'40"W
C10	50.00'	36.14'	41°24'35"	18.90	35.36'	N28°03'03"W
C11	50.00'	229.35'	262°49'09"	56.69	75.00'	N41°14'40"E
C12	50.00'	36.14'	41°24'35"	18.90	35.36'	S69°27'38"E
C13	375.00'	387.03'	59°08'03"	212.75	370.08'	S19°11'19"E
C14	25.00'	39.27'	90°00'00"	25.00	35.36'	S55°22'43"W
C15	25.00'	39.27'	90°00'00"	25.00	35.36'	N34°37'17"W
C16	425.00'	77.99'	10°30'51"	39.11	77.88'	S05°07'17"W
C17	25.00'	36.49'	83°37'14"	22.36	33.33'	N41°40'29"E
C18	325.00'	114.04'	20°06'18"	57.61	113.46'	S73°25'57"W
C29	275.00'	96.50'	20°06'18"	48.75	96.00'	S73°25'57"W
C30	25.00'	36.49'	83°37'14"	22.36	33.33'	N54°42'17"W
C31	425.00'	266.01'	35°51'41"	137.52	261.69'	S30°49'30"E
C32	25.00'	39.27'	90°00'00"	25.00	35.36'	N03°45'20"W
C33	385.00'	753.84'	112°11'13"	572.80	639.06'	S82°39'44"E

LINE	BEARING	DISTANCE
L1	S26°34'08"E	29.75'
L2	S26°34'08"E	29.84'

**LEGEND**

●	IRON ROD (NEW) (1/2" x 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")	⊕	FIRE HYDRANT
○	IRON ROD (OLD)	⊕	WATER VALVE
⊠	CABLE TV BOX	⊕	WATER METER
⊞	ELECTRIC BOX	—SA—	SANITARY SEWER LINE
⊞	CATCH BASIN	—RCP—	REINFORCED CONCRETE PIPE
⊞	SANITARY SEWER MANHOLE	—SI—	PROPOSED STORM PIPE
⊞	STREET LIGHT	—X—X—	FENCE
⊞	LOT NUMBER	P.U.D.E.	PUBLIC UTILITY DRAINAGE EASEMENT
R.O.W.	RIGHT-OF-WAY	R.O.W.	RIGHT-OF-WAY
⊞	DECIDUOUS TREE	M.B.S.L.	MINIMUM BUILDING SETBACK LINE
⊞	EVERGREEN TREE	CONCRETE SURFACE	
*	CRITICAL LOT (SEE NOTE 12)	15-25% SLOPES	
R.O.W.C.T.	REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TN	SLOPES IN EXCESS OF 25%	



(ZONED D1)  
MAP 145, PARCEL 15.01  
**TAMMY LOCKE**  
**JASON W. LOCKE**  
PLAT BOOK 10, PAGE 160  
DEED BOOK 632, PAGE 926  
R.O.W.C.T.

**RAGAN SMITH**  
LAND PLANNERS • CIVIL ENGINEERS  
LANDSCAPE ARCHITECTS • SURVEYORS  
CHATTANOOGA  
145 WOODLAND STREET  
NASHVILLE, TN 37208  
(615) 244-8891  
www.ragan-smith.com

**AVENUE DOWNS**  
**PHASES 1 AND 2**  
TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	NO.	DESIGNED	DRAWN	SCALE	DATE	REV.	DESCRIPTION
16107	0646	N/A	AMR	1"=50'	JULY 25, 2018		

**PRELIMINARY PLAT**

**2 OF 3**



**GENERAL NOTES**  
SEE SHEET 1 FOR NOTES, REFERENCES AND AREA TABLES.

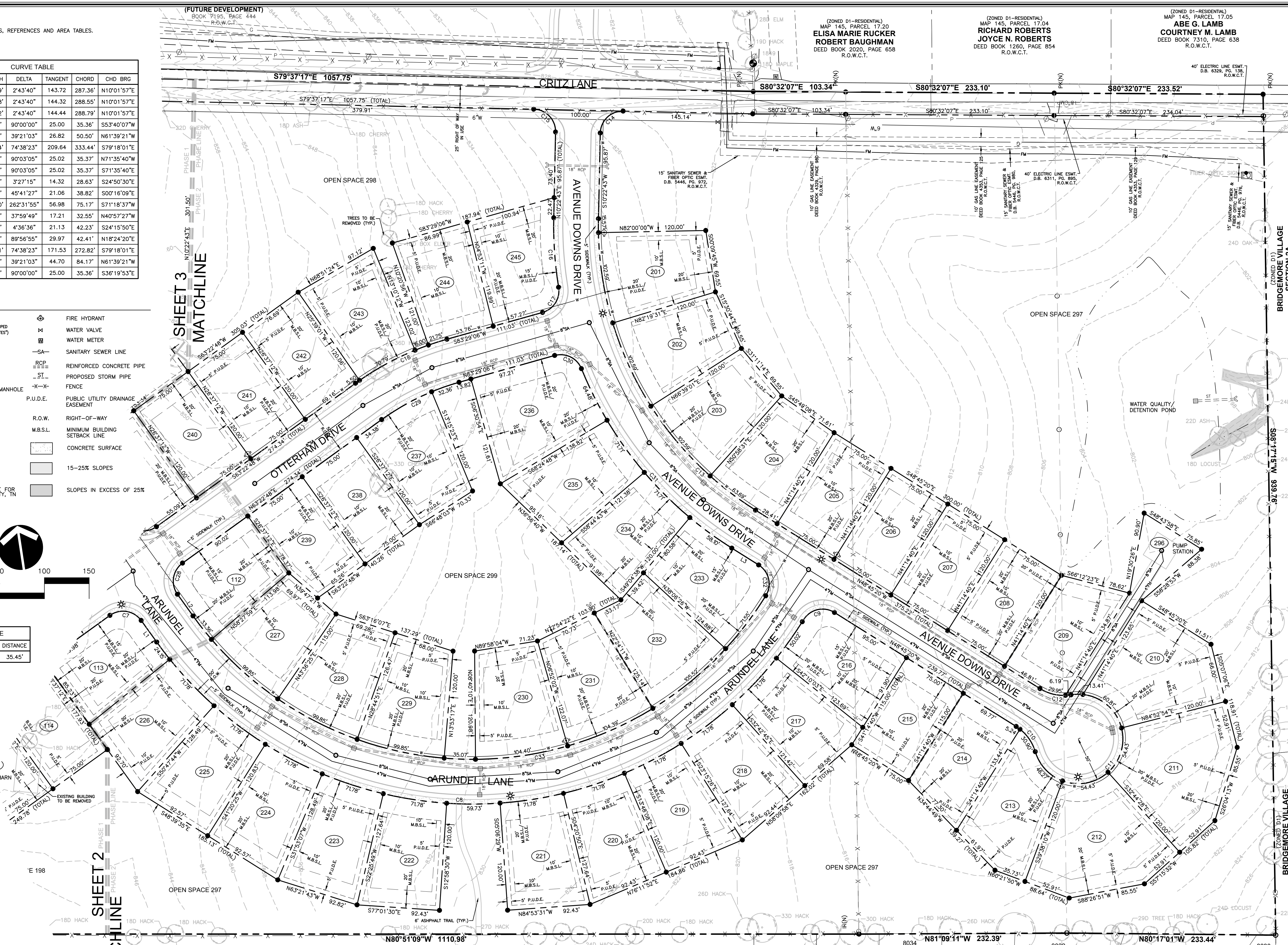
CURVE TABLE					
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHD BRG
C1	6036.20'	287.39'	2°43'40"	143.72	287.36' N10°01'57"E
C2	6061.20'	288.58'	2°43'40"	144.32	288.55' N10°01'57"E
C3	6066.20'	288.82'	2°43'40"	144.44	288.79' N10°01'57"E
C4	25.00'	39.27'	90°00'00"	25.00	35.36' S53°40'07"W
C5	75.00'	51.51'	39°21'03"	26.82	50.50' N61°39'21"W
C6	275.00'	358.24'	74°38'23"	209.64	333.44' S79°18'01"E
C7	25.00'	39.29'	90°03'05"	25.02	35.37' N71°35'40"W
C19	25.00'	39.29'	90°03'05"	25.02	35.37' S71°35'40"E
C20	475.00'	28.64'	3°27'15"	14.32	28.63' S24°50'30"E
C21	50.00'	39.87'	45°41'27"	21.06	38.82' S00°16'09"E
C22	50.00'	229.10'	262°31'55"	56.98	75.17' S71°18'37"W
C23	50.00'	33.16'	3°59'49"	17.21	32.55' N40°57'27"W
C24	525.00'	42.24'	4°36'36"	21.13	42.23' S24°15'50"E
C25	30.00'	47.10'	89°56'55"	29.97	42.41' N18°24'20"E
C26	225.00'	293.11'	74°38'23"	171.53	272.82' S79°18'01"E
C27	125.00'	85.85'	39°21'03"	44.70	84.17' N61°39'21"W
C28	25.00'	39.27'	90°00'00"	25.00	35.36' S36°19'53"E

**LEGEND**

●	IRON ROD (NEW)	⊕	FIRE HYDRANT
○	IRON ROD (OLD)	⊕	WATER VALVE
⊠	CABLE TV BOX	⊕	WATER METER
⊠	ELECTRIC BOX	—SA—	SANITARY SEWER LINE
⊠	CATCH BASIN	—RCP—	REINFORCED CONCRETE PIPE
⊠	SANITARY SEWER MANHOLE	—ST—	PROPOSED STORM PIPE
⊠	LIGHT STANDARD	—X—X—	FENCE
⊠	LOT NUMBER	P.U.D.E.	PUBLIC UTILITY DRAINAGE EASEMENT
⊠	R.O.W.	R.O.W.	RIGHT-OF-WAY
⊠	DECIDUOUS TREE	M.B.S.L.	MINIMUM BUILDING SETBACK LINE
⊠	EVERGREEN TREE	CONCRETE SURFACE	
⊠	CRITICAL LOT (SEE NOTE 12)	15-25% SLOPES	
⊠	R.O.W.C.T.	SLOPES IN EXCESS OF 25%	

**LINE TABLE**

LINE	BEARING	DISTANCE
L3	N48°45'20"W	35.45'



DATE PLOTTED: 07/25/2018 10:00 AM  
 PLOTTED BY: AMR  
 PLOT SCALE: 1"=50'  
 PLOT SHEET: 3 OF 3

MAP 145, PARCEL 14.04  
**WILLIAMSON COUNTY BOARD OF EDUCATION**  
 DEED BOOK 6731, PAGE 809  
 R.O.W.C.T.

(ZONED D1)  
 MAP 145, PARCEL 14.01  
**BRIDGEMORE VILLAGE SECTION 8B**  
 PLAT BOOK P66, PAGE 150  
 R.O.W.C.T.

(ZONED D1-RESIDENTIAL)  
 MAP 145, PARCEL 17.20  
**ELISA MARIE RUCKER**  
**ROBERT BAUGHMAN**  
 DEED BOOK 2020, PAGE 658  
 R.O.W.C.T.

(ZONED D1-RESIDENTIAL)  
 MAP 145, PARCEL 17.04  
**RICHARD ROBERTS**  
**JOYCE N. ROBERTS**  
 DEED BOOK 1260, PAGE 854  
 R.O.W.C.T.

(ZONED D1-RESIDENTIAL)  
 MAP 145, PARCEL 17.05  
**ABE G. LAMB**  
**COURTNEY M. LAMB**  
 DEED BOOK 7310, PAGE 638  
 R.O.W.C.T.

**RAGAN SMITH**  
 CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTS • SURVEYORS  
 CHATTANOOGA, TN 37408  
 1415 COWARD STREET  
 CHATTANOOGA, TN 37408  
 (615) 244-8991  
 www.ragan-smith.com



**AVENUE DOWNS**  
**PHASES 1 AND 2**

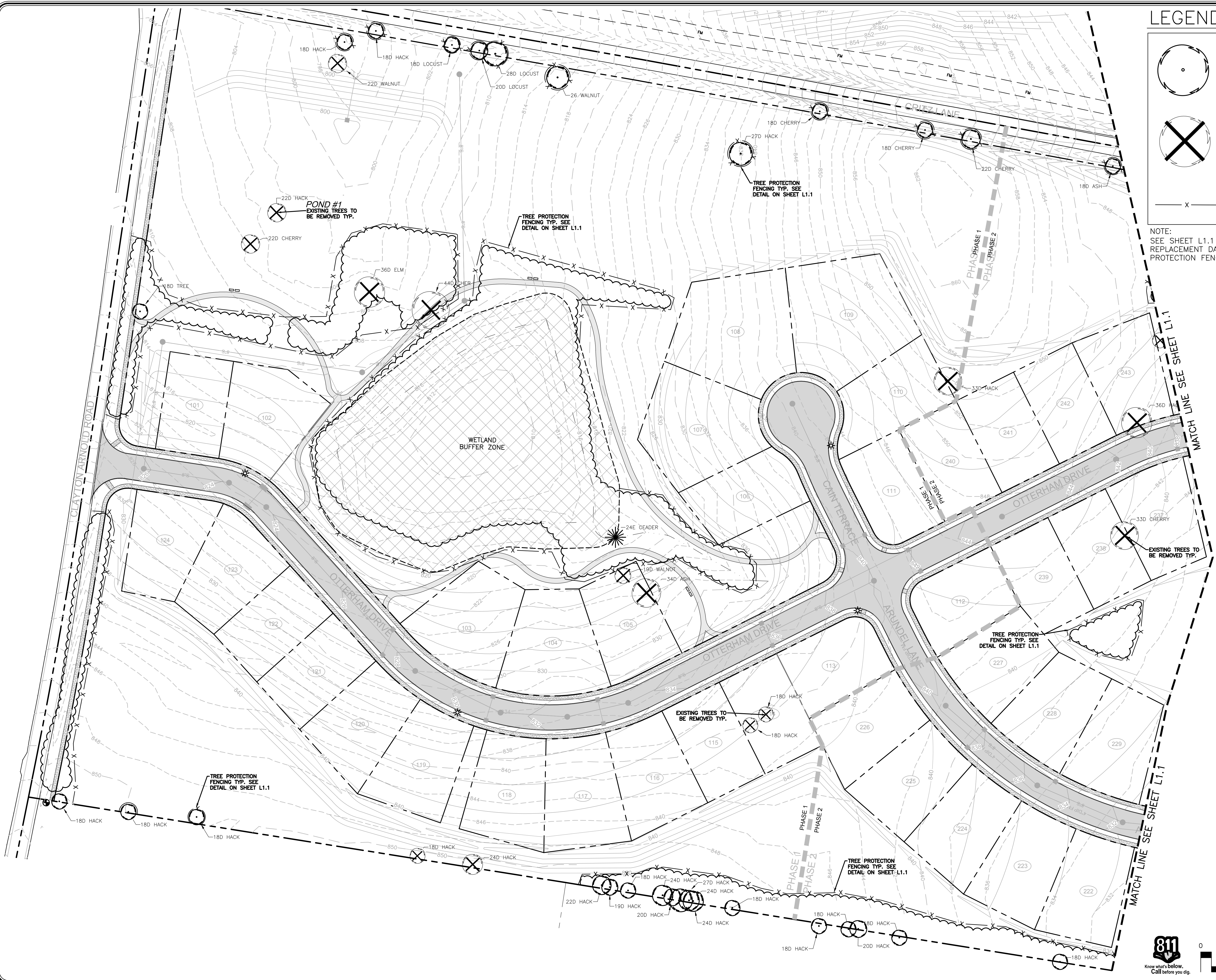
TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

DATE	REV	DESCRIPTION
JULY 25, 2018	1	PRELIMINARY PLAT

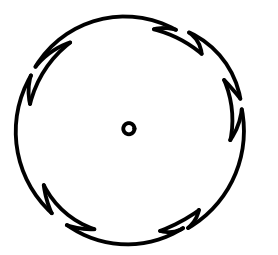
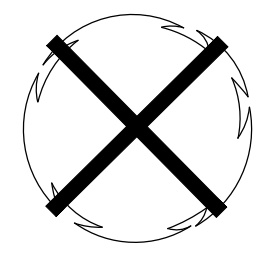
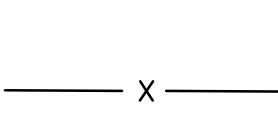
PRELIMINARY PLAT  
**3 OF 3**



CIVIL ENGINEER ARCHITECTS SURVEYORS  
 PLOTTED BY TROY G. ANDERSON ON 08/07/2018 10:42 AM LAYOUT BY TROY G. ANDERSON 08/07/2018 10:42 AM



### LEGEND

-  EXISTING TREES TO REMAIN
-  EXISTING TREES TO BE REMOVED
-  TREE PROTECTION FENCING

NOTE:  
SEE SHEET L1.1 FOR TREE PROTECTION/  
REPLACEMENT DATA TABLE AND TREE  
PROTECTION FENCING DETAIL.

**RAGAN SMITH**  
 LAND PLANNERS • CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTS • SURVEYORS  
 Chattanooga, TN 37403  
 Nashville, TN 37203  
 Murfreesboro, TN 37132  
 423-490-9400  
 615-548-6050  
 ragan-smith.com

**AVENUE DOWNS**  
 FOR  
**AMBER LANE DEVELOPMENT, LLC**  
 TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

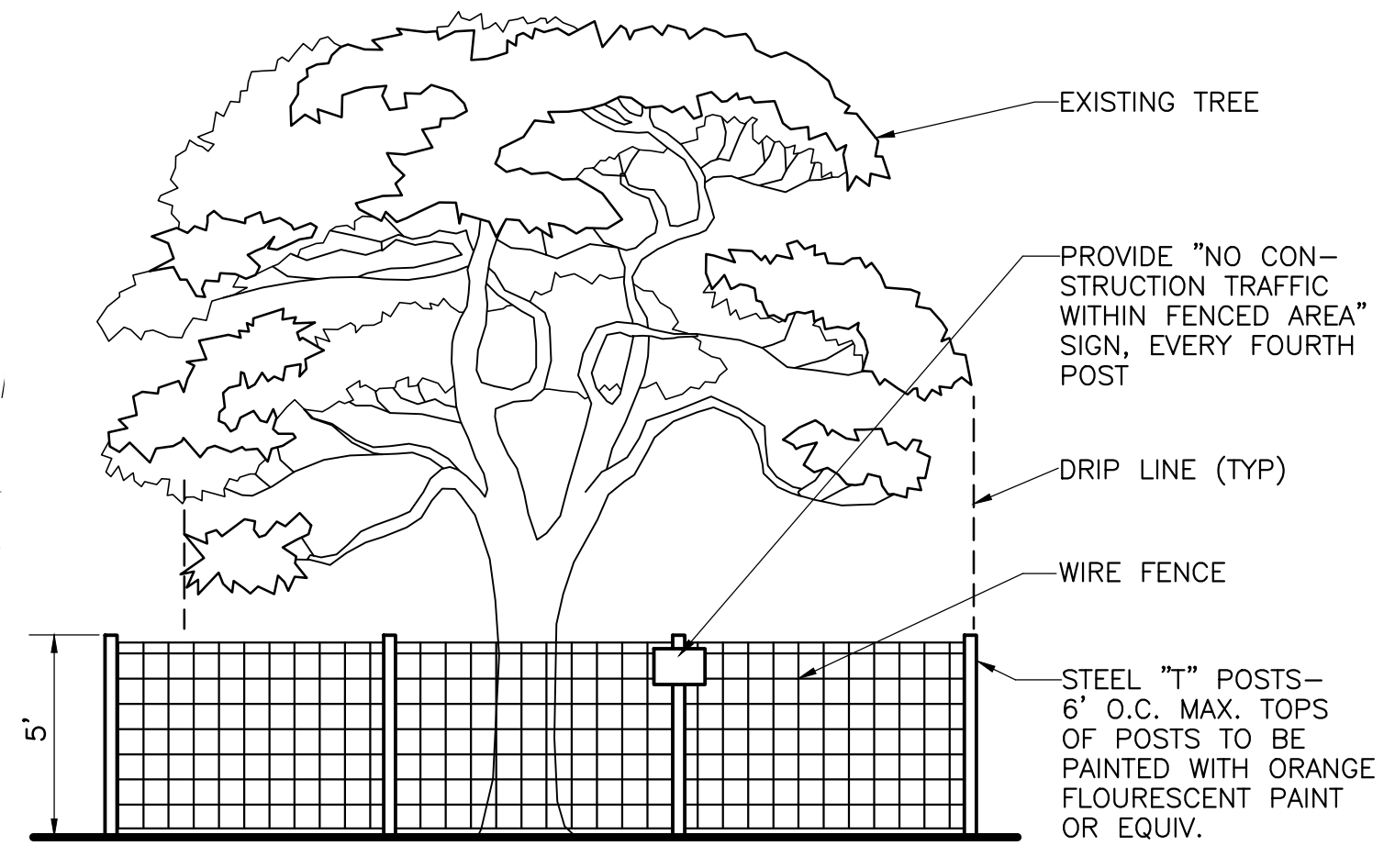
JOB NO.	WK. ORDER	DESIGNED:	DRAWN:	SCALE:	DATE:	REV.	DATE:	DESCRIPTION:
16107	0646	H. GRIMES	H. GRIMES	1"=50'	JULY 25, 2018			

**TREE REMOVAL PLAN**

## L1.0

811  
Know what's below.  
Call before you dig.





**TREE PROTECTION DETAIL**  
 NOT TO SCALE

**NOTE:**  
 ALL TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO THE ISSUANCE OF A GRADING PERMIT.

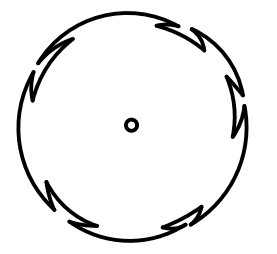
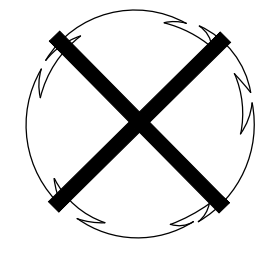
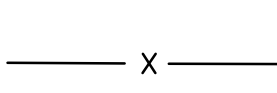
**NOTE:**  
 POSTS TO BE PLACED AT 1.5 x DRIP LINE - SEE PLANS FOR FENCE LOCATION.

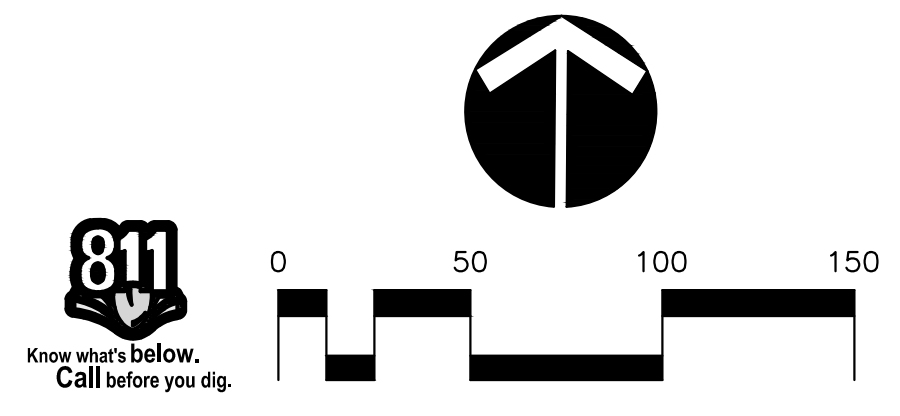


**TREE PROTECTION / REPLACEMENT DATA TABLE**

TREE UNITS PROVIDED FROM EXISTING TREES		
REMOVED TREE SIZES	QUANTITY	UNITS PER TREE
18"	6	108
19"	1	19
22"	4	88
24"	1	24
33"	2	66
34"	1	34
36"	2	72
44"	1	44
<b>TOTAL TREES TO BE REMOVED</b>	<b>18</b>	
<b>TOTAL UNITS TO BE REMOVED</b>		<b>455</b>
<b>TOTAL REPLACEMENT UNITS REQUIRED</b>		<b>455x1.5 = 682.5</b>
<b>TOTAL REPLACEMENT UNITS PROVIDED</b>		<b>684</b>

**LEGEND**

-  EXISTING TREES TO REMAIN
-  EXISTING TREES TO BE REMOVED
-  TREE PROTECTION FENCING



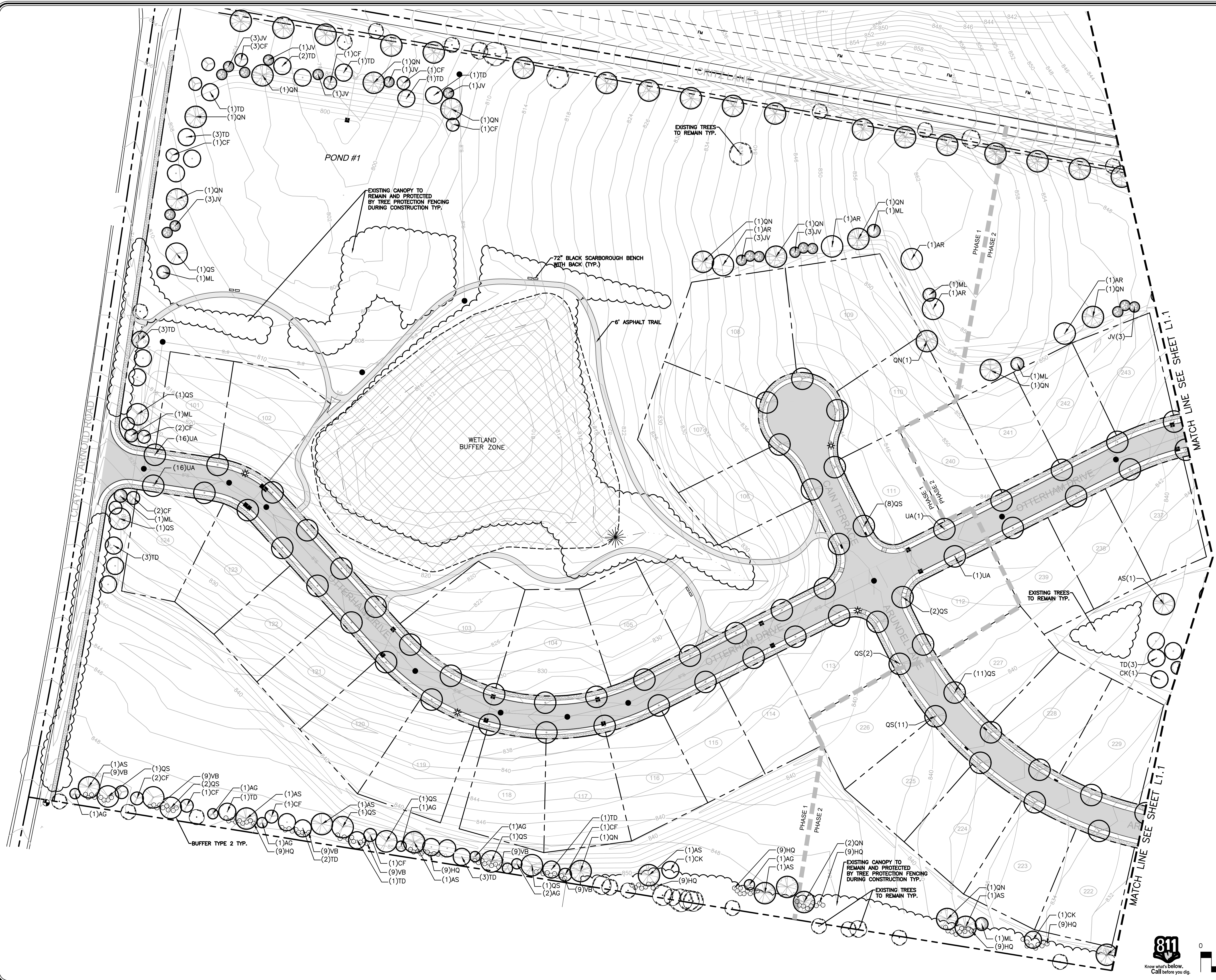
**AVENUE DOWNS**  
 FOR  
**AMBER LANE DEVELOPMENT, LLC**  
 TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	0646	DESIGNED:	H. GRIMES	DRAWN:	H. GRIMES	SCALE:	1"=50'	DATE:	JULY 25, 2018	REV. #	DESCRIPTION:
JOB NO.	16107										

**TREE REMOVAL PLAN**  
**L1.1**

CIVIL ENGINEER LICENSE NO. 35004  
 LANDSCAPE ARCHITECT LICENSE NO. 10359  
 SURVEYOR LICENSE NO. 10359  
 PLOTTED BY ANDREW TAYLOR ON 7/25/18 10:54 AM. LAST UPDATED BY A.T. ON 7/25/18 10:54 AM.

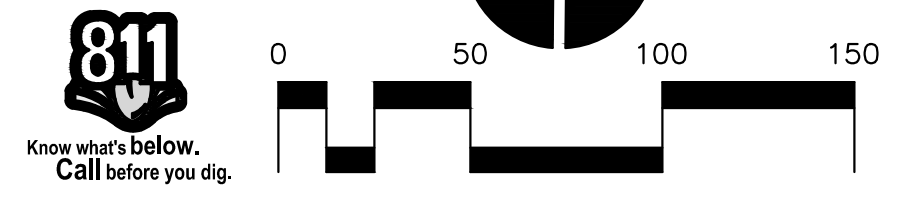




**AVENUE DOWNS**  
 FOR  
**AMBER LANE DEVELOPMENT, LLC**  
 TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	NO.	DESIGNED BY	DRAWN BY	SCALE	DATE	DESCRIPTION
16107	0646	H. GRIMES	H. GRIMES	1"=50'	JULY 25, 2018	

**TRAIL & LANDSCAPE PLAN**  
**L2.0**



DATE PLOTTED: 07/25/2018 10:54 AM  
 PLOTTED BY: ANDREW WATSON 1032582123.DWG, LAST UPDATED BY: AWP ON 10/20/18 10:54 AM

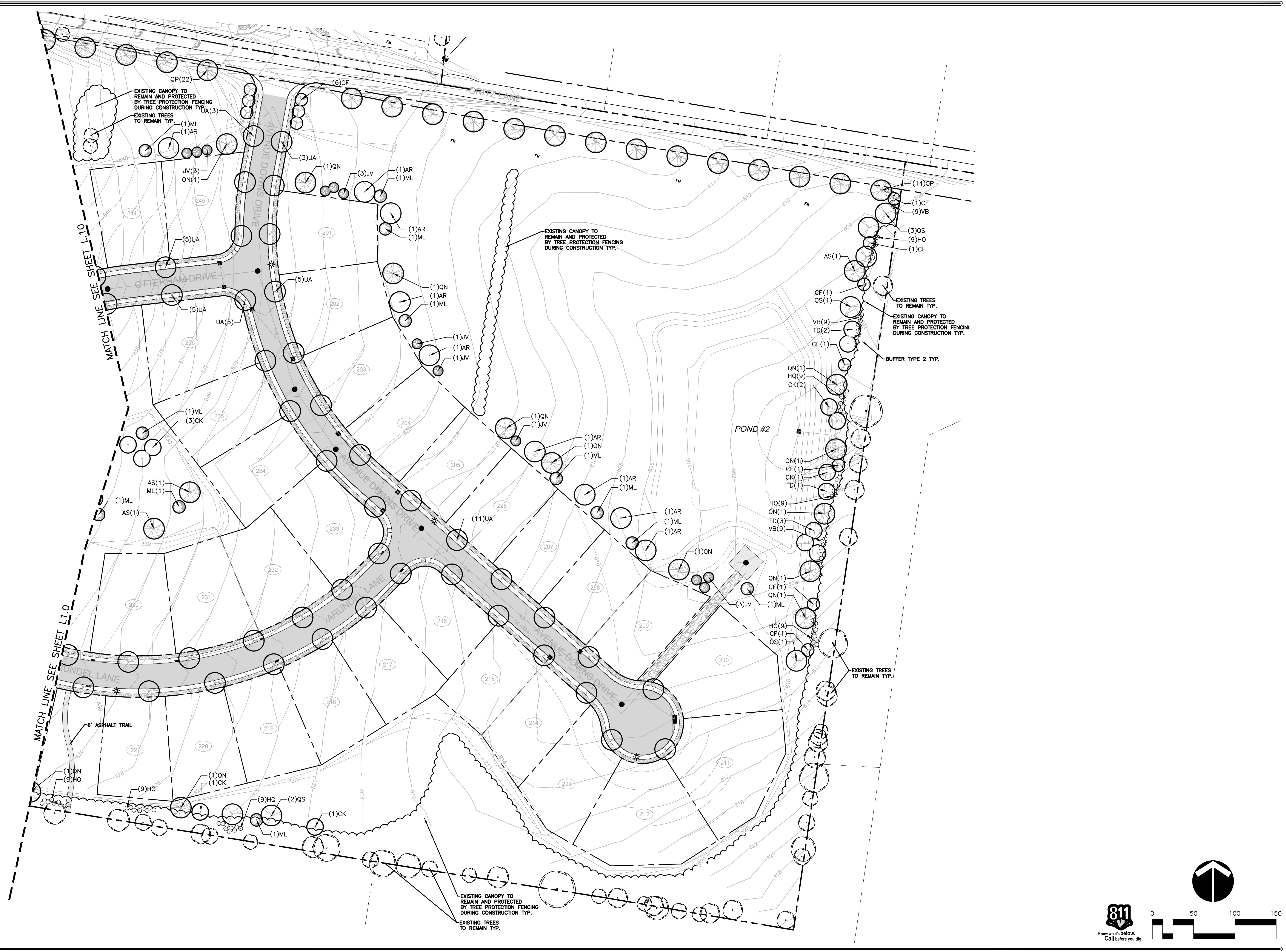


FOR  
**AVENUE DOWNS**  
**AMBER LANE DEVELOPMENT, LLC**  
 TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	0646	DESIGNED:	H. GRIMES	DRAWN:	H. GRIMES	SCALE:	1"=50'	DATE:	JULY 25, 2018	REV. #	DESCRIPTION:
JOB NO.	16107										

TRAIL &  
 LANDSCAPE PLAN

L2.1



CIVIL ENGINEER LICENSE NO. 32029-121-0000  
 LANDSCAPE ARCHITECT LICENSE NO. 15329-121-0000  
 PLOTTED BY ANDREW TAMBORIN 7/25/2018 11:54 AM. LAST UPDATED BY WJG ON 7/25/2018 11:54 AM



**PLANTING NOTES**

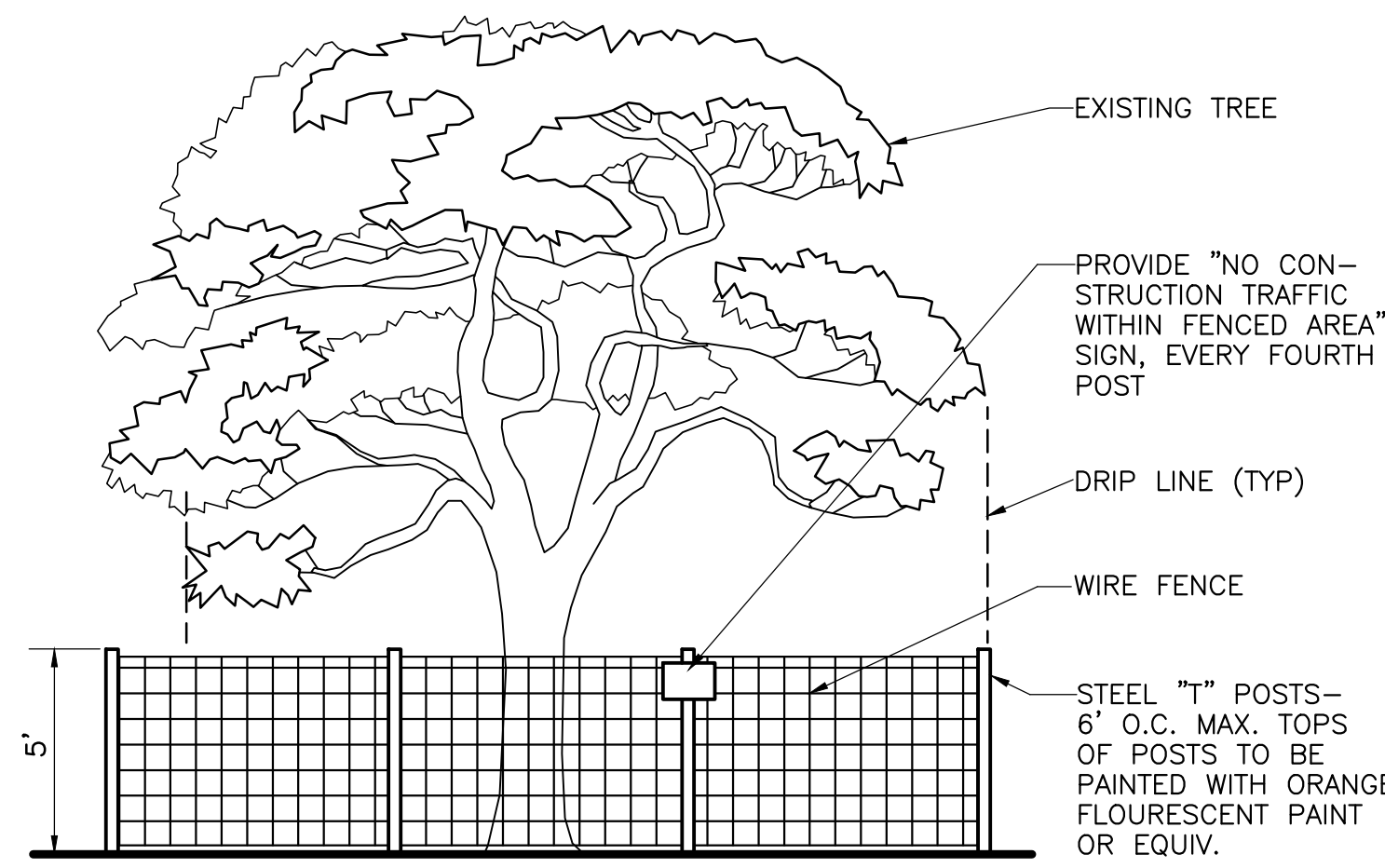
- ANY SERIES OF TREES TO BE PLACED IN A PARTICULAR ARRANGEMENT WILL BE FIELD CHECKED FOR ACCURACY. ANY PLANTS MISARRANGED WILL BE RELOCATED.
- SOIL USED IN BACKFILLING PLANTING PITS SHALL BE TOPSOIL AND MIXED WITH 25% PEAT BY VOLUME. EXCEPT FOR ERICACEOUS PLANTS, VERY ACID OR SOUR SOIL (SOIL HAVING A pH LESS THAN 6) SHALL BE MIXED WITH SUFFICIENT LIME TO PRODUCE A SLIGHTLY ACID REACTION (A pH OF 6.0 TO 6.5). ADD 10-10-10 COMMERCIAL FERTILIZER AT THE RATE OF 2 POUNDS PER CUBIC YARD. MIX BOTH FERTILIZER AND PEAT THOROUGHLY BY HAND OR ROTARY TILLER.
- SOIL USED IN BACKFILLING ERICACEOUS PLANTS SHALL BE TOPSOIL MIXED WITH 50% PEAT BY VOLUME. ADD 5-10-5 COMMERCIAL FERTILIZER AT THE RATE OF 5 POUNDS PER CUBIC YARD. MIX BOTH FERTILIZER AND PEAT THOROUGHLY BY HAND OR ROTARY TILLER.
- UPON SECURING PLANT MATERIAL AND BEFORE INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE FOR A PRE-INSTALLATION INSPECTION TO VERIFY ALL PLANT MATERIAL MEETS SPECIFICATION. MATCH TREES OF SAME SPECIES IN GROWTH CHARACTER AND UNIFORMITY.
- APPLY HERBICIDE (TRIFLUR OR EQUIVALENT) TO ALL PLANT BEDS PRIOR TO PLANTING FOR NOXIOUS WEED CONTROL AT A RATE OF 2 POUNDS PER 1,000 SQUARE FEET.
- CONTRACTOR SHALL SUBMIT A 10 OUNCE SAMPLE OF THE TOPSOIL PROPOSED TO A TESTING LABORATORY FOR ANALYSIS. SUBMIT TEST RESULTS WITH RECOMMENDATIONS FOR SUITABILITY TO THE OWNER'S REPRESENTATIVE FOR APPROVAL.
- PLANTS SHALL BE ORIENTED FOR BEST APPEARANCE AND VERTICAL. ALL NON-BIODEGRADABLE ROOT CONTAINERS SHALL BE REMOVED.
- SELECTIVELY TRIM TREE BRANCHES BY 25%, MAINTAINING NATURAL SHAPE. PRUNE ALL DEAD AND BROKEN BRANCHES IN TREES AND SHRUBS. REMOVE TAGS, TWINE OR OTHER NON-BIODEGRADABLE MATERIAL.
- SCARIFY SUBSOIL IN PLANTING BEDS TO A DEPTH OF 3 INCHES. ALL PLANTING BEDS SHALL RECEIVE A MINIMUM OF 6 INCHES OF TOPSOIL.
- CONTRACTOR SHALL PROVIDE SMOOTH, NEATLY TRENCHED (3 INCH DEEP) BED EDGES.
- ALL PLANTING BEDS TO HAVE A MINIMUM 4 INCH DEEP PINE BARK MULCH, PINE STRAW MULCH OR OTHER MULCH AS SPECIFIED.
- DIMENSIONS FOR TRUNK CALIPER, HEIGHTS, AND SPREAD SPECIFIED ON THE MATERIAL SCHEDULE ARE A GENERAL GUIDE FOR THE MINIMUM REQUIRED SIZE OF EACH PLANT. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH A.N.S.I. Z80 'AMERICAN STANDARD FOR NURSERY STOCK' (CURRENT EDITION) AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
- THE QUANTITIES INDICATED ON THE MATERIAL SCHEDULE ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR, BUT SHOULD NOT BE ASSUMED TO ALWAYS BE CORRECT. IN THE EVENT OF A DISCREPANCY, THE PLANTING PLAN (PLANT SYMBOLS) WILL TAKE PRECEDENCE OVER THE MATERIAL SCHEDULE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS/HER OWN QUANTITY CALCULATIONS AND THE LIABILITY PERTAINING TO THOSE QUANTITIES AND ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS.
- CONTRACTOR TO WARRANT ALL MATERIAL FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.

**SEEDING NOTES**

- SEED ALL DISTURBED AREAS WITH KY-31 AT THE RATE OF 5 POUNDS PER 1,000 S.F. SEED TO BE 98% PURE WITH 85% GERMINATION AND CONFORM TO ALL STATE REQUIREMENTS FOR GRASS SEED. THE FERTILIZER TO BE 6-12-12 COMMERCIAL TYPE WITH 50% OF ITS ELEMENTS DERIVED FROM ORGANIC SOURCES.
- PLACE STRAW MULCH ON SEEDED AREAS. STRAW TO BE OATS OR WHEAT STRAW, FREE FROM WEEDS, FOREIGN MATTER DETRIMENTAL TO PLANT LIFE, AND DRY. HAY OR CHOPPED CORNSTALKS ARE NOT ACCEPTABLE.
- THE CONTRACTOR SHALL VERIFY THAT THE PREPARED SOIL BASE IS READY TO RECEIVE WORK. CULTIVATE THE TOPSOIL TO A DEPTH OF 4 INCHES WITH A MECHANICAL TILLER AND SUBSEQUENTLY RAKE UNTIL SMOOTH. REMOVE FOREIGN MATERIALS COLLECTED DURING CULTIVATION AND RAKING OPERATIONS.
- APPLY FERTILIZER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. LIMESTONE MAY BE APPLIED WITH THE FERTILIZER. APPLY FERTILIZER AFTER SMOOTH RAKING AND PRIOR TO ROLLER COMPACTION AND MIX THOROUGHLY IN THE UPPER 2 INCHES OF TOPSOIL.
- APPLY SEED EVENLY IN TWO INTERSECTING DIRECTIONS AND RAKE IN LIGHTLY. WATER TOPSOIL LIGHTLY PRIOR TO APPLYING SEED. DO NOT SEED AREA IN EXCESS OF THAT WHICH CAN BE MULCHED ON THE SAME DAY.
- ROLL SEEDED AREA WITH ROLLER NOT EXCEEDING 112 POUNDS.
- IMMEDIATELY FOLLOWING SEEDING AND COMPACTION, APPLY STRAW MULCH AT THE RATE OF ONE AND ONE HALF BALES PER 1,000 SQUARE FEET. IMMEDIATELY AFTER MULCHING, APPLY WATER WITH A FINE SPRAY AND SATURATE THE GROUND TO A DEPTH OF 4 INCHES.
- CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS TO PREVENT GRASS AND SOIL FROM DRYING OUT UNTIL THE INSTALLATION IS INSPECTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE.
- CONTRACTOR IS RESPONSIBLE FOR RESEEDING BARE SPOTS FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF INSTALLATION.

**ROOT PRUNING NOTES**

- ROOT PRUNING SHALL BE PERFORMED ADJACENT TO ALL EXCAVATION NEXT TO THE CRITICAL ROOT ZONE TO A DEPTH OF 24 INCHES WITH A SHARP TRENCHER OR AN AIRSPADE. ROOTS 1.0 INCHES AND LESS IN DIAMETER SHOULD BE PRUNED WITH A SHARP BYPASS TYPE LOPPER. ROOTS GREATER THAN 1.0 INCH IN DIAMETER SHOULD BE PRUNED WITH A SHARP PRUNING SAW. THE TRENCH CREATED BY THE ROOT PRUNING SHALL BE BACKFILLED AS SOON AS POSSIBLE WITH TOPSOIL. THIS PROCEDURE SHALL BE PERFORMED OR SUPERVISED BY AN ISA CERTIFIED ARBORIST.
- ALL EQUIPMENT OPERATION, PARKING, SERVICING AND REFUELING SHOULD BE LOCATED AS FAR AWAY FROM THE CRITICAL ROOT ZONE OF PROTECTED TREES AS POSSIBLE. CEMENT TRUCK DISCHARGES AND RINSING SHOULD ALSO BE KEPT AT LEAST 50' AWAY FROM THE CRITICAL ROOT ZONE OF PROTECTED TREES.
- REMOVAL OF VEGETATION WITHIN THE CRITICAL ROOT ZONE INSIDE TREE PROTECTION AREAS SHALL BE SUPERVISED BY AN ISA CERTIFIED ARBORIST.
- TREES IMPACTED BY CONSTRUCTION SHOULD BE GETTING A VOLUME OF WATER COMPARABLE TO 1 INCH OF RAINFALL PER WEEK DURING THE GROWING SEASON (MARCH TO NOVEMBER). IF THERE IS NOT ADEQUATE RAINFALL TO PROVIDE THIS VOLUME, THE ROOT ZONE SHOULD BE SOAKED EVERY 7 TO 10 DAYS TO MAKE UP THE DEFICIT. THIS CAN BE ACCOMPLISHED WITH A LAWN SPRINKLER AND PLASTIC RAIN GAUGE.
- SUPERVISION OF DEMOLITION OF EXISTING STRUCTURES OR REMOVAL OF TREES ADJACENT TO TREES SELECTED FOR PRESERVATION SHALL BE SUPERVISED BY AN ISA CERTIFIED ARBORIST.

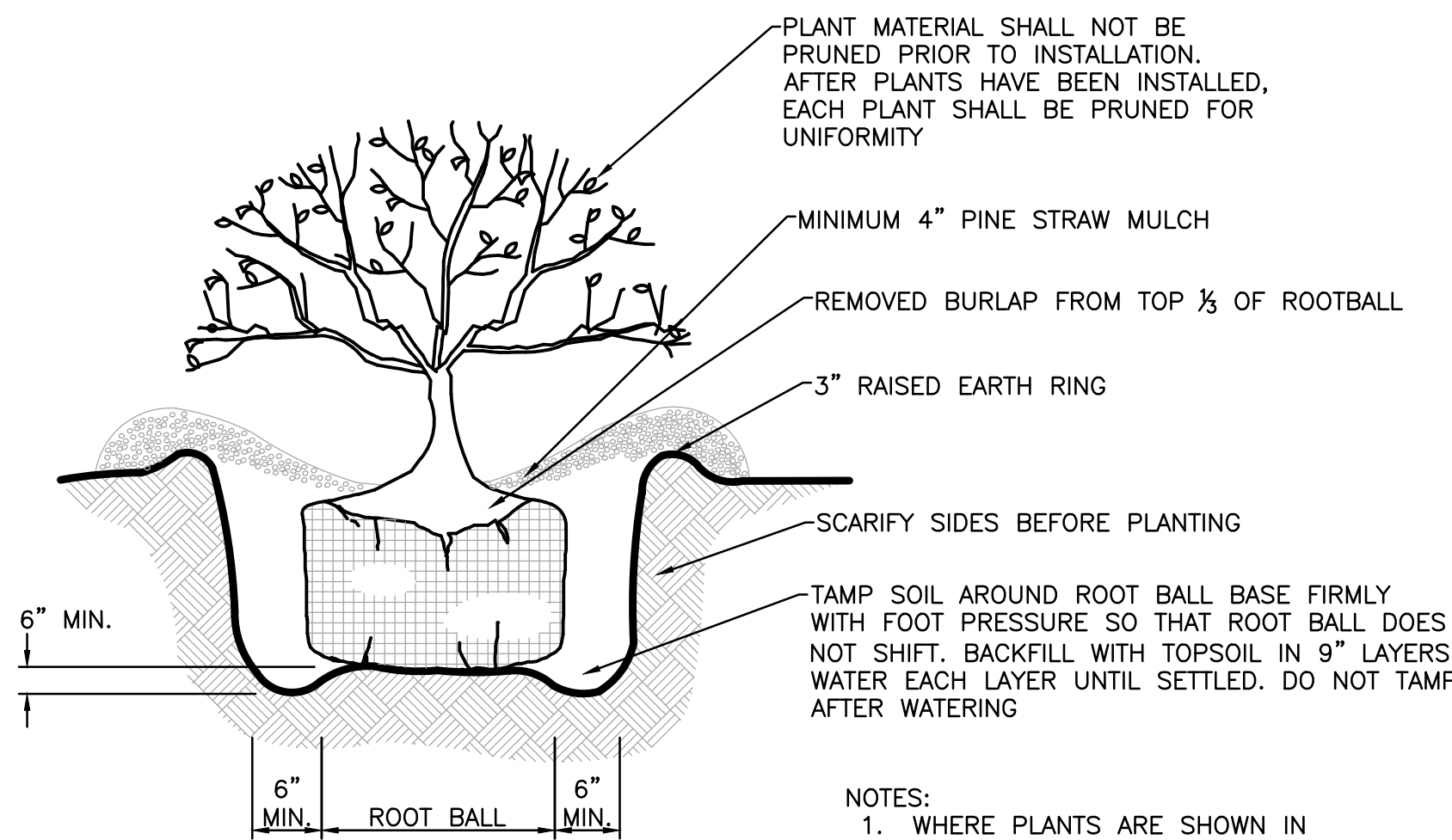


**TREE PROTECTION DETAIL**

NOT TO SCALE

**NOTE:**

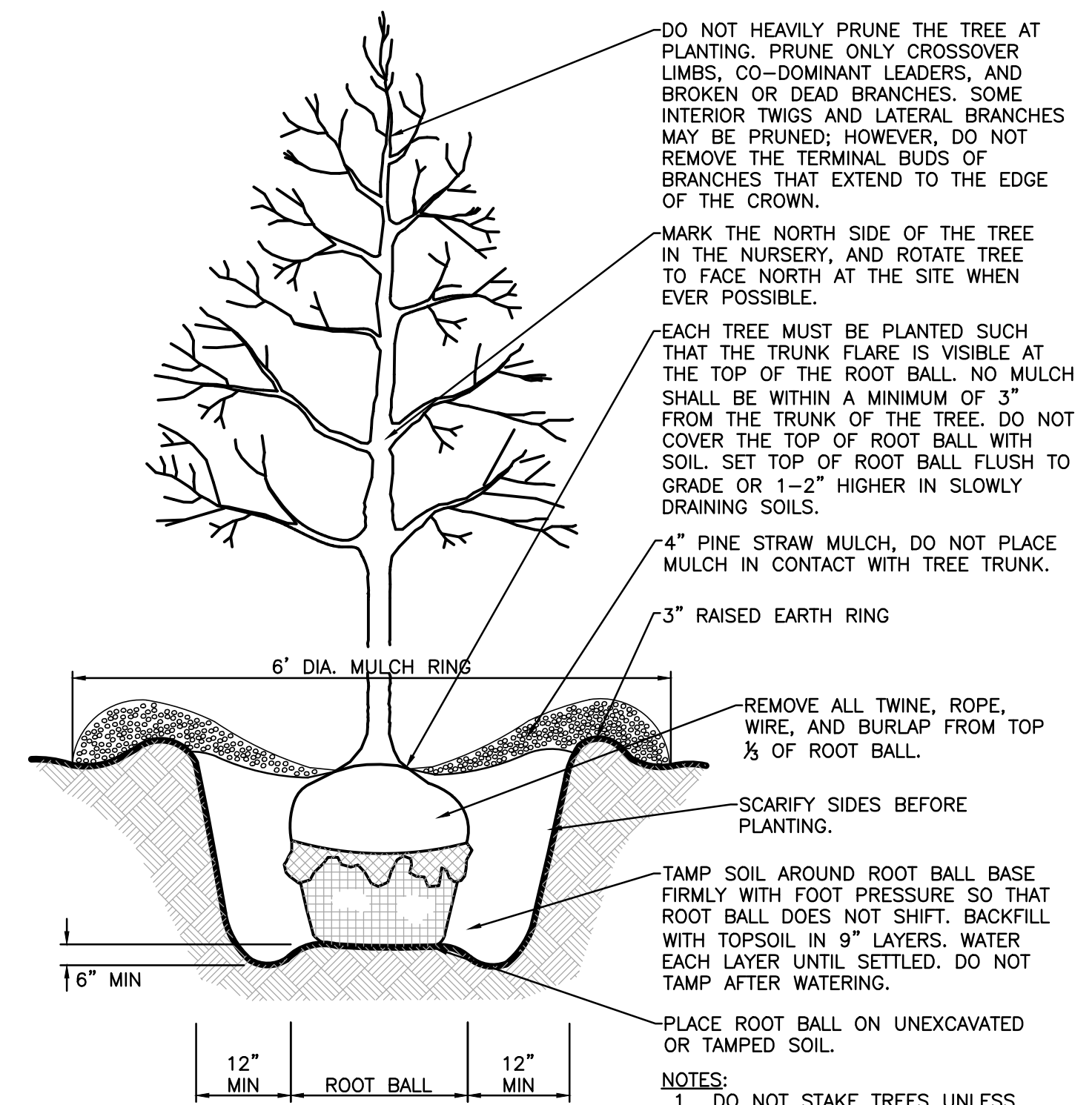
ALL TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO THE ISSUANCE OF A GRADING PERMIT.



**SHRUB PLANTING**

NOT TO SCALE

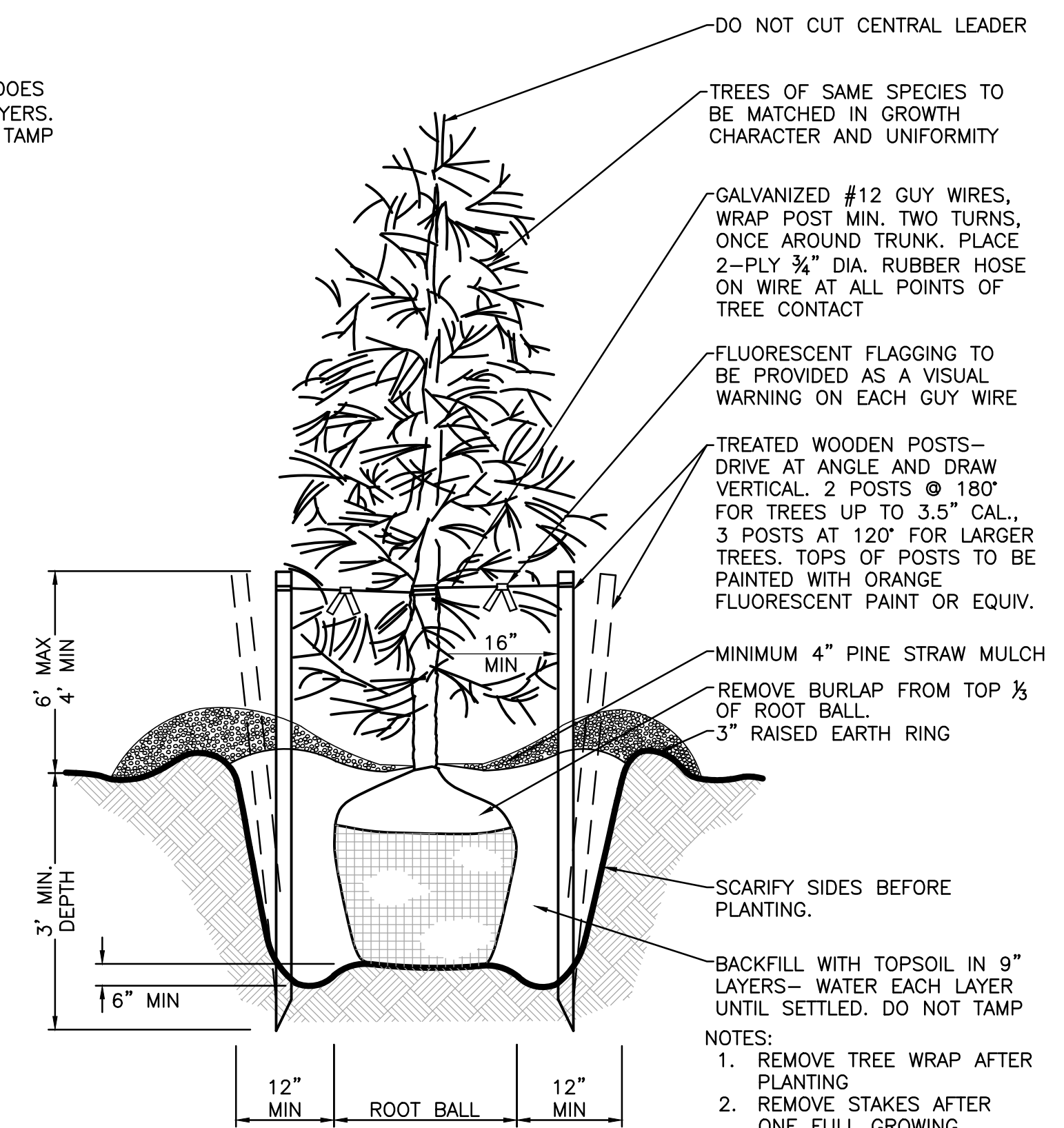
- NOTES:**
- WHERE PLANTS ARE SHOWN IN BEDS, MULCH SHALL COVER ENTIRE BED AS DENOTED ON THE PLANS.
  - CONTAINER GROWN PLANT MATERIAL MAY BE SUBSTITUTED FOR BURLAP MATERIAL.



**TREE PLANTING**

NOT TO SCALE

- NOTES:**
- DO NOT STAKE TREES UNLESS APPROVED BY THE LANDSCAPE ARCHITECT. IF STAKED, REMOVE AFTER ONE GROWING SEASON.
  - DO NOT WRAP TREE TRUNKS UNLESS APPROVED BY THE LANDSCAPE ARCHITECT. REMOVE WRAP AFTER PLANTING.
  - NON-BIODEGRADABLE BURLAP TO BE REMOVED OR ROLLED UNDER ROOT BALL AFTER PLANT IS PLACED IN HOLE.



**EVERGREEN TREE PLANTING**

NOT TO SCALE

- NOTES:**
- REMOVE TREE WRAP AFTER PLANTING.
  - REMOVE STAKES AFTER ONE FULL GROWING SEASON.
  - NON-BIODEGRADABLE BURLAP TO BE REMOVED OR ROLLED UNDER ROOT BALL AFTER PLANT IS PLACED IN HOLE.

TREE PROTECTION / REPLACEMENT DATA TABLE		
TREE UNITS PROVIDED FROM EXISTING TREES		
REMOVED TREE SIZES	QUANTITY	UNITS PER TREE
18"	6	108
19"	1	19
22"	4	88
24"	1	24
33"	2	66
34"	1	34
36"	2	72
44"	1	44
<b>TOTAL TREES TO BE REMOVED</b>	<b>18</b>	
<b>TOTAL UNITS TO BE REMOVED</b>		<b>455</b>
<b>TOTAL REPLACEMENT UNITS REQUIRED</b>		<b>455x1.5 = 682.5</b>
<b>TOTAL REPLACEMENT UNITS PROVIDED</b>		<b>684</b>

**PLANT SCHEDULE**

TREES	QTY	BOTANICAL NAME / COMMON NAME	TYPE	SIZE	HEIGHT	SPACING	REMARKS
AR	14	ACER RUBRUM 'OCTOBER GLORY' TM / OCTOBER GLORY MAPLE	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
AS	11	ACER SACCHARUM / SUGAR MAPLE	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
AG	8	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / 'AUTUMN BRILLIANCE' SERVICEBERRY	DECIDUOUS	2" CAL.	8-10' HT	AS SHOWN	B&B, MULTI-TRUNK, 3-5 CANES MAX., NO CROSSING LEADERS, MIN. CANE CAL. .75"
CF	30	CERCIS CANADENSIS 'FOREST PANSY' TM / FOREST PANSY REDBUD	DECIDUOUS	2" CAL.	8-10' HT	AS SHOWN	B&B, STRONG CENTRAL LEADER
CK	11	CLADRASTIS KENTUCKEA / AMERICAN YELLOWWOOD	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
JV	31	JUNIPERUS VIRGINIANA 'BURKII' / BURKII RED CEDAR	EVERGREEN	2" CAL.	6'-8' HT.	AS SHOWN	B&B, FULL TO BASE
ML	19	MAGNOLIA GRANDIFLORA 'LITTLE GEM' / DWARF SOUTHERN MAGNOLIA	EVERGREEN	2" CAL.	6-8' HT	AS SHOWN	B&B, FULL TO BASE
QN	28	QUERCUS NUTTALLII / NUTTALL OAK	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
QP	36	QUERCUS PHELLOS / WILLOW OAK	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER, WELL-MATCHED
QS	51	QUERCUS SHUMARDII / SHUMARD RED OAK	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
TD	32	TAXODIUM DISTICHUM 'AUTUMN GOLD' / AUTUMN GOLD BALD CYPRESS	DECIDUOUS	3" CAL.	14-16' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER
UA	71	ULMUS PARVIFOLIA 'ALLEE' / ALLEE LACEBARK ELM	DECIDUOUS	2" CAL.	12-14' HT	AS SHOWN	B&B, MIN. 4' CLEAR TRUNK, STRONG CENTRAL LEADER, WELL-MATCHED, STREET TREE
<b>SHRUBS</b>							
HQ	126	HYDRANGEA QUERCIFOLIA / OAKLEAF HYDRANGEA	DECIDUOUS	24-30" HT.	30"	48"O.C.	B&B OR FULL CONTAINER
VB	81	VIBURNUM X 'BURKWOODII' / BURKWOOD VIBURNUM	SEMI-EVERGREEN	24-30" HT.	30"	60"O.C.	B&B OR FULL CONTAINER

**NOTES:**

- ALL DISTURBED LAND NOT OTHERWISE PLANTED SHALL BE SEED PER SEEDING NOTES ON THIS SHEET.
- ALL TREES MUST BE A MINIMUM OF 2" CALIPER UNLESS OTHERWISE NOTED.
- TREE PROTECTION FENCING SHALL BE PLACED AT THE DRIP LINE OF ALL EXISTING TREES TO REMAIN AND NOT TO BE REMOVED UNTIL CONSTRUCTION IS COMPLETE.
- PROPOSED LANDSCAPING WITHIN THE TREE PROTECTION FENCING SHALL BE INSTALLED BY HAND AND EXISTING TREES TO BE ROOT PRUNED AS NECESSARY. SEE ROOT PRUNING NOTES ON THIS SHEET.
- LOCATIONS OF PROPOSED PLANT MATERIAL WITHIN THE EXISTING CANOPY MUST BE FIELD VERIFIED BEFORE INSTALLATION.

**RAGAN SMITH**  
 LAND PLANNERS • CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTS • SURVEYORS  
 Chattanooga, TN  
 Nashville, TN  
 Murfreesboro, TN  
 615-548-6050  
 615-490-9400  
 ragan@smith.com

**AVENUE DOWNS**  
 FOR  
**AMBER LANE DEVELOPMENT, LLC**

TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	DATE	DESCRIPTION
0646		
DESIGNED:	H.GRIMES	
DRAWN:	H.GRIMES	
SCALE:	NTS	
DATE:	JULY 25, 2018	

**LANDSCAPE NOTES AND DETAILS**

**L2.2**





**TRAFFIC IMPACT STUDY**

for

**AVENUE DOWNS**

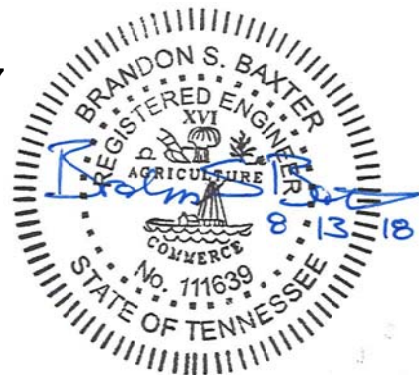
**Thompson's Station, Tennessee**

**February 16, 2018**

***Revised July 31, 2018***

**Prepared for:**

**BARLOW BUILDERS  
1804 Williamson Court, Suite 107  
Brentwood, Tennessee 37027**



**Prepared by:**



**RAGAN-SMITH ASSOCIATES, INC.  
315 Woodland Street, P.O. Box 60070  
Nashville, Tennessee 37206-0070  
(615) 244-8591**

**AVENUE DOWNS**  
**TRAFFIC IMPACT STUDY**

**TABLE OF CONTENTS**

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
<b>EXECUTIVE SUMMARY</b> .....	- ES-1 -
<b>I. <u>INTRODUCTION</u></b> .....	- 1 -
<b>II. <u>PROJECT DESCRIPTION</u></b> .....	- 2 -
A. <u>Existing Development</u> .....	- 2 -
B. <u>Project Access</u> .....	- 2 -
C. <u>Phasing and Timing</u> .....	- 2 -
<b>III. <u>EXISTING CONDITIONS</u></b> .....	- 5 -
A. <u>Transportation System</u> .....	- 5 -
B. <u>Traffic Volumes</u> .....	- 5 -
<b>IV. <u>FORECASTED BACKGROUND TRAFFIC</u></b> .....	- 7 -
A. <u>Introduction</u> .....	- 7 -
B. <u>Specific Development Growth</u> .....	- 7 -
C. <u>Annual Growth</u> .....	- 8 -
D. <u>Background Traffic</u> .....	- 8 -
<b>V. <u>PROPOSED SITE TRAFFIC</u></b> .....	- 10 -
A. <u>Trip Generation</u> .....	- 10 -
B. <u>Site Trip Distribution and Assignment</u> .....	- 10 -
<b>VI. <u>TRANSPORTATION ANALYSIS</u></b> .....	- 14 -
A. <u>Intersection Capacity Analysis</u> .....	- 14 -
B. <u>Analysis Impact Thresholds</u> .....	- 15 -
C. <u>Turn Lane Warrants</u> .....	- 16 -
D. <u>Safety Analysis</u> .....	- 17 -
<b>VII. <u>CONCLUSIONS AND RECOMMENDATIONS</u></b> .....	- 18 -
A. <u>Introduction</u> .....	- 18 -
B. <u>Critz Lane Improvements</u> .....	- 18 -
C. <u>Critz Lane at Clayton Arnold Road</u> .....	- 18 -
D. <u>Clayton Arnold Road at Proposed Access</u> .....	- 18 -
E. <u>Critz Lane at Proposed Access</u> .....	- 19 -

**APPENDIX**

**AVENUE DOWNS**  
**TRAFFIC IMPACT STUDY**

**LIST OF FIGURES**

<u>FIGURE</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	LOCATION MAP .....	3
2	CONCEPT PLAN.....	4
3	EXISTING TRAFFIC VOLUMES.....	6
4	2021 BACKGROUND TRAFFIC VOLUMES.....	9
5	SITE TRIP DISTRIBUTION .....	11
6	SITE TRAFFIC VOLUMES.....	12
7	2021 TOTAL TRAFFIC VOLUMES .....	13

**LIST OF TABLES**

<u>TABLE</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	TRIP GENERATION: BACKGROUND SPECIFIC DEVELOPMENTS .....	7
2	TRIP GENERATION: AVENUE DOWNS.....	10
3	INTERSECTION CAPACITY ANALYSIS RESULTS – A.M. PEAK HOUR .....	14
4	INTERSECTION CAPACITY ANALYSIS RESULTS – P.M. PEAK HOUR .....	15
5	LEVEL OF SERVICE DESCRIPTIONS FOR UNSIGNALIZED INTERSECTIONS.....	15
6	RIGHT TURN LANE WARRANT ANALYSIS .....	16
7	LEFT TURN LANE WARRANT ANALYSIS .....	16
8	HISTORIC CRASH SUMMARY .....	17

## EXECUTIVE SUMMARY

### INTRODUCTION

Avenue Downs is located on the southeast corner of Critz Lane and Clayton Arnold Road in the Town of Thompson's Station, Tennessee. When completed, Avenue Downs will consist of 69 single family homes. The purpose of this traffic impact study is to review the traffic impact of Avenue Downs.

### BACKGROUND TRAFFIC

Based upon the proposed development schedule, the year 2021 will be used to analyze the impact of Avenue Downs.

To establish background traffic growth, TDOT historical traffic data was obtained in the project vicinity. Traffic growth due to outside developments and general population growth was based upon linear regression analysis of the historical traffic count data. Background traffic growth was established by increasing existing traffic by **2 percent annually** for the period from 2017 to 2021. In addition to the annual growth rate, specific traffic growth estimates from three (3) underway, approved, or proposed developments were included in the determination of background traffic.

### SITE TRAFFIC

The traffic impact of Avenue Downs is based upon a calculation of the number of vehicle trips that will enter and/or exit the site. The analysis periods of this report are the a.m. and p.m. peak hours of a typical weekday. Therefore, trips were generated according to the *Trip Generation Manual, 10<sup>th</sup> Edition* published by the Institute of Transportation Engineers (ITE). The total estimated trip generation for Avenue Downs is shown in the table below.

TOTAL TRIP GENERATION: AVENUE DOWNS								
Land Use	Total Units	Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
Single Family Homes	69 Units	739	15	43	58	48	27	75

### TRAFFIC ANALYSIS

The following public intersections were analyzed for capacity deficiencies and improvement needs:

- Critz Lane at Clayton Arnold Road
- Clayton Arnold Road at Proposed Access
- Critz Lane at Proposed Access

For these intersections, the following traffic scenarios were analyzed, where applicable:

- 2017 Existing Traffic
- 2021 Background Traffic
- 2021 Total Traffic that contains all traffic projected in the study area, including the completion of Avenue Downs



## **CONCLUSIONS AND RECOMMENDATIONS**

### Critz Lane at Clayton Arnold Road

- The Town of Thompson's Station's proposal to construct a roundabout at this intersection is appropriate based on the operational and safety advantages that a roundabout will have over two-way stop control at this location. The developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the roundabout.

### Clayton Arnold Road at Proposed Access

- The Proposed Access should consist of one lane in each direction with pavement widths in compliance with the appropriate roadway section shown in the Town's Land Development Ordinance.
- Proposed grading, landscaping, and development monumentation or signage should be designed so that AASHTO intersection sight distance is not obstructed for the proposed access.

### Critz Lane at Proposed Access

- The Town of Thompson's Station's proposal to reconstruct Critz Lane's vertical alignment from the intersection of Clayton Arnold Road at Critz Lane to approximately 1,500 east of the intersection is appropriate based on the operational and safety advantages. The developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the vertical realignment.
- The Proposed Access should consist of one lane in each direction with pavement widths in compliance with the appropriate roadway section shown in the Town's Land Development Ordinance.
- Turn lane warrants were not met, but the Town has requested the installation of left-turn lanes at the intersection to accommodate future traffic volumes. Left turn lanes will be installed in both the eastbound and westbound directions.
- Proposed grading, landscaping, and development monumentation or signage should be designed so that AASHTO intersection sight distance is not obstructed for the proposed access.

**I. INTRODUCTION**

The purpose of this study is to review the traffic impact of the proposed Avenue Downs development in the Town of Thompson's Station, Tennessee. Avenue Downs will include 69 new residential units and one project access to Clayton Arnold Road and one project access to Critz Lane. This report has been requested by Town of Thompson's Station staff in order to address transportation impacts and to identify recommended mitigating measures as part of the development plan review process.

In order to evaluate the traffic impact of Avenue Downs, an inventory of the existing transportation system was carried out along with an assessment of its adequacy. Based on the anticipated project schedule, a design year was established and system-wide growth rates as well as traffic growth due to specific developments in the area were applied to existing traffic volumes. Site traffic was generated, distributed and assigned to the roadway to quantify the impact of Avenue Downs. Transportation analyses were performed in order to assess any site or non-site related impacts on the system. Finally, recommendations for project access and mitigating measures related to Avenue Downs were offered.

## II. **PROJECT DESCRIPTION**

### A. Existing Development

As shown in Figure 1, Avenue Downs is located on the southeast corner of Critz Lane and Clayton Arnold Road in the Town of Thompson's Station, Tennessee. The Avenue Downs Concept Plan includes a total area of 48.22 acres. The Avenue Downs proposal consists of 69 single family homes.

Figure 2 shows the concept plan for Avenue Downs.

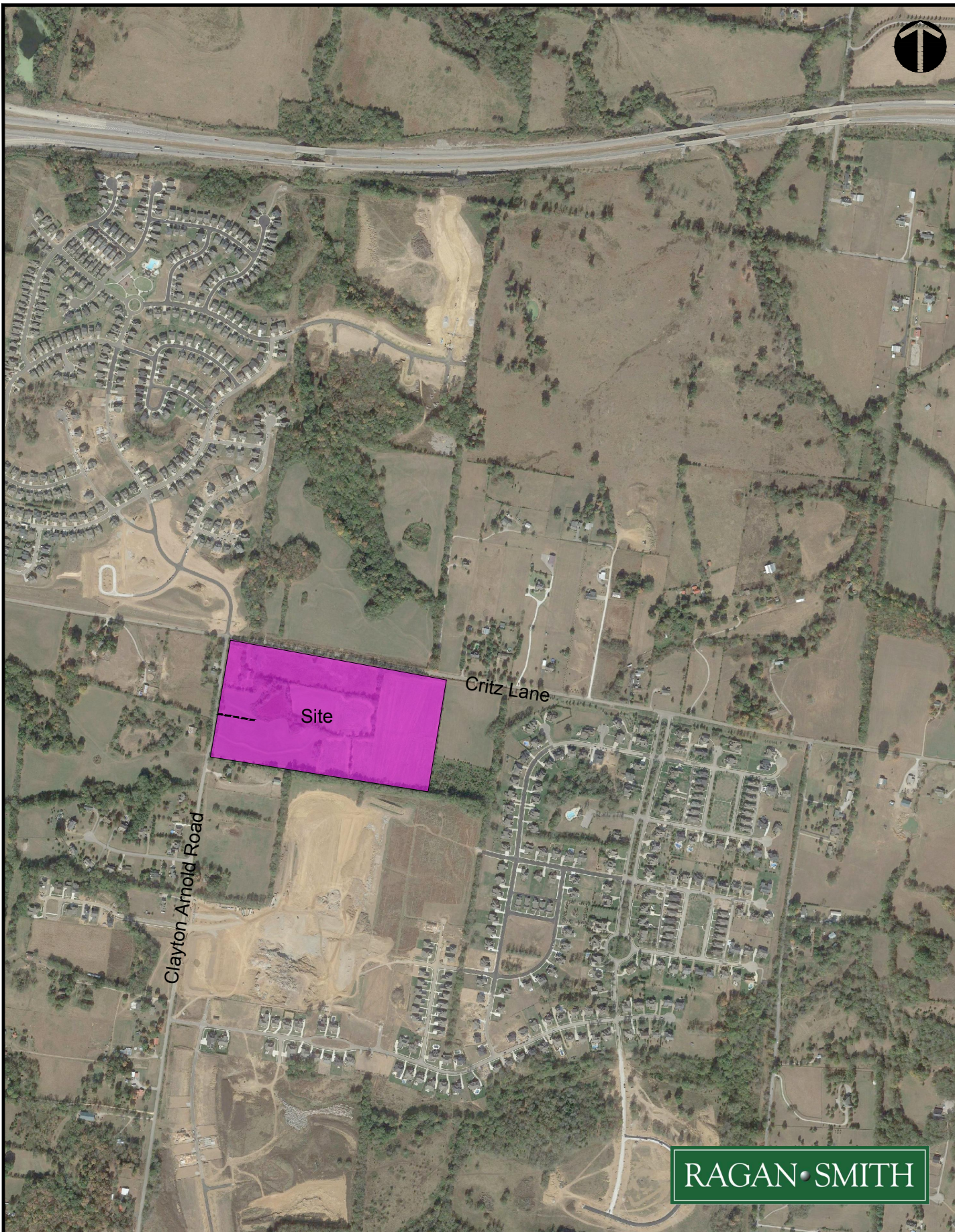
### B. Project Access

Access to Avenue Downs will be provided by two locations. One access to Clayton Arnold Road will be located approximately 600 feet south of the intersection with Critz Lane. The second access will be located on Critz Lane approximately 1,400 feet east of the intersection with Clayton Arnold Road. This access will align with a proposed access for the Fields of Canterbury north of Critz Lane.

### C. Phasing and Timing

For the analysis of this report, the full build-out of Avenue Downs has been assumed to occur in the year 2021. The year 2021 is established as the horizon year for this study.





Avenue Downs  
Location Map

Figure  
**1**



**GENERAL NOTES**

- THE PURPOSE OF THIS PLAT IS TO CREATE 69 SINGLE FAMILY LOTS, A PUMP STATION LOT, OPEN SPACE TRACTS, AND PUBLIC RIGHT OF WAY.
- BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM NAD 1983. GPS EQUIPMENT WAS USED TO DETERMINE THE POSITION OF TWO CONTROL POINTS ON THE SURVEYED PROPERTY IN ORDER TO ESTABLISH THE BEARING BASE FOR THE SURVEY. TYPE EQUIPMENT USED: LEICA, MODEL QX1230, DUAL FREQUENCY RECEIVER. THE TYPE OF GPS SURVEY: NETWORK ADJUSTED REAL TIME KINEMATIC. THE RELATIVE POSITIONAL ACCURACY IS 0.05'.
- THE PROPERTY IS ZONED D2 (MEDIUM DENSITY RESIDENTIAL).  
MAXIMUM LOT COVERAGE (SINGLE FAMILY) - 55%.  
MINIMUM BUILDING SETBACKS:  
FRONT - 20'  
SIDE - 10'  
REAR - 20'
- BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THIS PROPERTY LIES WITHIN FLOOD ZONES "X" (OTHER FLOOD AREAS) AND "X" (OTHER AREAS), AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAP NOS. 47187C0345F AND 47187C0365F WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 470424, PANEL NOS. 0345 AND 0365, SUFFIX F, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "AE" UNDER "SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD" AS BASE FLOOD ELEVATIONS DETERMINED. SAID MAP DEFINES ZONE "X" (OTHER FLOOD AREAS) UNDER "OTHER FLOOD AREAS" AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD. SAID MAP DEFINES ZONE "X" (OTHER AREAS) UNDER "OTHER AREAS" AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
- THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE, IT IS A REQUIREMENT, PER THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT, THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS NO LESS THAN THREE (3) NOR MORE THAN TEN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL, DIAL 811.
- SANITARY SEWER LINES AND STORM LINES SHOWN HEREON WERE TAKEN FROM A PRELIMINARY DESIGN. FINAL PLACEMENT OF UTILITIES WILL BE DEPICTED ON THE FINAL PLAT.
- DOMESTIC WATER SUPPLY INFORMATION SHOWN HEREON IS BASED ON A PRELIMINARY DESIGN.
- ALL PUBLIC STREETS AND DRAINAGE STRUCTURES WITHIN THE RIGHTS-OF-WAY WILL BE MAINTAINED BY THE TOWN OF THOMPSON'S STATION.
- HOMEOWNER'S ASSOCIATION WILL BE RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF STORMWATER INFRASTRUCTURE LOCATED IN DRAINAGE EASEMENTS AND ALL OPEN SPACE, INCLUDING LANDSCAPE AND DETENTION/RETENTION AREAS.
- ELEVATIONS SHOWN HEREON ARE BASED ON NAVD 88. CONTOURS ARE AT TWO FOOT INTERVALS AND ARE BASED ON A FIELD RUN SURVEY USING RANDOM SPOT ELEVATIONS. CONTOURS WERE DERIVED USING SURFACE MODELING TECHNIQUES.
- LOTS SHOWN WITH (\*) ARE DESIGNATED AS CRITICAL LOTS AND HAVE NATURAL SLOPES IN EXCESS OF 15%. PER SECTION 3-102.104 OF THE SUBDIVISION REGULATIONS, PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, A SITE GRADING PLAN FOR DEVELOPMENT OF THE LOT SHALL BE SUBMITTED ADDRESSING SITE SPECIFIC NATURAL RESOURCE ISSUES TO THE TOWN OF THOMPSON'S STATION FOR REVIEW AND APPROVAL. NO BUILDING PERMIT WILL BE ISSUED ON SAID LOTS UNTIL AND UNLESS THE TOWN ENGINEER HAS RECEIVED AND APPROVED THE SITE PLAN.
- I HEREBY STATE THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AND THIS IS A CATEGORY 1 SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS 1:15,715.

BY: *[Signature]* DATE: JULY 25, 2018  
JOHN T. DARNALL, TN RLS #1571

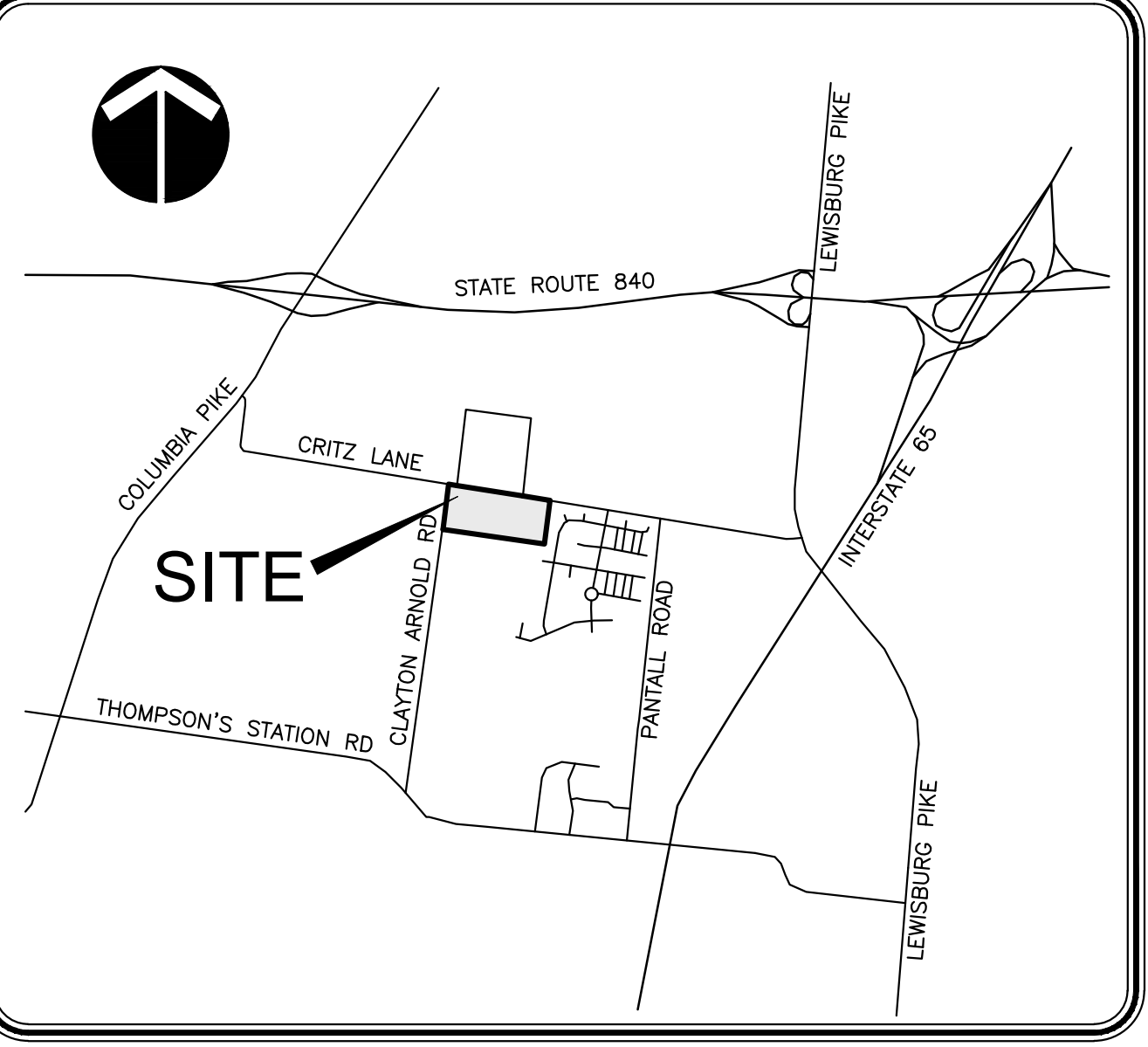
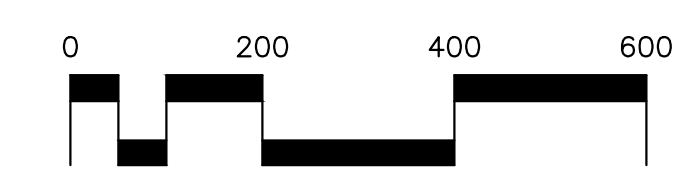
- ALL OPEN SPACE IS A PUBLIC UTILITY AND DRAINAGE EASEMENT.
- STREET LIGHT LOCATIONS SHOWN HEREON ARE APPROXIMATE. FINAL LOCATION TO BE COORDINATED WITH MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION.

**DEED REFERENCE**

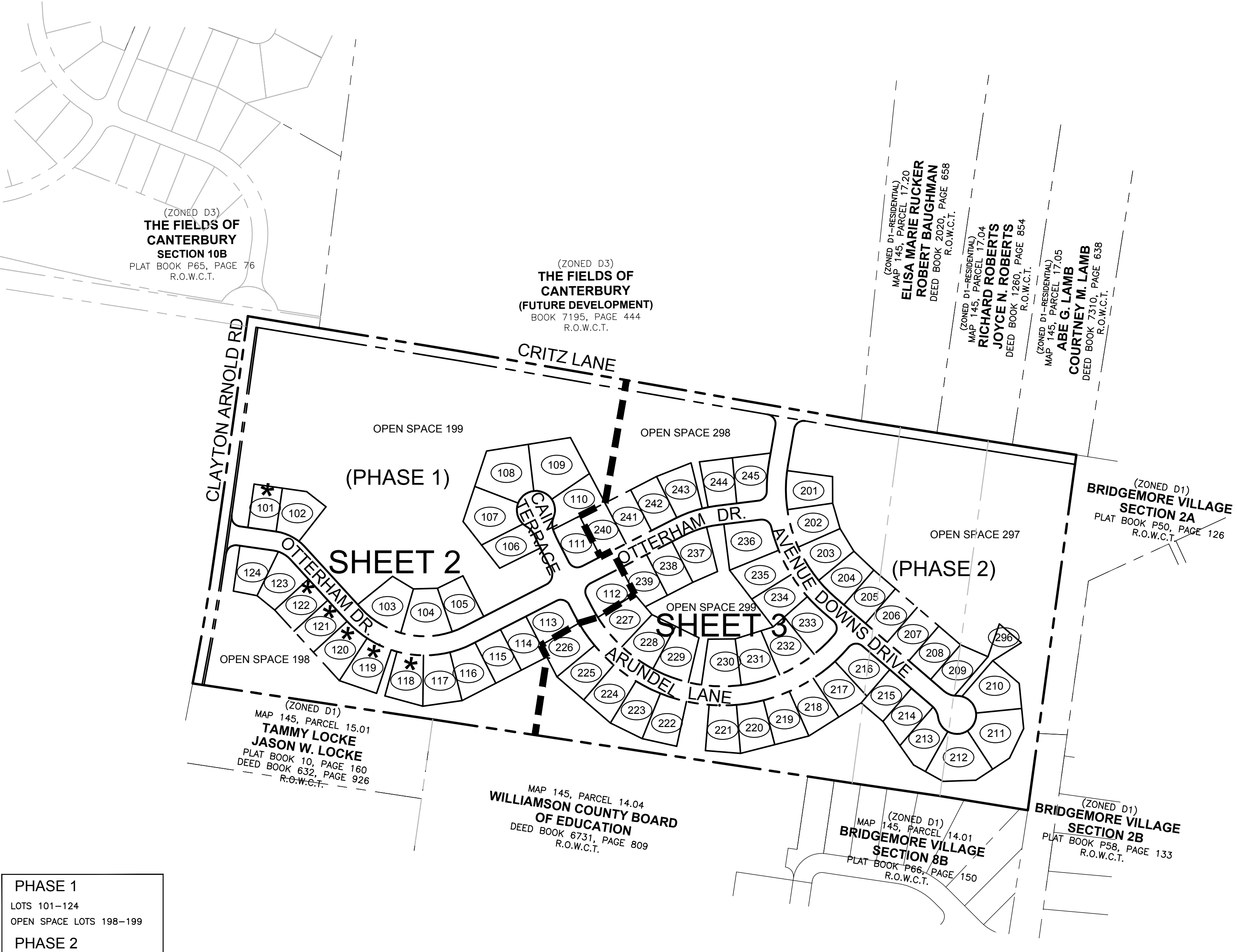
BEING THE SAME PROPERTY CONVEYED TO BYRD D. CAIN, JR. FROM AMBER LANE DEVELOPMENT, LLC BY WARRANTY DEED OF RECORD IN BOOK 7258, PAGE 303, REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TENNESSEE.

**PROPERTY MAP REFERENCE**

BEING PARCEL NUMBERS 6.01, 6.02, AND 6.03 AS SHOWN ON WILLIAMSON COUNTY PROPERTY MAP NUMBER 145.



LOCATION MAP  
N.T.S.



PHASE 1	
LOTS 101-124	
OPEN SPACE LOTS 198-199	
PHASE 2	
LOTS 201-245	
OPEN SPACE LOTS 297-299	
PUMP STATION LOT 296	

SITE DATA TABLE (PH. 1 & 2)	
TOTAL LOT AREA	- 16.61 ACRES±
TOTAL OPEN SPACE AREA	- 25.08 ACRES±
PUMP STATION LOT 296	- 0.14 ACRES±
TOTAL CRITZ, LN R.O.W. IN USE AREA	- 1.26 ACRES±
TOTAL CLAYTON ARNOLD RD. R.O.W. IN USE AREA	- 0.54 ACRES±
TOTAL CLAYTON ARNOLD RD. R.O.W. DEDICATION	- 0.11 ACRES±
TOTAL INTERNAL R.O.W. AREA	- 4.48 ACRES±
TOTAL SITE AREA	- 48.22 ACRES±
TOTAL LINEAR FEET OF ROAD	- 3,797 FEET

**SURVEYOR:**  
RAGAN-SMITH ASSOCIATES, INC.  
TOM DARNALL, RLS  
315 WOODLAND STREET  
NASHVILLE, TENNESSEE 37206  
(615) 244-8591

**OWNER / DEVELOPER**  
AMBER LANE DEVELOPMENT, LLC  
C/O JORDAN CLARK  
1804 WILLIAMSON COURT, SUITE 107  
BRENTWOOD, TENNESSEE 37027  
(615) 794-6401

LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
101	8,625	0.20
102	11,334	0.26
103	12,166	0.28
104	12,270	0.28
105	9,978	0.23
106	9,532	0.22
107	14,521	0.33
108	16,625	0.38
109	17,293	0.40
110	10,498	0.24
111	9,456	0.22
112	9,432	0.22
113	9,308	0.21
114	9,000	0.21
115	9,000	0.21
116	10,447	0.24
117	11,238	0.26
118	10,690	0.25
119	10,665	0.24
120	10,473	0.24
121	9,000	0.21
122	9,000	0.21
123	10,475	0.24
124	10,145	0.23
201	10,452	0.24
202	10,452	0.24
203	10,452	0.24
204	9,908	0.23
205	9,000	0.21
206	9,000	0.21
207	9,000	0.21
208	9,000	0.21
209	9,805	0.23
210	13,160	0.30
211	15,026	0.34

LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
212	15,026	0.34
213	10,496	0.24
214	9,326	0.21
215	8,625	0.20
216	10,110	0.23
217	10,154	0.23
218	10,101	0.23
219	10,036	0.23
220	10,036	0.23
221	10,036	0.23
222	10,036	0.23
223	10,428	0.24
224	10,113	0.23
225	10,113	0.23
226	9,878	0.23
227	9,838	0.23
228	10,270	0.24
229	10,436	0.24
230	10,800	0.25
231	10,946	0.25
232	10,901	0.25
233	10,773	0.25
234	9,765	0.22
235	10,628	0.24
236	13,053	0.30
237	10,237	0.24
238	9,000	0.21
239	8,795	0.20
240	9,000	0.21
241	9,000	0.21
242	9,081	0.21
243	10,041	0.23
244	9,757	0.23
245	10,433	0.24

OPEN SPACE LOT AREA TABLE		
LOT	SQ. FT.±	ACRES±
198	113,106	2.60
199	436,381	10.02
297	424,739	9.75
298	74,390	1.71
299	44,025	1.01

PUMP STATION LOT AREA		
LOT	SQ. FT.±	ACRES±
296	5,939	0.14

**RAGAN-SMITH**  
LAND PLANNERS • CIVIL ENGINEERS  
LANDSCAPE ARCHITECTS • SURVEYORS  
NASHVILLE  
315 WOODLAND STREET  
NASHVILLE, TN 37206  
(615) 244-8591  
www.ragan-smith.com

**AVENUE DOWNS**  
**PHASES 1 AND 2**  
TOWN OF THOMPSON'S STATION, WILLIAMSON COUNTY, TENNESSEE

WK. ORDER	0646	DESIGNED:	N/A	DATE:	JULY 25, 2018
JOB NO.	16-107	DRAWN:	AMR	REV. #	
SCALE:	1"=200'	DESCRIPTION:			
<b>PRELIMINARY PLAT</b>					
<b>1 OF 3</b>					



**LEGEND**  
OS OPEN SPACE  
R.O.W. R.O.W.  
R.O.W.C.T. REGISTER'S OFFICE  
WILLIAMSON COUNTY, TENNESSEE  
\* CRITICAL LOT  
(SEE NOTE 12)

01/15/2018 09:45:10 AM SURVEYOR: JOHN T. DARNALL, RLS #1571  
 PLOTTED BY: AMBER LANE DEVELOPMENT, LLC  
 PLOTTED BY: AMBER LANE DEVELOPMENT, LLC  
 LAST UPDATED BY: AMR ON: 7/25/2018 10:57 AM



### III. **EXISTING CONDITIONS**

#### A. Transportation System

The existing transportation system in the area that provides access to Avenue Downs consists of collector and local roadways. The following roadways will comprise the study area for consideration of traffic mitigation measures at Avenue Downs.

- **Critz Lane** is listed as a collector roadway in the General Plan for Thompson's Station. Critz Lane is a two-lane roadway that connects Columbia Pike and Lewisburg Pike with a total length of approximately 2.6 miles. The posted speed limit on Critz Lane is 40 mph.
- **Clayton Arnold Road** is listed as a collector roadway in the General Plan for Thompson's Station. Clayton Arnold Road is a two-lane roadway that connects Critz Lane and Thompson's Station Road with a total length of approximately 1.3 miles. The posted speed limit on Clayton Arnold Road is 35 mph.

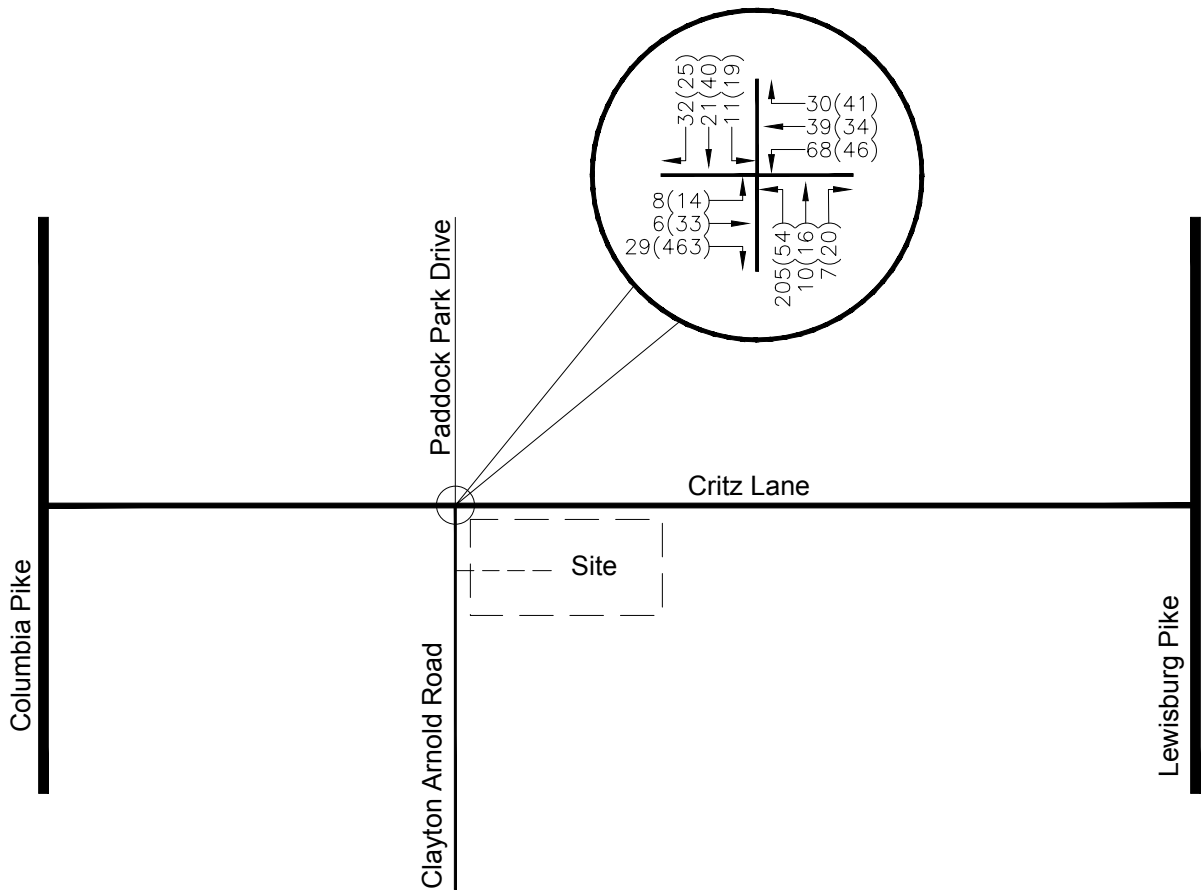
The Town of Thompson's Station has proposed to improve Critz Lane between Columbia Pike and Lewisburg Pike, including widening Critz Lane to provide 11' travel lanes and 4' shoulders, constructing roundabout intersections at Clayton Arnold Road and Pantall Road, constructing turn lanes at other appropriate intersections, and correcting vertical alignment deficiencies. Survey work for this project was initiated in the fall of 2016 and a preliminary set of construction plans was provided by the Town in November 2017. The current construction schedule is not known for this project.

#### B. Traffic Volumes

In order to assess the adequacy of the local transportation system, an evaluation of the current operational quality of intersections within the study area was required.

The peak hour of the adjacent street traffic was used to evaluate the traffic operations for Avenue Downs. In order to identify the peak periods for analysis, traffic counts were conducted in December 2017 at the intersection of Critz Lane at Clayton Arnold Road. The peak hours for analysis are 6:30 – 7:30 a.m. and 4:30 – 5:30 p.m.

Figure 3 shows the existing peak hour traffic volumes for the intersections in the study area.



Peak Hours  
AM (PM)



Avenue Downs  
2017 Existing Traffic Volumes

Figure  
**3**

**IV. FORECASTED BACKGROUND TRAFFIC**

**A. Introduction**

Before any impacts to the study area can be addressed, some estimate of background traffic volumes for the horizon year 2021 must be established. Background traffic volumes were established by segregating potential growth into two categories:

- Specific development traffic growth within the immediate study area
- Growth due to small scale development and/or general population growth

**B. Specific Development Growth**

Traffic growth from the three (3) specific developments described below was included in the background traffic forecasts for the analysis of this report.

- The Fields of Canterbury – The existing approved portions of The Fields of Canterbury include approximately 90 single family homes and 54 townhomes that are not yet constructed or occupied. Site traffic from these units has been included in the background traffic growth forecast of this report.
- Thompson’s Station Elementary and Middle Schools – Williamson County Schools is currently constructing a new campus on Clayton Arnold Road south of Critz Lane that will include a new Elementary School and a new Middle School, each with a capacity of 800 students. While it is unlikely that both schools will have arrival or dismissal times coinciding with the peak hour of the adjacent streets, the analysis of this report conservatively applies trips for both schools to the peak hour analysis.
- Proposed Additions to The Fields of Canterbury – Additions to The Fields of Canterbury are proposed, but not yet approved, for east of the existing sections of The Fields of Canterbury. The proposed additions to The Fields of Canterbury will consist of 180 single family homes and 138 townhomes. Due to the proximity of The Fields of Canterbury to Avenue Downs, site traffic from the proposed additions has been included in the background traffic growth forecast of this report.

Trip generation for the specific background developments is shown in Table 1. The trip distribution for these background developments is shown in the appendix of this report.

<b>TABLE 1</b>							
<b>TRIP GENERATION: BACKGROUND SPECIFIC DEVELOPMENTS</b>							
<b>Land Use and Total Units</b>	<b>Daily Trips</b>	<b>A.M. Peak Hour</b>			<b>P.M. Peak Hour</b>		
		<b>Enter</b>	<b>Exit</b>	<b>Total</b>	<b>Enter</b>	<b>Exit</b>	<b>Total</b>
The Fields of Canterbury Approved but not Constructed Units (90 Single Family and 54 Townhomes)	1,311	28	77	105	84	50	134
Proposed School 1,600 Students	3,216	540	460	1,000	132	140	272
50% of Proposed Additions to The Fields at Canterbury	1,394	29	79	108	86	53	139
<b>TOTAL</b>	<b>5,921</b>	<b>597</b>	<b>616</b>	<b>1,213</b>	<b>302</b>	<b>243</b>	<b>545</b>



C. Annual Growth

To establish traffic growth due to population growth or small scale development, TDOT historical traffic count data was obtained at locations within the general project vicinity. The TDOT historical traffic count data includes traffic volume counts conducted annually on Columbia Pike beginning in 1985. The available historical count data was tabulated and analyzed to identify patterns or growth trends.

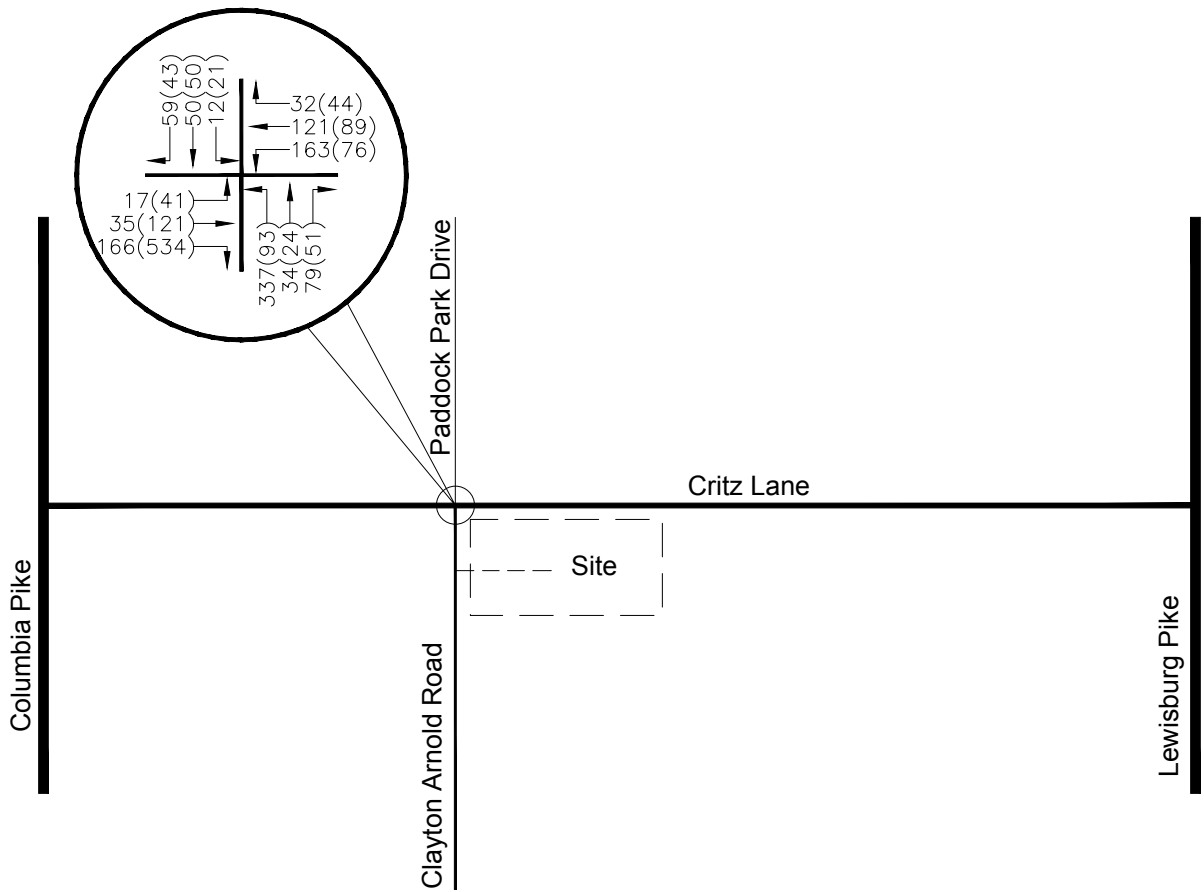
Based upon linear regression analysis of this data, we will use a **2 percent annual growth rate** as the base growth for the existing traffic volumes. This annual growth rate is consistent with the Comprehensive Traffic Impact Study prepared by RPM Transportation Consultants, LLC for the Town of Thompson's Station.

D. Background Traffic

Background traffic for the future traffic forecasts was compiled based on the following:

- 2017 existing traffic data
- Specific development expected traffic volumes
  - The Fields of Canterbury – approved but not yet constructed units
  - Thompson's Station Elementary and Middle Schools
  - Proposed Additions to The Fields of Canterbury
- 2% annual increase of traffic volumes for the period from 2017 to 2021

Background traffic volumes on the future roadway, representing existing traffic volumes plus background growth, for the year 2021 are shown in Figure 4.



Peak Hours  
AM (PM)



Avenue Downs  
2021 Background Traffic Volumes

Figure  
**4**

**V. PROPOSED SITE TRAFFIC**

**A. Site Trip Generation**

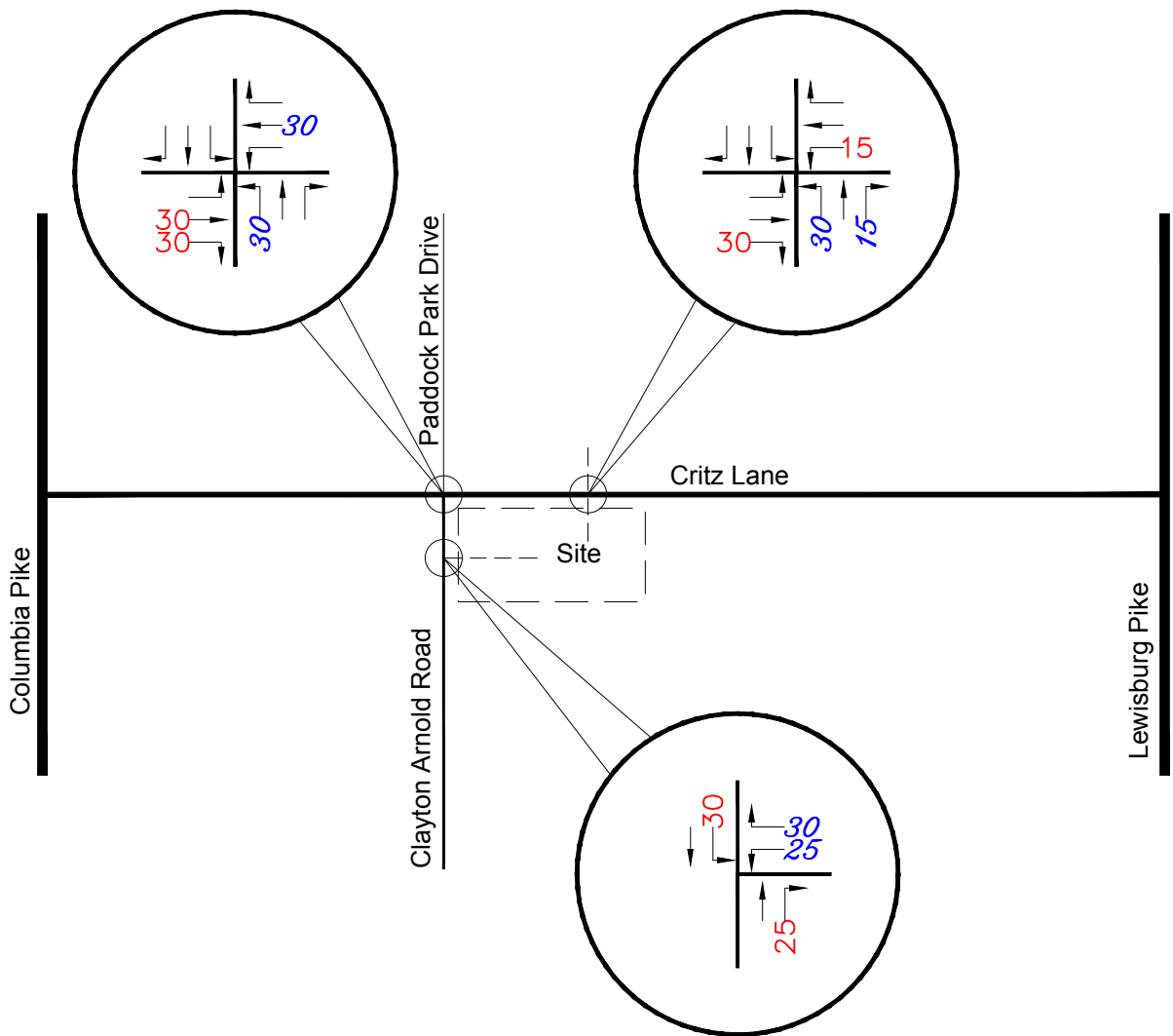
In order to quantify site-related impacts within the study area, some estimates of site trip generation and traffic assignment had to be established. Trip generation rates for the development were established using information for the weekday a.m. and p.m. peak hour of the adjacent street as shown in the *Trip Generation Manual, 10<sup>th</sup> Edition* published by the Institute of Transportation Engineers (ITE). It should be noted that ITE's "Peak Hour of Generator" rates were utilized for the residential development to be conservative. For this study, horizon year 2021 will include the completion of Avenue Downs. Trip generation for Avenue Downs is shown in Table 2.

TABLE 2								
TRIP GENERATION: AVENUE DOWNS								
Land Use	Total Units	Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
Single Family Homes	69 units	739	15	43	58	48	27	75

**B. Site Trip Distribution and Assignment**

Site trips were distributed based primarily upon the prevalent commuter patterns in the area and the proximity and routes to major transportation facilities. Figure 5 shows the distribution of the residential trips for Avenue Downs on the adjacent roadway.

Site traffic volumes generated by Avenue Downs in the horizon year 2021 are shown in Figure 6. The accumulation of existing, background growth, and site-generated traffic for the horizon year 2021 is shown in Figure 7.



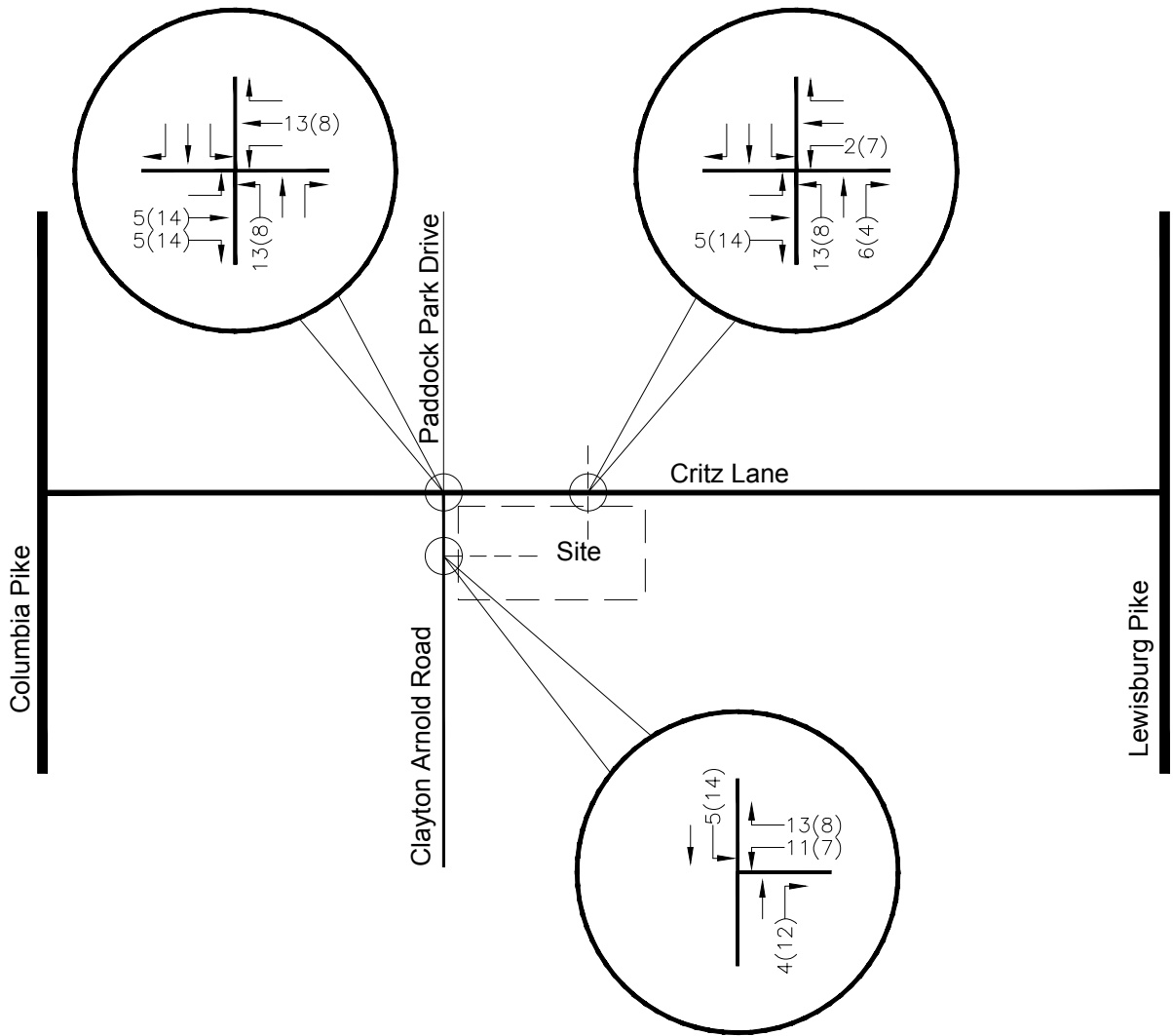
XX INBOUND  
XX OUTBOUND



Avenue Downs  
Site Trip Distribution

Figure  
**5**



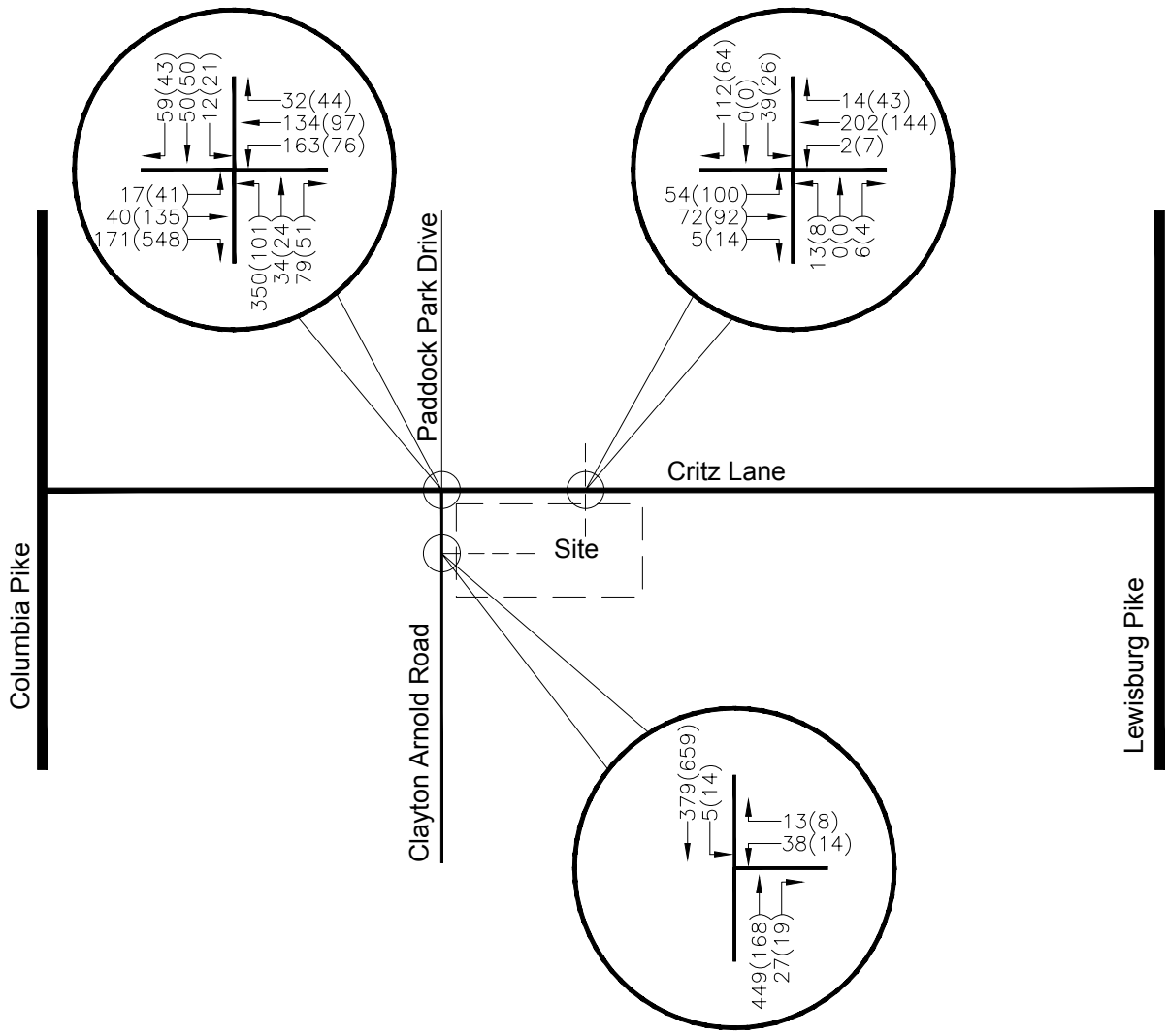


Peak Hours  
AM (PM)



Avenue Downs  
Site Traffic Volumes

Figure  
**6**



Peak Hours  
AM (PM)



Avenue Downs  
2021 Total Traffic Volumes

Figure  
**7**

**VI. TRANSPORTATION ANALYSIS**

**A. Intersection Capacity Analysis**

In order to determine the quality of existing traffic operations and identify capacity deficiencies, intersection capacity analyses were conducted at the following intersections.

- Critz Lane at Clayton Arnold Road
- Clayton Arnold Road at Proposed Access

Capacity analyses were conducted according to the methodology and procedures outlined in the *Highway Capacity Manual*, HCM 2010, published by Transportation Research Board. Capacity analysis results for the a.m. peak hour are shown in Table 3.

TABLE 3				
INTERSECTION CAPACITY ANALYSIS RESULTS – A.M. PEAK HOUR				
Intersection	Condition <sup>(1)</sup>	Level of Service (avg. delay/vehicle – sec.)		
		2017 Existing	2021 Background	2021 Total
Critz Lane at Clayton Arnold Road	EB Left	A (7.4)	-	-
	WB Left	A (7.4)	-	-
	TWSC NB	C (16.3)	-	-
	TWSC SB	B (10.4)	-	-
	Overall Roundabout	-	B (10.9)	B (11.5)
Clayton Arnold Road at Project Access	SB Left	-	-	A (8.4)
	TWSC WB	-	-	C (17.8)
Critz Lane at Project Access	EB Left	-	-	A (7.8)
	WB Left	-	-	A (7.4)
	TWSC NB	-	-	B (12.6)
	TWSC SB	-	-	B (11.7)

<sup>(1)</sup> TWSC = Two-way Stop Control

Capacity analysis results for the p.m. peak hour are shown in Table 4.

TABLE 4				
INTERSECTION CAPACITY ANALYSIS RESULTS – P.M. PEAK HOUR				
Intersection	Condition <sup>(1)</sup>	Level of Service (avg. delay/vehicle – sec.)		
		2017 Existing	2021 Background	2021 Total
Critz Lane at Clayton Arnold Road	EB Left	A (7.4)	-	-
	WB Left	A (8.7)	-	-
	TWSC NB	C (15.2)	-	-
	TWSC SB	C (15.3)	-	-
	Overall Roundabout	-	C (15.2)	C (16.8)
Clayton Arnold Road at Project Access	SB Left	-	-	A (7.7)
	TWSC WB	-	-	C (15.1)
Critz Lane at Project Access	EB Left	-	-	A (7.9)
	WB Left	-	-	A (7.5)
	TWSC NB	-	-	B (12.8)
	TWSC SB	-	-	B (11.3)
(1) TWSC = Two-way Stop Control				

Level of service (LOS) criteria for unsignalized intersections is shown in Table 5.

TABLE 5		
LEVEL OF SERVICE DESCRIPTIONS FOR UNSIGNALIZED INTERSECTIONS		
Level of Service	Description	Control Delay (sec. /veh.)
A	Usually no conflicting traffic	0 - 10
B	Occasionally some delay due to conflicting traffic	> 10 - 15
C	Delay is noticeable but not inconveniencing	> 15 - 25
D	Delay is noticeable and irritating, increased risk taking	> 25 - 35
E	Delay approaches tolerance level, risk taking likely	> 35 - 50
F	Delay exceeds tolerance level, high likelihood of risk taking	> 50
Source: <u>Highway Capacity Manual</u> , HCM 2010		

**B. Analysis Impact Thresholds**

The Town of Thompson's Station has developed traffic impact thresholds for this project to determine the quality of future traffic operations and identify capacity deficiencies. The following thresholds indicate unsatisfactory conditions that would require mitigation:

- Overall intersections or intersection approaches operating at or below LOS E.
- Individual turning movements operating at LOS F.
- 95<sup>th</sup> percentile turn lane queues exceeding the available storage length.

- 95<sup>th</sup> percentile thru movement queues stretching back far enough to block an adjacent intersection or major driveway.

After conducting the capacity analysis, the intersections and individual turning movements are expected to operate at acceptable level of service based on the guidelines presented above and the queue lengths are not expected to exceed the storage length provided.

### C. Turn Lane Warrants

The National Cooperative Highway Research Program (NCHRP) Report 457 provides guidance for evaluating intersection improvements at unsignalized intersections. Specific volume-based warrants have been checked to evaluate the need for right turn and left turn deceleration and storage lanes.

Table 6 below details pertinent right turn lane warrant information for applicable intersections in the study area.

<b>TABLE 6</b>					
<b>RIGHT TURN LANE WARRANT ANALYSIS</b>					
Location	Peak Hour	Speed	Major-Road Volume	Right-Turn Volume	Right-Turn Bay Warranted
Clayton Arnold Road (NB) at Project Access	A.M.	35	476	27	No
	P.M.		187	19	No
Critz Lane (EB) at Project Access	A.M.	40	131	5	No
	P.M.		206	14	No
Critz Lane (WB) at Project Access	A.M.	40	218	14	No
	P.M.		194	43	No

Table 7 below details pertinent left turn lane warrant information for applicable intersections in the study area.

<b>TABLE 7</b>						
<b>LEFT TURN LANE WARRANT ANALYSIS</b>						
Location	Peak Hour	Speed	Opposing Volume	Advancing Volume	L%	Left-Turn Bay Warranted
Clayton Arnold Road (SB) at Project Access	A.M.	35	476	384	1	No
	P.M.		187	673	2	No
Critz Lane (WB) at Project Access	A.M.	40	77	218	1	No
	P.M.		106	194	4	No
Critz Lane (EB) at Project Access	A.M.	40	216	131	41	No
	P.M.		187	206	49	No



D. Safety Analysis

A summary of historic crash data on Critz Lane between Columbia Pike and Lewisburg Pike for the period between 2010 and 2017 is shown below in Table 8.

<b>TABLE 8</b>					
<b>HISTORIC CRASH SUMMARY</b>					
<b>Year</b>	<b>Crash Type</b>				<b>Total Crashes</b>
	<b>Fatal</b>	<b>Incapacitating Injury</b>	<b>Other Injury</b>	<b>Property Damage</b>	
2010	0	0	0	1	1
2011	0	0	2	1	3
2012	0	0	3	1	4
2013	0	1	2	7	10
2014	0	0	1	3	4
2015	0	0	1	7	8
2016	0	0	2	3	5
2017	1	0	2	5	8
Source: TDOT Enhanced Tennessee Roadway Information Management System (E-TRIMS)					

Even though there are not sufficient historical traffic counts available on Critz Lane to determine average crash rates and make comparisons to regional or statewide averages, the Highway Safety Manual and Crash Modification Factors Clearinghouse indicated that the planned improvements to Critz Lane can improve safety as described below.

- The crash reduction factor for increasing the lane width is 28 percent. The lane width on Critz Lane is being increased to 11 feet.
- The reduction factor for property damage crashes when providing a new shoulder that is 4 feet wide is 19 percent. The Critz Lane improvements will provide a shoulder with a width of 4 feet.
- The reduction factor for all crash types is 25 percent and the reduction factor for injury and fatal crashes is 35% when replacing a two-way stop intersection with a roundabout. On Critz Lane, the two-way stop intersections at Clayton Arnold Road / Paddock Park Drive and at Pantall Road will be replaced with roundabouts.

## VII. CONCLUSIONS AND RECOMMENDATIONS

### A. Introduction

Based upon a review of the existing and future proposed conditions within the study area, recommendations have been developed to provide efficient ingress and egress for Avenue Downs while managing the impact to non-site trips on the roadway network.

### B. Critz Lane Improvements

The Town of Thompson's Station has proposed to improve Critz Lane between Columbia Pike and Lewisburg Pike, including widening Critz Lane to provide 11' travel lanes and 4' shoulders, constructing roundabout intersections at Clayton Arnold Road and Pantall Road, constructing turn lanes at other appropriate intersections, and correcting vertical alignment deficiencies. Survey work for this project was initiated in the fall of 2016 and a preliminary set of construction plans was provided by the Town in November 2017. The current construction schedule is not known for this project.

The Town of Thompson Station concluded that Critz Lane could not operate efficiently with an increase in traffic due to additional developments. Mainly, there was concern regarding two main locations: the intersection of Critz Lane at Clayton Arnold Road and the vertical alignment approximately 1,500 feet east of Clayton Arnold Road. These two areas of concern would be improved with the Town's plan, however, a construction schedule has not been developed.

The developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the two areas of concern. The roadway construction is intended to be completed at the same time as the development of the first phases of the two projects.

### C. Critz Lane at Clayton Arnold Road

As previously discussed, the developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the roundabout. The Critz Lane improvements proposed by the Town of Thompson's Station include a single lane roundabout at this intersection with one lane entrances and exits on all four approaches.

Traffic operations in the horizon year 2021 for total traffic conditions at the intersection of Critz Lane at Clayton Arnold Road are expected to be characterized by level of service B during the a.m. peak hour and level of service C in the p.m. peak hour.

The following improvements are recommended at the intersection of Critz Lane at Clayton Arnold Road:

- The Town of Thompson's Station's proposal to construct a roundabout at this intersection is appropriate based on the operational and safety advantages that a roundabout will have over two-way stop control at this location. The developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the roundabout.

### D. Clayton Arnold Road at Proposed Access

One access for Avenue Downs will be located on Clayton Arnold Road approximately 600 feet south of the intersection with Critz Lane. Traffic operations in the horizon year 2021 for total traffic conditions at the unsignalized intersection of Clayton Arnold Road at the proposed

access is expected to be characterized by level of service C during the a.m. peak hour and p.m. peak hour.

Right turn and left turn lane warrants were conducted at the intersection of Clayton Arnold Road at the proposed access. It was concluded that turn lanes are not warranted at this intersection based on the forecasted traffic volumes.

The following improvements are recommended at the intersection of Clayton Arnold Road at the proposed access:

- The Proposed Access should consist of one lane in each direction with pavement widths in compliance with the appropriate roadway section shown in the Town's Land Development Ordinance.
- Proposed grading, landscaping, and development monumentation or signage should be designed so that AASHTO intersection sight distance is not obstructed for the proposed access.

E. Critz Lane at Proposed Access

The second access for Avenue Downs will be located on Critz Lane approximately 1,400 feet east of the intersection with Clayton Arnold Road. This access will align with a proposed access for the Fields of Canterbury north of Critz Lane. As previously discussed, the developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the vertical alignment where the proposed access will be located.

Right turn and left turn lane warrants were conducted at the intersection of Critz Lane at the proposed access. It was concluded that turn lanes are not warranted at this intersection based on the forecasted 2021 total traffic volumes. However, the Town has requested the installation of left turn lanes to ensure future traffic volumes can be accommodated.

The following improvements are recommended at the intersection of Critz Lane at the proposed access:

- The Town of Thompson's Station's proposal to reconstruct Critz Lane's vertical alignment from the intersection of Clayton Arnold Road at Critz Lane to approximately 1,500 east of the intersection is appropriate based on the operational and safety advantages. The developer for Avenue Downs and the developer for the adjacent Fields of Canterbury have established a proposal to assist the Town with the construction of the vertical realignment.
- The Proposed Access should consist of one lane in each direction with pavement widths in compliance with the appropriate roadway section shown in the Town's Land Development Ordinance.
- Turn lane warrants were not met, but the Town has requested the installation of left-turn lanes at the intersection to accommodate future traffic volumes. Left turn lanes will be installed in both the eastbound and westbound directions.
- Proposed grading, landscaping, and development monumentation or signage should be designed so that AASHTO intersection sight distance is not obstructed for the proposed access.

## **APPENDIX**

- A. TRAFFIC COUNT DATA**
- B. TRIP GENERATION & FUTURE TRAFFIC DERIVATION**
- C. 2017 EXISTING CONDITIONS CAPACITY ANALYSIS WORKSHEETS**
- D. 2021 BACKGROUND CONDITIONS CAPACITY ANALYSIS WORKSHEETS**
- E. 2021 TOTAL CONDITIONS CAPACITY ANALYSIS WORKSHEETS**

**APPENDIX A**

**TRAFFIC COUNT DATA**









Date: 13-Dec-17  
 Location: Critz Lane at Clayton Arnold Road / Paddock

A.M. Peak Hour (6:00 - 9:00)

Time	Clayton Arnold Road			Paddock Park Drive			Critz Lane			Critz Lane		
	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right
6:30 - 6:45	55	1	1	0	1	6	2	2	3	14	7	3
6:45 - 7:00	47	0	0	1	6	13	1	1	7	15	13	11
7:00 - 7:15	56	2	5	2	12	9	1	2	7	26	13	6
7:15 - 7:30	47	7	1	8	2	4	4	1	12	13	6	10
<b>6:30 - 7:30</b>	<b>205</b>	<b>10</b>	<b>7</b>	<b>11</b>	<b>21</b>	<b>32</b>	<b>8</b>	<b>6</b>	<b>29</b>	<b>68</b>	<b>39</b>	<b>30</b>

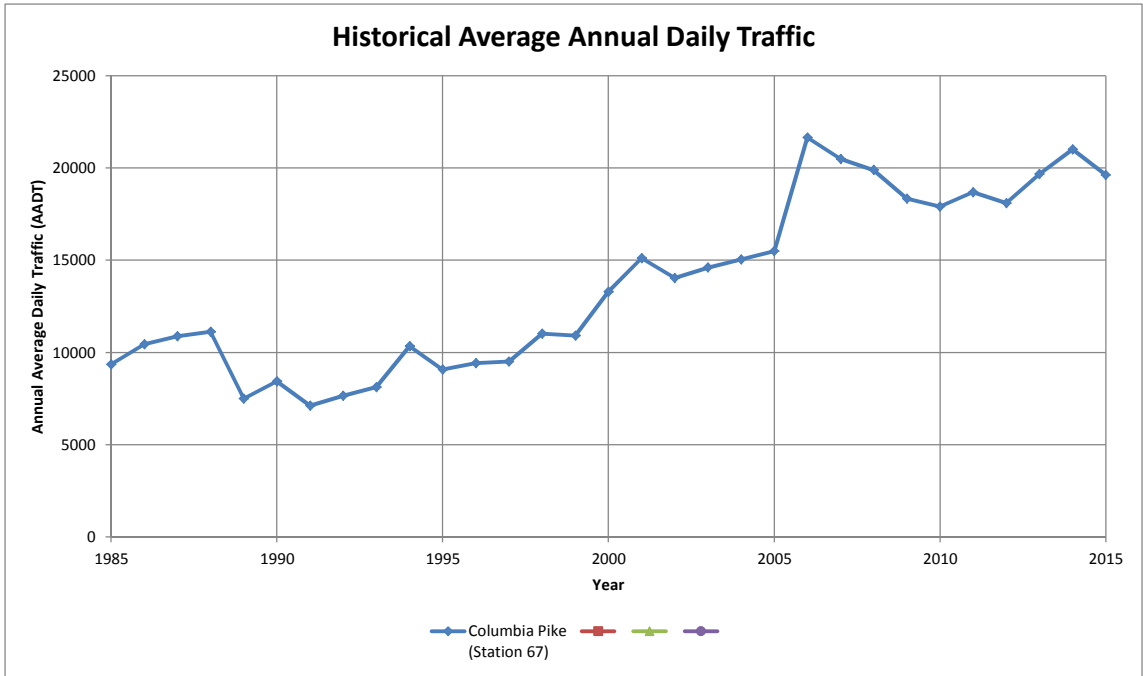
Peak Hour Factor: 0.826

P.M. Peak Hour (4:00 - 7:00)

Time	Clayton Arnold Road			Paddock Park Drive			Critz Lane			Critz Lane		
	NB Left	NB Thru	NB Right	SB Left	SB Thru	SB Right	EB Left	EB Thru	EB Right	WB Left	WB Thru	WB Right
16:30 - 16:45	13	2	2	1	12	11	1	5	121	16	7	11
16:45 - 17:00	16	6	3	4	8	3	5	7	108	9	6	8
17:00 - 17:15	16	7	9	8	9	7	3	14	114	9	17	6
17:15 - 17:30	9	1	6	6	11	4	5	7	120	12	4	16
<b>16:30 - 17:30</b>	<b>54</b>	<b>16</b>	<b>20</b>	<b>19</b>	<b>40</b>	<b>25</b>	<b>14</b>	<b>33</b>	<b>463</b>	<b>46</b>	<b>34</b>	<b>41</b>

Peak Hour Factor: 0.919

HISTORICAL TRAFFIC COUNT DATA				
Year	Columbia Pike (Station 67)			
1985	9342			
1986	10443			
1987	10883			
1988	11127			
1989	7490			
1990	8427			
1991	7117			
1992	7654			
1993	8121			
1994	10337			
1995	9079			
1996	9418			
1997	9499			
1998	11015			
1999	10915			
2000	13289			
2001	15108			
2002	14037			
2003	14599			
2004	15037			
2005	15488			
2006	21645			
2007	20488			
2008	19891			
2009	18342			
2010	17900			
2011	18685			
2012	18101			
2013	19666			
2014	21013			
2015	19620			
2016	19816			



		Columbia Pike (Station 67)	-	-	-
Analysis Period	Begin	2011	2008	-	-
	End	2016	2015	-	-
	Future Year	2021	2017	-	-
	Forecasted Traffic Volume	21960	-	-	-
	Annual Growth Rate	2.08%	-	-	-
	Growth Factor	1.108	-	-	-

## **APPENDIX B**

# **TRIP GENERATION & FUTURE TRAFFIC DERIVATION**

TRAFFIC VOLUME WORKSHEET  
 SPECIFIC NON-SITE TRIP GENERATION &  
 PROPOSED DEVELOPMENT TRIP GENERATION



SPECIFIC NON-SITE DEVELOPMENT TRIP GENERATION							
Development	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)	1,311	28	77	105	84	50	134
K-8 Proposed School on Clayton Arnold (1,600 Students)	3,216	540	460	1,000	132	140	272
Proposed Canterbury (50%)	1,394	29	79	108	86	53	139
				0			0
<b>TOTAL</b>	<b>5,921</b>	<b>597</b>	<b>616</b>	<b>1,213</b>	<b>302</b>	<b>243</b>	<b>545</b>

AVENUE DOWNS TRIP GENERATION 2021 HORIZON YEAR							
Development	Daily	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Avenue Downs (69 Single Family)	739	15	43	58	48	27	75
<b>TOTAL</b>	<b>739</b>	<b>15</b>	<b>43</b>	<b>58</b>	<b>48</b>	<b>27</b>	<b>75</b>



## TRIP GENERATION - 10th EDITION - AVENUE DOWNS

### Single-Family Detached Housing - 69 Dwelling Units

Use ITE Land Use Code 210 (Single-Family Detached Housing) and associated trip generation rates for 24-hour total trips and peak hour trips.

#### Average Daily Traffic

$$\begin{aligned}\ln(T) &= 0.92 \ln(X) + 2.71 \\ \ln(T) &= 0.92 \ln(69) + 2.71 \\ T &= 739\end{aligned}$$

#### A.M. Peak Hour of Generator

$$\begin{aligned}\ln(T) &= 0.91 \ln(X) + 0.20 \\ \ln(T) &= 0.91 \ln(69) + 0.20 \\ T &= 58\end{aligned}$$

$$\begin{aligned}\text{Enter} &= 0.26(58) = 15 \\ \text{Exit} &= 0.74(58) = 43\end{aligned}$$

#### P.M. Peak Hour of Generator

$$\begin{aligned}\ln(T) &= 0.94 \ln(X) + 0.34 \\ \ln(T) &= 0.94 \ln(69) + 0.34 \\ T &= 75\end{aligned}$$

$$\begin{aligned}\text{Enter} &= 0.64(75) = 48 \\ \text{Exit} &= 0.36(75) = 27\end{aligned}$$

## TRIP GENERATION - 10th EDITION

**Elementary School - 800 Students**

Use ITE Land Use Code 520 (Elementary School) and associated trip generation rates for 24-hour total trips and peak hour trips.

### Average Daily Traffic

$$T = 1.89(X)$$

$$T = 1.89(800)$$

$$T = 1512$$

### A.M. Peak Hour

$$T = 0.67(X)$$

$$T = 0.67(800)$$

$$T = 536$$

$$\text{Enter} = 0.54(536) = 289$$

$$\text{Exit} = 0.46(536) = 247$$

### P.M. Peak Hour of Adjacent Street Traffic

$$T = 0.17(X)$$

$$T = 0.17(800)$$

$$T = 136$$

$$\text{Enter} = 0.48(136) = 65$$

$$\text{Exit} = 0.52(136) = 71$$

## TRIP GENERATION - 10th EDITION

**Middle School/Junior High School - 800 Students**

Use ITE Land Use Code 522 (Middle School/Junior High School) and associated trip generation rates for 24-hour total trips and peak hour trips.

### Average Daily Traffic

$$T = 2.13(X)$$

$$T = 2.13(800)$$

$$T = 1704$$

### A.M. Peak Hour

$$T = 0.58(X)$$

$$T = 0.58(800)$$

$$T = 464$$

$$\text{Enter} = 0.54(464) = 251$$

$$\text{Exit} = 0.46(464) = 213$$

### P.M. Peak Hour of Adjacent Street Traffic

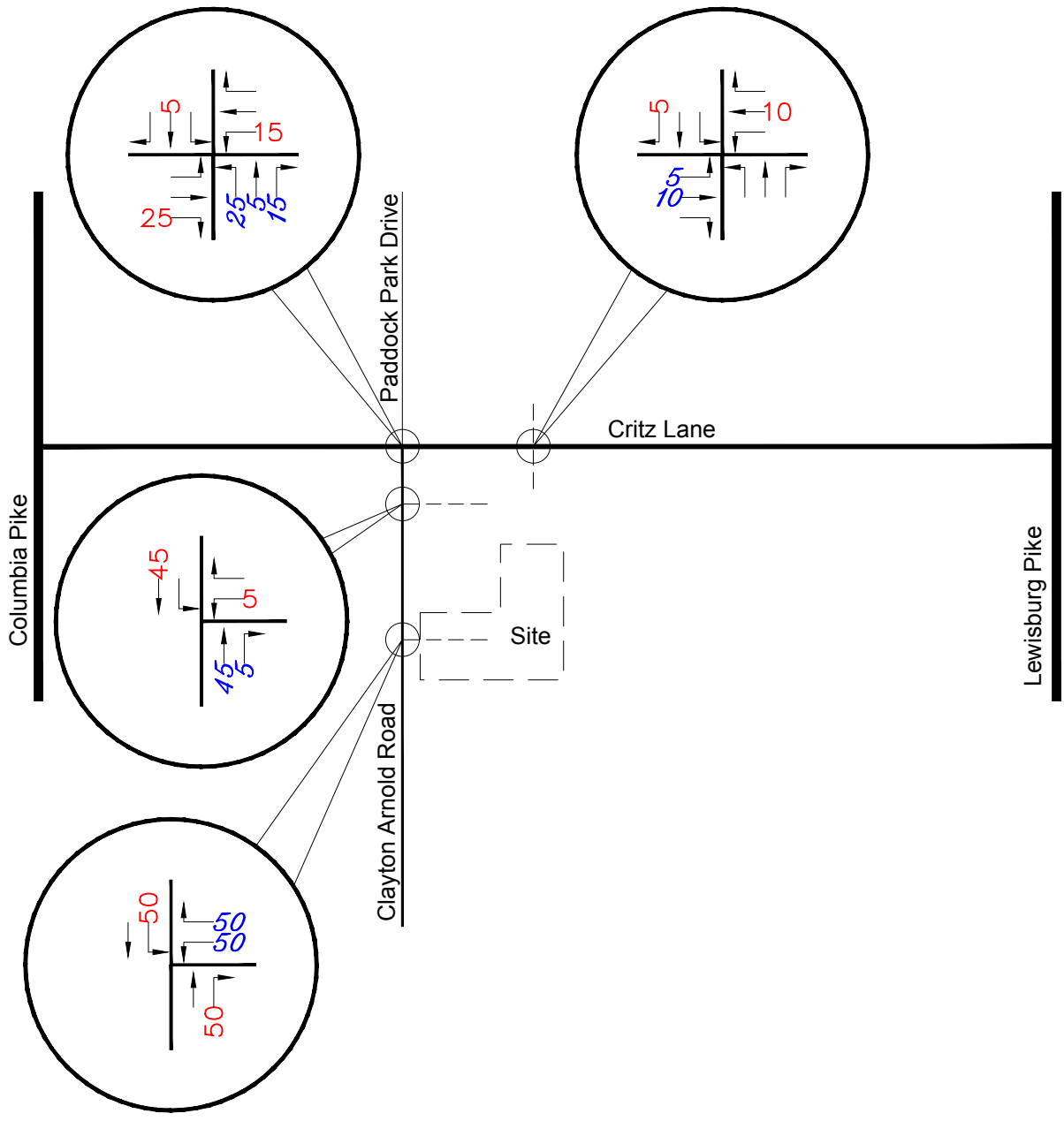
$$T = 0.17(X)$$

$$T = 0.17(800)$$

$$T = 136$$

$$\text{Enter} = 0.49(136) = 67$$

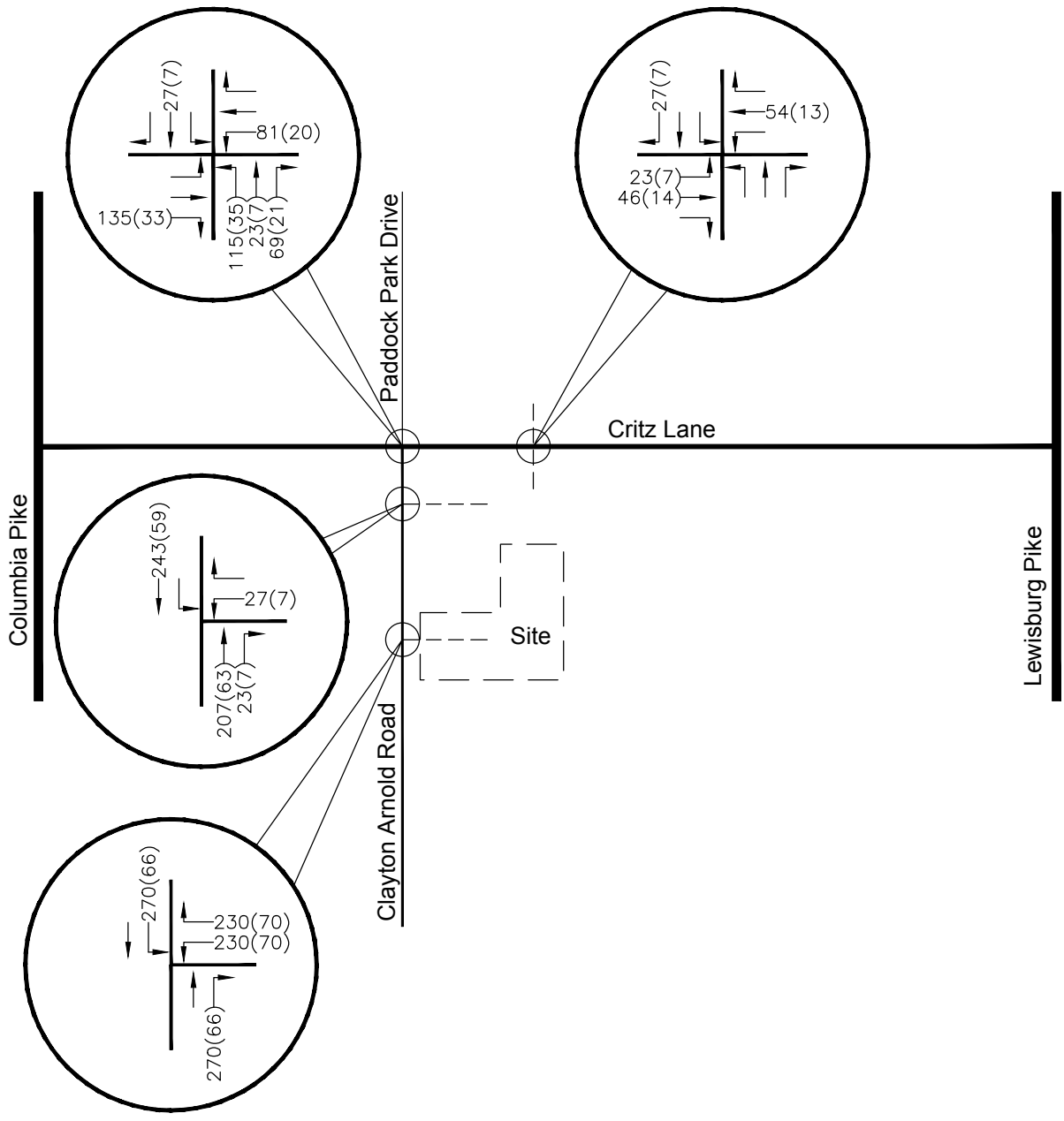
$$\text{Exit} = 0.51(136) = 69$$



XX INBOUND  
XX OUTBOUND



# Clayton Arnold Road School Trip Distribution



Peak Hours  
AM (PM)



# Clayton Arnold Road School Site Volumes

## TRIP GENERATION - 10th EDITION - REMAINING CANTERBURY

### Single-Family Detached Housing - 90 Dwelling Units

Use ITE Land Use Code 210 (Single-Family Detached Housing) and associated trip generation rates for 24-hour total trips and peak hour trips.

#### Average Daily Traffic

$$\begin{aligned}\ln(T) &= 0.92 \ln(X) + 2.71 \\ \ln(T) &= 0.92 \ln(90) + 2.71 \\ T &= 944\end{aligned}$$

#### A.M. Peak Hour of Generator

$$\begin{aligned}\ln(T) &= 0.91 \ln(X) + 0.20 \\ \ln(T) &= 0.91 \ln(90) + 0.20 \\ T &= 73\end{aligned}$$

$$\begin{aligned}\text{Enter} &= 0.26(73) = 19 \\ \text{Exit} &= 0.74(73) = 54\end{aligned}$$

#### P.M. Peak Hour of Generator

$$\begin{aligned}\ln(T) &= 0.94 \ln(X) + 0.34 \\ \ln(T) &= 0.94 \ln(90) + 0.34 \\ T &= 97\end{aligned}$$

$$\begin{aligned}\text{Enter} &= 0.64(97) = 62 \\ \text{Exit} &= 0.36(97) = 35\end{aligned}$$



## TRIP GENERATION - 10th EDITION - REMAINING CANTERBURY

### Multifamily H 54 Dwelling Units

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels.

#### Average Daily Traffic

$$T = 7.56(X) - 40.86$$

$$T = 7.56(54) - 40.86$$

$$T = 367$$

#### A.M. Peak Hour of Generator

$$\ln(T) = 0.94 \ln(X) - 0.29$$

$$\ln(T) = 0.94 \ln(54) - 0.29$$

$$T = 32$$

$$\text{Enter} = 0.28(32) = 9$$

$$\text{Exit} = 0.72(32) = 23$$

#### P.M. Peak Hour of Generator

$$T = 0.66(X) + 1.41$$

$$T = 0.66(54) + 1.41$$

$$T = 37$$

$$\text{Enter} = 0.59(37) = 22$$

$$\text{Exit} = 0.41(37) = 15$$

## TRIP GENERATION - 10th EDITION - PROPOSED CANTERBURY

### Single-Family Detached Housing - 179 Dwelling Units

Use ITE Land Use Code 210 (Single-Family Detached Housing) and associated trip generation rates for 24-hour total trips and peak hour trips.

#### Average Daily Traffic

$$\ln(T) = 0.92 \ln(X) + 2.71$$

$$\ln(T) = 0.92 \ln(179) + 2.71$$

$$T = 1776$$

#### A.M. Peak Hour of Generator

$$\ln(T) = 0.91 \ln(X) + 0.20$$

$$\ln(T) = 0.91 \ln(179) + 0.20$$

$$T = 137$$

$$\text{Enter} = 0.26(137) = 36$$

$$\text{Exit} = 0.74(137) = 101$$

#### P.M. Peak Hour of Generator

$$\ln(T) = 0.94 \ln(X) + 0.34$$

$$\ln(T) = 0.94 \ln(179) + 0.34$$

$$T = 184$$

$$\text{Enter} = 0.64(184) = 118$$

$$\text{Exit} = 0.36(184) = 66$$

## TRIP GENERATION - 10th EDITION - PROPOSED CANTERBURY

### Multifamily H 141 Dwelling Units

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels.

#### Average Daily Traffic

$$T = 7.56(X) - 40.86$$

$$T = 7.56(141) - 40.86$$

$$T = 1025$$

#### A.M. Peak Hour of Generator

$$\ln(T) = 0.94 \ln(X) - 0.29$$

$$\ln(T) = 0.94 \ln(141) - 0.29$$

$$T = 78$$

$$\text{Enter} = 0.28(78) = 22$$

$$\text{Exit} = 0.72(78) = 56$$

#### P.M. Peak Hour of Generator

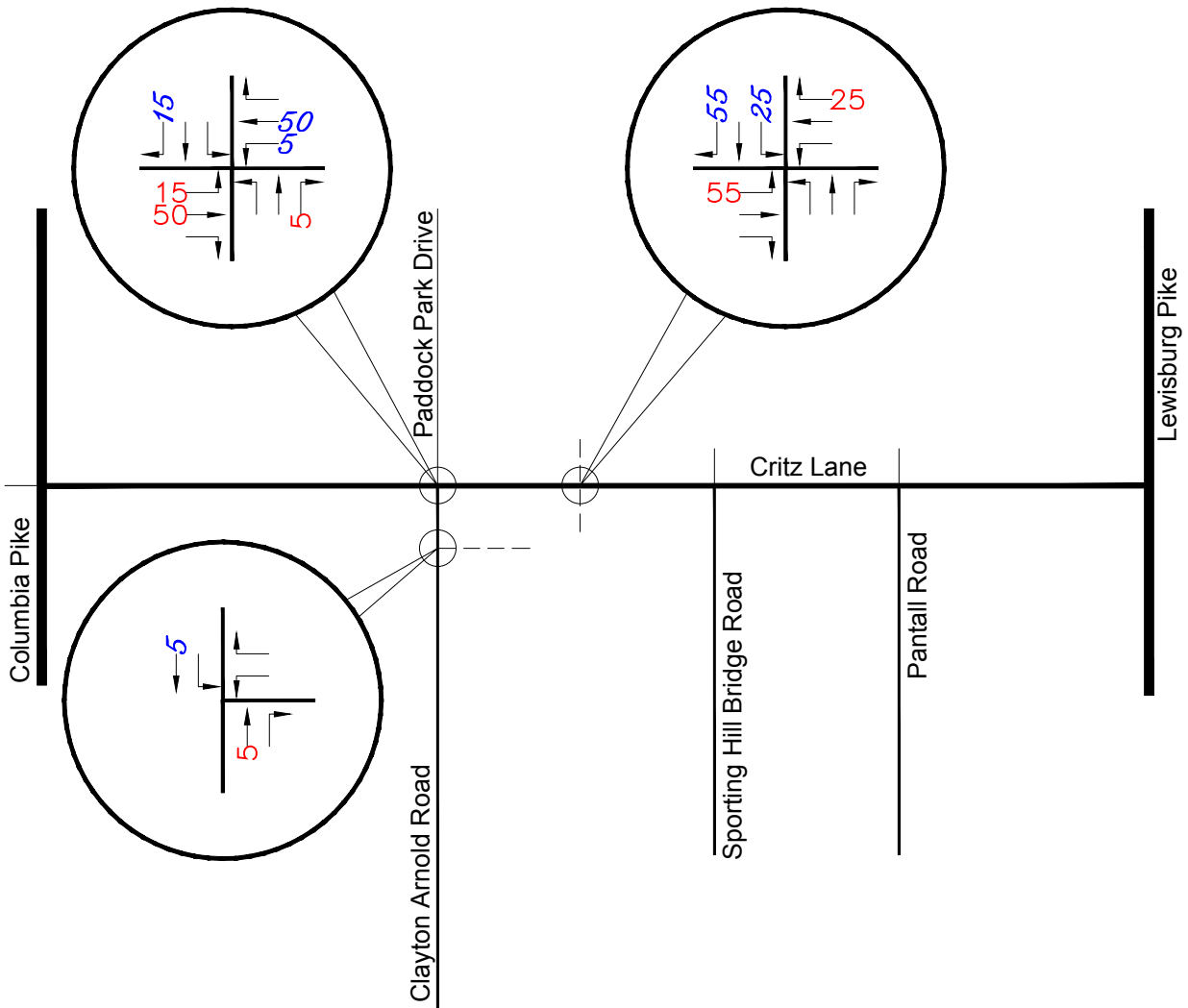
$$T = 0.66(X) + 1.41$$

$$T = 0.66(141) + 1.41$$

$$T = 94$$

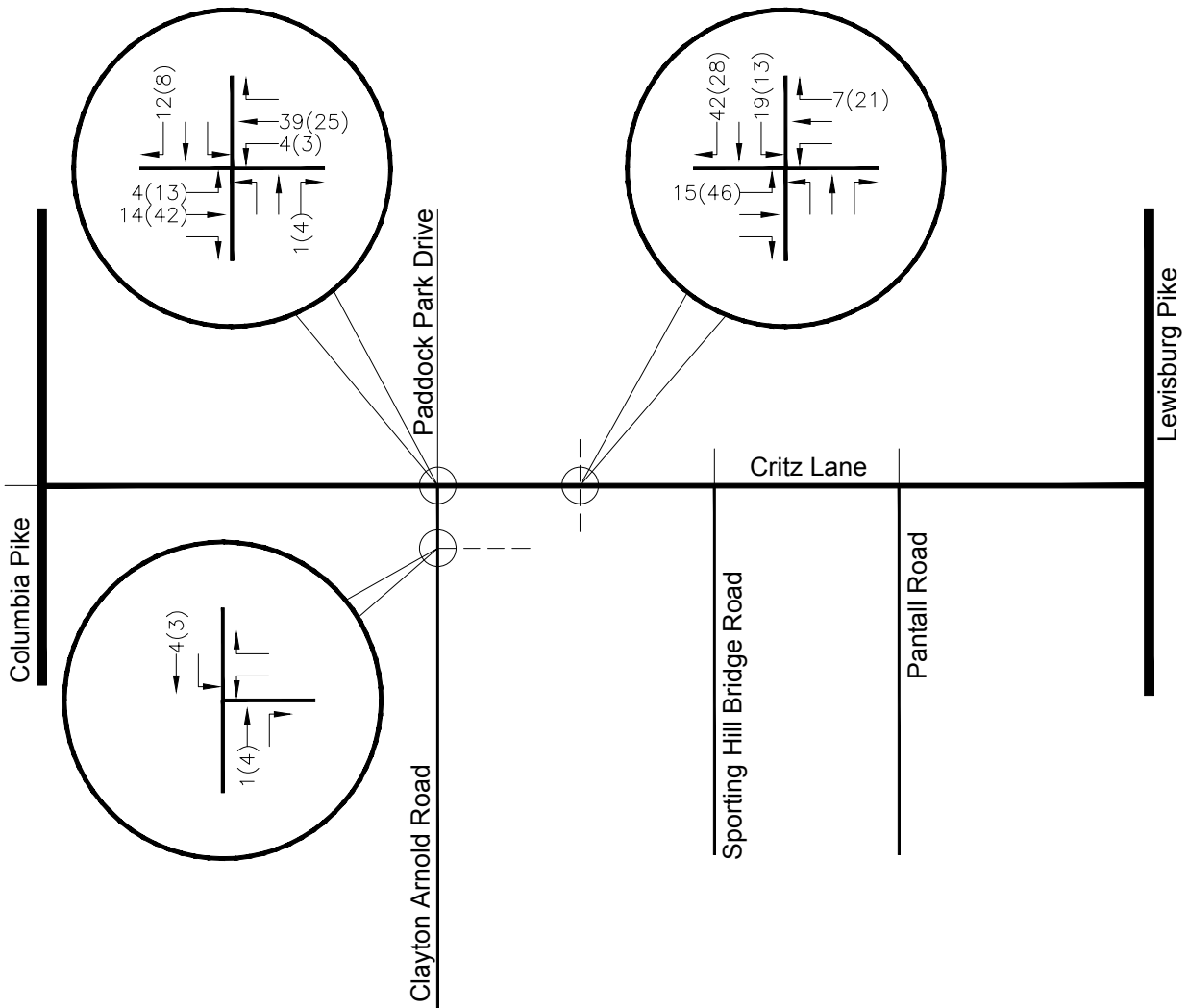
$$\text{Enter} = 0.59(94) = 55$$

$$\text{Exit} = 0.41(94) = 39$$



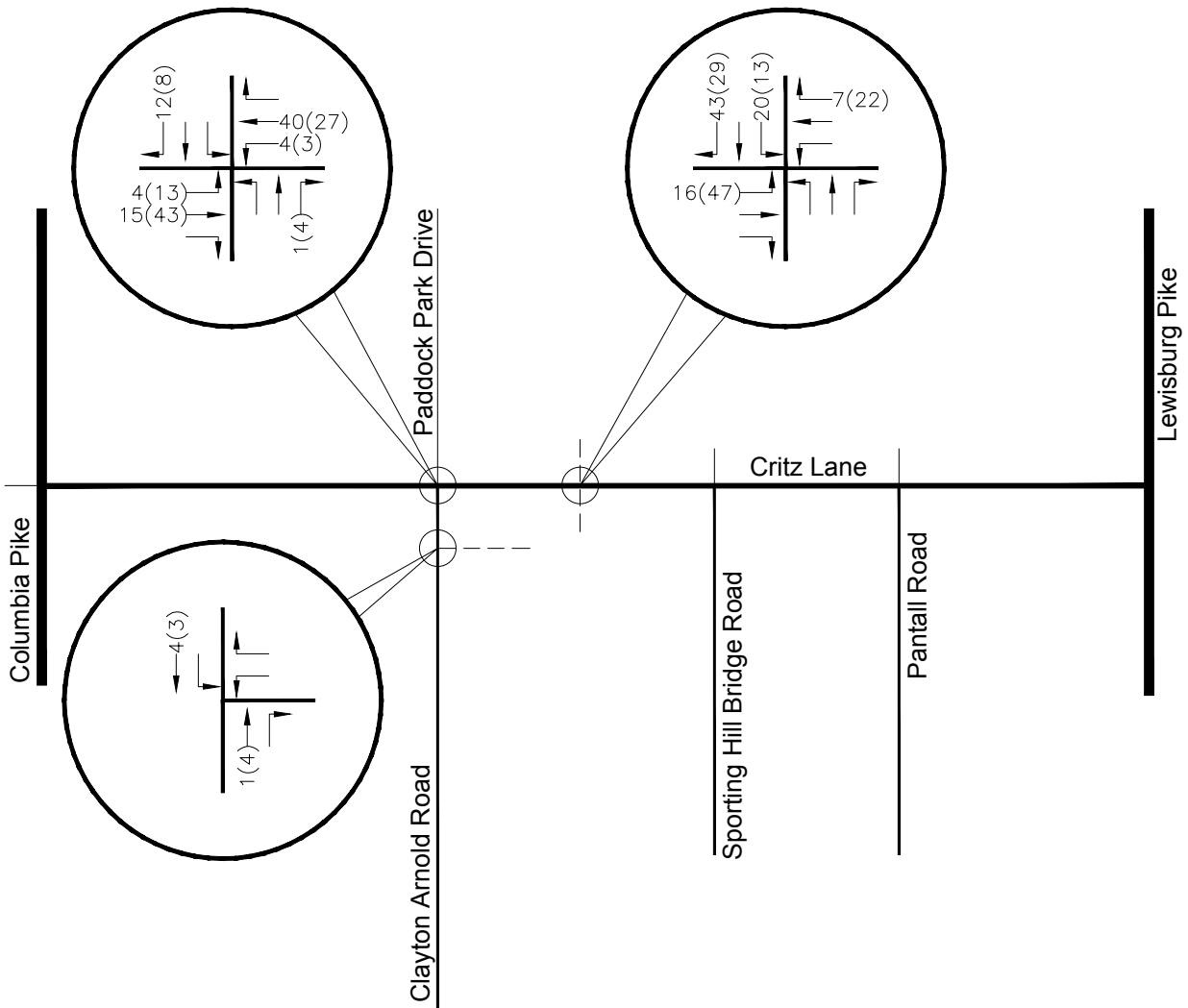
XX INBOUND  
XX OUTBOUND





Peak Hours  
AM (PM)





Peak Hours  
AM (PM)



# Proposed Fields of Canterbury (50%) Site Volumes

TRAFFIC VOLUME WORKSHEET  
 CRITZ LANE AT CLAYTON ARNOLD ROAD  
 A.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound			
	Clayton Arnold Road	Paddock Park Drive	Critz Lane	Critz Lane	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES	205	10	7	11	21	32	8	6	29	68	39	30	
2021 BACKGROUND TRAFFIC VOLUMES													
<i>Annual Background Growth</i>													
Growth Rate (%/year)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Growth Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Annual Background Growth Trips	17	1	1	1	2	3	1	0	2	6	3	2	
<i>Specific Development Background Growth</i>													
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)			5			15		15	50		5	50	
% In Trips	0	0	1	0	0	12	4	14	0	4	39	0	
% Out Trips													
K-8 Proposed School on Clayton Arnold (1,600 Students)			25		5	15		5		25	15		
% In Trips	115	23	69	0	27	0	0	0	135	81	0	0	
% Out Trips													
Proposed Canterbury (50%)			5			15		15	50		5	50	
% In Trips	0	0	1	0	0	12	4	15	0	4	40	0	
% Out Trips													
Specific Development Background Growth Trips	115	23	71	0	27	24	8	29	135	89	79	0	
2021 Background Traffic Volumes	337	34	79	12	50	59	17	35	166	163	121	32	
2021 SITE TRAFFIC VOLUMES													
Avenue Downs (69 Single Family)			30					30	30		30		
% In Trips	13	0	0	0	0	0	0	5	5	0	13	0	
% Out Trips													
2021 Site Traffic Volumes	13	0	0	0	0	0	0	5	5	0	13	0	
2021 TOTAL TRAFFIC VOLUMES	350	34	79	12	50	59	17	40	171	163	134	32	

TRAFFIC VOLUME WORKSHEET  
 CRITZ LANE AT CLAYTON ARNOLD ROAD  
 P.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound		
	Clayton Arnold Road	Paddock Park Drive	Critz Lane	Clayton Arnold Road	Paddock Park Drive	Critz Lane	Clayton Arnold Road	Paddock Park Drive	Critz Lane	Clayton Arnold Road	Paddock Park Drive	Critz Lane
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES	54	16	20	19	40	25	14	33	463	46	34	41
2021 BACKGROUND TRAFFIC VOLUMES												
<i>Annual Background Growth</i>												
Growth Rate (%/year)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Growth Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Annual Background Growth Trips	4	1	2	2	3	2	1	3	38	4	3	3
<i>Specific Development Background Growth</i>												
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)			5			15	15	50		5	50	
% In Trips	0	0	4	0	0	8	13	42	0	3	25	0
% Out Trips												
K-8 Proposed School on Clayton Arnold (1,600 Students)	25	5	15		5			25		15		
% In Trips	35	7	21	0	7	0	0	0	33	20	0	0
% Out Trips												
Proposed Canterbury (50%)			5			15	15	50		5	50	
% In Trips	0	0	4	0	0	8	13	43	0	3	27	0
% Out Trips												
Specific Development Background Growth Trips	35	7	29	0	7	16	26	85	33	26	52	0
2021 Background Traffic Volumes	93	24	51	21	50	43	41	121	534	76	89	44
2021 SITE TRAFFIC VOLUMES												
Avenue Downs (69 Single Family)	30						30	30		30		
% In Trips	8	0	0	0	0	0	0	14	14	0	8	0
% Out Trips												
2021 Site Traffic Volumes	8	0	0	0	0	0	0	14	14	0	8	0
2021 TOTAL TRAFFIC VOLUMES	101	24	51	21	50	43	41	135	548	76	97	44



TRAFFIC VOLUME WORKSHEET  
 CLAYTON ARNOLD ROAD AT PROJECT ACCESS  
 A.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound		
	Clayton Arnold Road			Clayton Arnold Road			Project Access			Project Access		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES	222			118								
2021 BACKGROUND TRAFFIC VOLUMES												
<i>Annual Background Growth</i>												
Growth Rate (%/year)	2.0			2.0								
Growth Factor	1.00	1.08	1.00	1.00	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Annual Background Growth Trips	0	18	0	0	10	0	0	0	0	0	0	0
<i>Specific Development Background Growth</i>												
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)	5			5								
% In Trips	0	1	0	0	4	0	0	0	0	0	0	0
% Out Trips												
K-8 Proposed School on Clayton Arnold (1,600 Students)	45			45						5		
% In Trips	0	207	23	0	243	0	0	0	0	27	0	0
% Out Trips												
Proposed Canterbury (50%)	5			5								
% In Trips	0	1	0	0	4	0	0	0	0	0	0	0
% Out Trips												
Specific Development Background Growth Trips	0	209	23	0	251	0	0	0	0	27	0	0
2021 Background Traffic Volumes	0	449	23	0	379	0	0	0	0	27	0	0
2021 SITE TRAFFIC VOLUMES												
Avenue Downs (69 Single Family)	25			30						25		
% In Trips	0	0	4	5	0	0	0	0	0	11	0	13
% Out Trips												
2021 Site Traffic Volumes	0	0	4	5	0	0	0	0	0	11	0	13
2021 TOTAL TRAFFIC VOLUMES	0	449	27	5	379	0	0	0	0	38	0	13

TRAFFIC VOLUME WORKSHEET  
 CLAYTON ARNOLD ROAD AT PROJECT ACCESS  
 P.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound		
	Clayton Arnold Road			Clayton Arnold Road						Project Access		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES	90			549								
2021 BACKGROUND TRAFFIC VOLUMES												
<i>Annual Background Growth</i>												
Growth Rate (%/year)	2.0			2.0								
Growth Factor	1.00	1.08	1.00	1.00	1.08	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Annual Background Growth Trips	0	7	0	0	45	0	0	0	0	0	0	0
<i>Specific Development Background Growth</i>												
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)	5			5								
% In Trips	0	4	0	0	3	0	0	0	0	0	0	0
% Out Trips												
K-8 Proposed School on Clayton Arnold (1,600 Students)	45			45						5		
% In Trips	0	63	7	0	59	0	0	0	0	7	0	0
% Out Trips												
Proposed Canterbury (50%)	5			5								
% In Trips	0	4	0	0	3	0	0	0	0	0	0	0
% Out Trips												
Specific Development Background Growth Trips	0	71	7	0	65	0	0	0	0	7	0	0
2021 Background Traffic Volumes	0	168	7	0	659	0	0	0	0	7	0	0
2021 SITE TRAFFIC VOLUMES												
Avenue Downs (69 Single Family)	25			30						25		
% In Trips	0	0	12	14	0	0	0	0	0	7	0	8
% Out Trips												
2021 Site Traffic Volumes	0	0	12	14	0	0	0	0	0	7	0	8
2021 TOTAL TRAFFIC VOLUMES	0	168	19	14	659	0	0	0	0	14	0	8

TRAFFIC VOLUME WORKSHEET  
 CRITZ LANE AT PROJECT ACCESS  
 A.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound		
	Project Access			Project Access			Critz Lane			Critz Lane		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES							24			137		
2021 BACKGROUND TRAFFIC VOLUMES												
<i>Annual Background Growth</i>												
Growth Rate (%/year)							2.0			2.0		
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.08	1.00	1.00	1.08	1.00
Annual Background Growth Trips	0	0	0	0	0	0	0	2	0	0	11	0
<i>Specific Development Background Growth</i>												
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)							55			25		
% In Trips	0	0	0	19	0	42	15	0	0	0	0	7
% Out Trips	0	0	0	0	0	27	23	46	0	0	54	0
K-8 Proposed School on Clayton Arnold (1,600 Students)							5			10		
% In Trips	0	0	0	0	0	27	5	10	0	0	54	0
% Out Trips	0	0	0	20	0	43	16	0	0	0	0	7
Specific Development Background Growth Trips	0	0	0	39	0	112	54	46	0	0	54	14
2021 Background Traffic Volumes	0	0	0	39	0	112	54	72	0	0	202	14
2021 SITE TRAFFIC VOLUMES												
Avenue Downs (69 Single Family)							30			15		
% In Trips	13	0	6	0	0	0	0	0	5	2	0	0
% Out Trips	0	0	0	0	0	0	0	0	5	2	0	0
2021 Site Traffic Volumes	13	0	6	0	0	0	0	0	5	2	0	0
2021 TOTAL TRAFFIC VOLUMES	13	0	6	39	0	112	54	72	5	2	202	14

TRAFFIC VOLUME WORKSHEET  
 CRITZ LANE AT PROJECT ACCESS  
 P.M. PEAK HOUR



Description	Northbound			Southbound			Eastbound			Westbound		
	Project Access			Project Access			Critz Lane			Critz Lane		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2017 EXISTING TRAFFIC VOLUMES								72			121	
2021 BACKGROUND TRAFFIC VOLUMES												
<i>Annual Background Growth</i>												
Growth Rate (%/year)								2.0			2.0	
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.08	1.00	1.00	1.08	1.00
Annual Background Growth Trips	0	0	0	0	0	0	0	6	0	0	10	0
<i>Specific Development Background Growth</i>												
Remaining Canterbury (Phase 12B, 12C, 13: 90 SF, 54 TH)												
% In Trips				25		55	55				25	
% Out Trips	0	0	0	13	0	28	46	0	0	0	0	21
K-8 Proposed School on Clayton Arnold (1,600 Students)												
% In Trips						5	5	10			10	
% Out Trips	0	0	0	0	0	7	7	14	0	0	13	0
Proposed Canterbury (50%)												
% In Trips				25		55	55				25	
% Out Trips	0	0	0	13	0	29	47	0	0	0	0	22
Specific Development Background Growth Trips	0	0	0	26	0	64	100	14	0	0	13	43
2021 Background Traffic Volumes	0	0	0	26	0	64	100	92	0	0	144	43
2021 SITE TRAFFIC VOLUMES												
Avenue Downs (69 Single Family)												
% In Trips	30		15					30			15	
% Out Trips	8	0	4	0	0	0	0	0	14	7	0	0
2021 Site Traffic Volumes	8	0	4	0	0	0	0	0	14	7	0	0
2021 TOTAL TRAFFIC VOLUMES	8	0	4	26	0	64	100	92	14	7	144	43

## **APPENDIX C**

# **2017 EXISTING CONDITIONS CAPACITY ANALYSIS WORKSHEETS**

**Intersection**

Int Delay, s/veh 10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	6	29	68	39	30	205	10	7	11	21	32
Future Vol, veh/h	8	6	29	68	39	30	205	10	7	11	21	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	7	35	82	47	36	247	12	8	13	25	39

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	83	0	0	42
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1514	-	-	1567
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1514	-	-	1567
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	3.7	16.3	10.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	582	1514	-	-	1567	-	-	746
HCM Lane V/C Ratio	0.46	0.006	-	-	0.052	-	-	0.103
HCM Control Delay (s)	16.3	7.4	0	-	7.4	0	-	10.4
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	2.4	0	-	-	0.2	-	-	0.3

HCM 2010 TWSC  
 3: Clayton Arnold Road & Critz Lane

01/15/2018

**Intersection**

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	33	463	46	34	41	54	16	20	19	40	25
Future Vol, veh/h	14	33	463	46	34	41	54	16	20	19	40	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	36	503	50	37	45	59	17	22	21	43	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	539	0	0	513	500	288	497	729	59
Stage 1	-	-	-	-	-	-	318	318	-	159	159	-
Stage 2	-	-	-	-	-	-	195	182	-	338	570	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1029	-	-	472	473	751	483	350	1007
Stage 1	-	-	-	-	-	-	693	654	-	843	766	-
Stage 2	-	-	-	-	-	-	807	749	-	676	505	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1515	-	-	1029	-	-	392	442	751	432	327	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	392	442	-	432	327	-
Stage 1	-	-	-	-	-	-	683	644	-	830	727	-
Stage 2	-	-	-	-	-	-	701	711	-	629	497	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			3.3			15.2			15.3		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	449	1515	-	-	1029	-	-	439
HCM Lane V/C Ratio	0.218	0.01	-	-	0.049	-	-	0.208
HCM Control Delay (s)	15.2	7.4	0	-	8.7	0	-	15.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	0.8

## **APPENDIX D**

# **2021 BACKGROUND CONDITIONS CAPACITY ANALYSIS WORKSHEETS**



HCM 2010 Roundabout  
 3: Clayton Arnold Road & Critz Lane

07/30/2018

Intersection				
Intersection Delay, s/veh	10.9			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	262	381	542	145
Demand Flow Rate, veh/h	267	389	553	147
Vehicles Circulating, veh/h	275	476	77	763
Vehicles Exiting, veh/h	635	154	465	102
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.7	14.3	10.0	11.0
Approach LOS	A	B	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	267	389	553	147
Cap Entry Lane, veh/h	858	702	1046	527
Entry HV Adj Factor	0.982	0.980	0.980	0.985
Flow Entry, veh/h	262	381	542	145
Cap Entry, veh/h	843	688	1026	519
V/C Ratio	0.311	0.554	0.529	0.279
Control Delay, s/veh	7.7	14.3	10.0	11.0
LOS	A	B	B	B
95th %tile Queue, veh	1	3	3	1

HCM 2010 Roundabout  
 3: Clayton Arnold Road & Critz Lane

07/30/2018

Intersection				
Intersection Delay, s/veh	15.2			
Intersection LOS	C			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	757	228	182	124
Demand Flow Rate, veh/h	773	233	186	126
Vehicles Circulating, veh/h	163	176	204	287
Vehicles Exiting, veh/h	250	214	732	122
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	21.5	6.4	6.0	5.8
Approach LOS	C	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	773	233	186	126
Cap Entry Lane, veh/h	960	948	921	848
Entry HV Adj Factor	0.980	0.979	0.981	0.984
Flow Entry, veh/h	757	228	182	124
Cap Entry, veh/h	941	927	904	834
V/C Ratio	0.805	0.246	0.202	0.149
Control Delay, s/veh	21.5	6.4	6.0	5.8
LOS	C	A	A	A
95th %tile Queue, veh	9	1	1	1

## **APPENDIX E**

# **2021 TOTAL CONDITIONS CAPACITY ANALYSIS WORKSHEETS**

HCM 2010 Roundabout  
 3: Clayton Arnold Road & Critz Lane

07/30/2018

Intersection				
Intersection Delay, s/veh	11.5			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	274	396	558	145
Demand Flow Rate, veh/h	279	404	569	147
Vehicles Circulating, veh/h	275	492	83	794
Vehicles Exiting, veh/h	666	160	471	102
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.9	15.5	10.4	11.5
Approach LOS	A	C	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	279	404	569	147
Cap Entry Lane, veh/h	858	691	1040	511
Entry HV Adj Factor	0.982	0.980	0.981	0.985
Flow Entry, veh/h	274	396	558	145
Cap Entry, veh/h	843	677	1020	503
V/C Ratio	0.325	0.585	0.547	0.288
Control Delay, s/veh	7.9	15.5	10.4	11.5
LOS	A	C	B	B
95th %tile Queue, veh	1	4	3	1

HCM 2010 Roundabout  
 3: Clayton Arnold Road & Critz Lane

07/30/2018

Intersection				
Intersection Delay, s/veh	16.8			
Intersection LOS	C			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	788	236	191	124
Demand Flow Rate, veh/h	804	241	195	126
Vehicles Circulating, veh/h	163	185	219	304
Vehicles Exiting, veh/h	267	229	748	122
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	24.2	6.5	6.2	5.9
Approach LOS	C	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	804	241	195	126
Cap Entry Lane, veh/h	960	939	908	834
Entry HV Adj Factor	0.980	0.979	0.982	0.984
Flow Entry, veh/h	788	236	191	124
Cap Entry, veh/h	941	919	891	820
V/C Ratio	0.838	0.257	0.215	0.151
Control Delay, s/veh	24.2	6.5	6.2	5.9
LOS	C	A	A	A
95th %tile Queue, veh	10	1	1	1



HCM 2010 TWSC  
7: Clayton Arnold Road & Evans Farm Access

07/30/2018

Intersection

Int Delay, s/veh 1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	13	449	27	5	379
Future Vol, veh/h	38	13	449	27	5	379
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	14	488	29	5	412

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	926	503	0	0	517
Stage 1	503	-	-	-	-
Stage 2	423	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	298	569	-	-	1049
Stage 1	607	-	-	-	-
Stage 2	661	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	296	569	-	-	1049
Mov Cap-2 Maneuver	296	-	-	-	-
Stage 1	607	-	-	-	-
Stage 2	657	-	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	17.8	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	337	1049
HCM Lane V/C Ratio	-	-	0.164	0.005
HCM Control Delay (s)	-	-	17.8	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0

HCM 2010 TWSC  
7: Clayton Arnold Road & Evans Farm Access

07/30/2018

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	S	S
Traffic Vol, veh/h	14	8	168	19	14	659
Future Vol, veh/h	14	8	168	19	14	659
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	9	183	21	15	716

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	940	193	0	0	203
Stage 1	193	-	-	-	-
Stage 2	747	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	293	849	-	-	1369
Stage 1	840	-	-	-	-
Stage 2	468	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	288	849	-	-	1369
Mov Cap-2 Maneuver	288	-	-	-	-
Stage 1	840	-	-	-	-
Stage 2	460	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.1	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	379	1369
HCM Lane V/C Ratio	-	-	0.063	0.011
HCM Control Delay (s)	-	-	15.1	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	54	72	5	2	202	14	13	0	6	39	0	112
Future Vol, veh/h	54	72	5	2	202	14	13	0	6	39	0	112
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	78	5	2	220	15	14	0	7	42	0	122

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	235	0	0	84	0	0	490	437	81	434	433	227
Stage 1	-	-	-	-	-	-	198	198	-	232	232	-
Stage 2	-	-	-	-	-	-	292	239	-	202	201	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1332	-	-	1513	-	-	489	513	979	532	516	812
Stage 1	-	-	-	-	-	-	804	737	-	771	713	-
Stage 2	-	-	-	-	-	-	716	708	-	800	735	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1332	-	-	1513	-	-	401	490	979	510	492	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	490	-	510	492	-
Stage 1	-	-	-	-	-	-	768	704	-	737	712	-
Stage 2	-	-	-	-	-	-	608	707	-	759	702	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.2			0.1			12.6			11.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	493	1332	-	-	1513	-	-	704
HCM Lane V/C Ratio	0.042	0.044	-	-	0.001	-	-	0.233
HCM Control Delay (s)	12.6	7.8	-	-	7.4	-	-	11.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.9

HCM 2010 TWSC  
 19: Project Access & Critz Lane

07/30/2018

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	100	92	14	7	144	43	8	0	4	26	0	64
Future Vol, veh/h	100	92	14	7	144	43	8	0	4	26	0	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	100	15	8	157	47	9	0	4	28	0	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	115	0	0	555	543	108	522	528	180
Stage 1	-	-	-	-	-	-	325	325	-	195	195	-
Stage 2	-	-	-	-	-	-	230	218	-	327	333	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1474	-	-	442	447	946	465	456	863
Stage 1	-	-	-	-	-	-	687	649	-	807	739	-
Stage 2	-	-	-	-	-	-	773	723	-	686	644	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1369	-	-	1474	-	-	380	409	946	433	417	863
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	409	-	433	417	-
Stage 1	-	-	-	-	-	-	632	597	-	743	735	-
Stage 2	-	-	-	-	-	-	707	719	-	628	593	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	3.8			0.3			12.8			11.3		
HCM LOS							B			B		

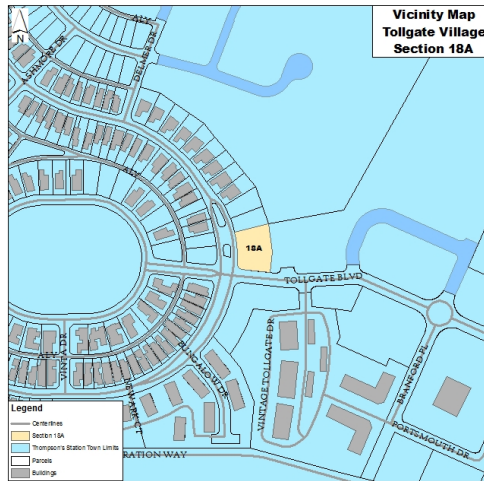
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	475	1369	-	-	1474	-	-	671
HCM Lane V/C Ratio	0.027	0.079	-	-	0.005	-	-	0.146
HCM Control Delay (s)	12.8	7.9	-	-	7.5	-	-	11.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.5

**Thompson's Station Planning Commission**  
**Staff Report –Item 3 (FP 2018-016)**  
**September 25, 2018**

**Request to approve the final plat for Section 18A to create three single-family lots within Tollgate Village.**

**PROJECT DESCRIPTION**

A request to approve the final plat for Section 18A of Tollgate Village to create three single-family lots at the northeast corner of Tollgate Boulevard and Americus Drive.



**BACKGROUND**

On March 27, 2018, the Planning Commission approved the preliminary plat for phase 18 of Tollgate Village for the subdivision of 1.92 acres of land into eight lots with the following contingencies:

1. Prior to the submittal of a final plat, a development agreement shall be approved and executed between the Town and the Developer.
2. Prior to the submittal of a final plat, the secondary access shall be completed and open to traffic.
3. Prior to the submittal of a final plat, all sewer approvals necessary for the project shall be obtained.

On August 28, 2018, the Planning Commission denied the final plat for section 18A due to the following reasons:

1. The developer has not obtained approval related to sewer improvements as required by the preliminary plat approval.
2. Open space is not platted in accordance with Section 5.4.7.

**ANALYSIS**

**Final Plat**

The purpose of the final plat is to provide a legal instrument where the transfer of ownership of lots is allowed and shall constitute a way where streets and other infrastructure can be accepted (LDO Section 5.2.7).

Section 18A, zoned D3 within the neighborhood of Tollgate Village consists of three single-family lots at the northeast corner of Tollgate Boulevard/Americus Drive. The setbacks are 10 feet for the



front yard, 7.5 feet for the side yard, and 20 feet for the rear yard. Lot widths will be a minimum of 50 feet.

#### *Open Space*

The open space required for the Tollgate Village subdivision is 120 acres and as of this submittal, 82.92 acres are recorded. The plat for section 16 open space was approved and will have 20.4 acres. Once the final plat for section 16 open space is recorded, a total of 103.32 acres will be recorded. Another 16.71 acres will be recorded as part of section 17 (if approved) for a total of 120 acres. The Land Development Ordinance states in section 5.4.7 of the Land Development Ordinance that “no more than 60% of the lots may be platted prior to the platting of all of the open space as determined on the concept plan.” Therefore, a contingency should be placed on this plat that all remaining open space shall be recorded prior to the recordation of this (section 18A) final plat.

#### *Sewer*

The Tollgate Village development has approval for 943 sewer taps. With the approval of phase 17 consisting of 70 taps and this section (18A) which requires an additional three (3) taps for a total commitment of 807. However, it is also anticipated that the phase 1 commercial site plan (Tollgate/Elliston) will require 25 taps for a total 832 taps. Staff is tracking the number of taps issued and once the developer has used the allocated taps, no further approvals will be recommended without first obtaining BOMA approval of additional sewer taps.

#### *Development Agreement*

The Development Agreement for phase 18 has not been approved by the Board of Mayor and Aldermen. The development agreement has been sent to the developer and it is anticipated that the agreement will be placed on an upcoming BOMA agenda. Therefore, prior to the recordation of the final plat, the development agreement must be executed between the developer and the Town.

#### *Sureties*

Sewer will be installed to these lots and testing will need to be completed to the satisfaction of the Town. In addition, repairs to the roadway and curbing will be necessary as a result of the construction to extend the sewer line. Therefore, the Town Engineer recommends that the sewer surety be set at \$16,500.

#### **Recommendation**

Staff recommends the Planning Commission approve the final plat with the following contingencies:

1. Prior to the recordation of the final plat, the plats with all remaining open space shall be recorded.
2. Prior to the recordation of the final plat, the development agreement for phase 18 shall be approved and executed between the Town and the developer.
3. Prior to recordation of the final plat, a surety shall be submitted to the Town in the amount of \$16,500 for sewer with automatic renewal.
4. As built drawings shall be required for the drainage and sewer system with a letter from the Design Engineer that they are constructed per the approved drawings and functioning as intended.

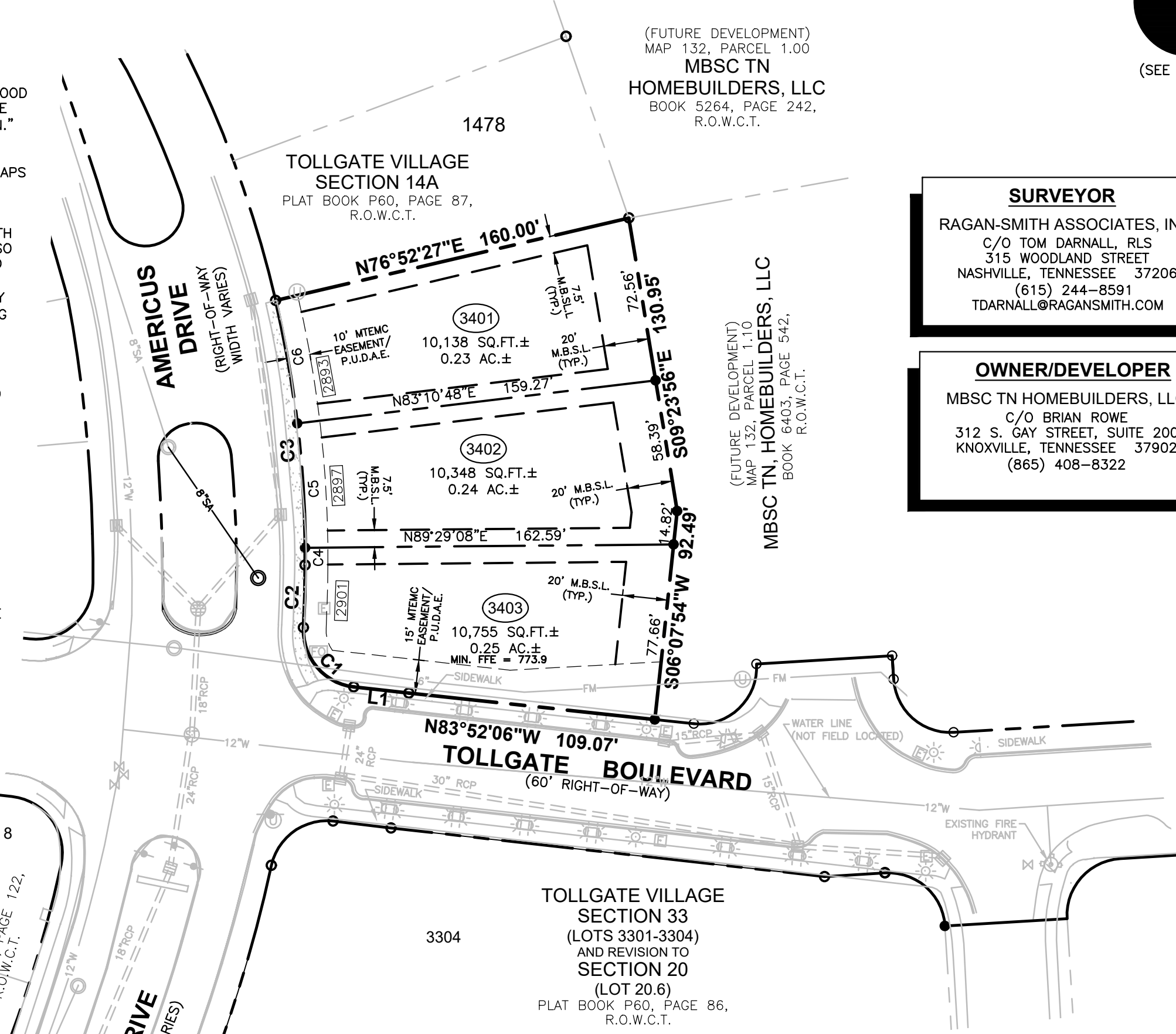
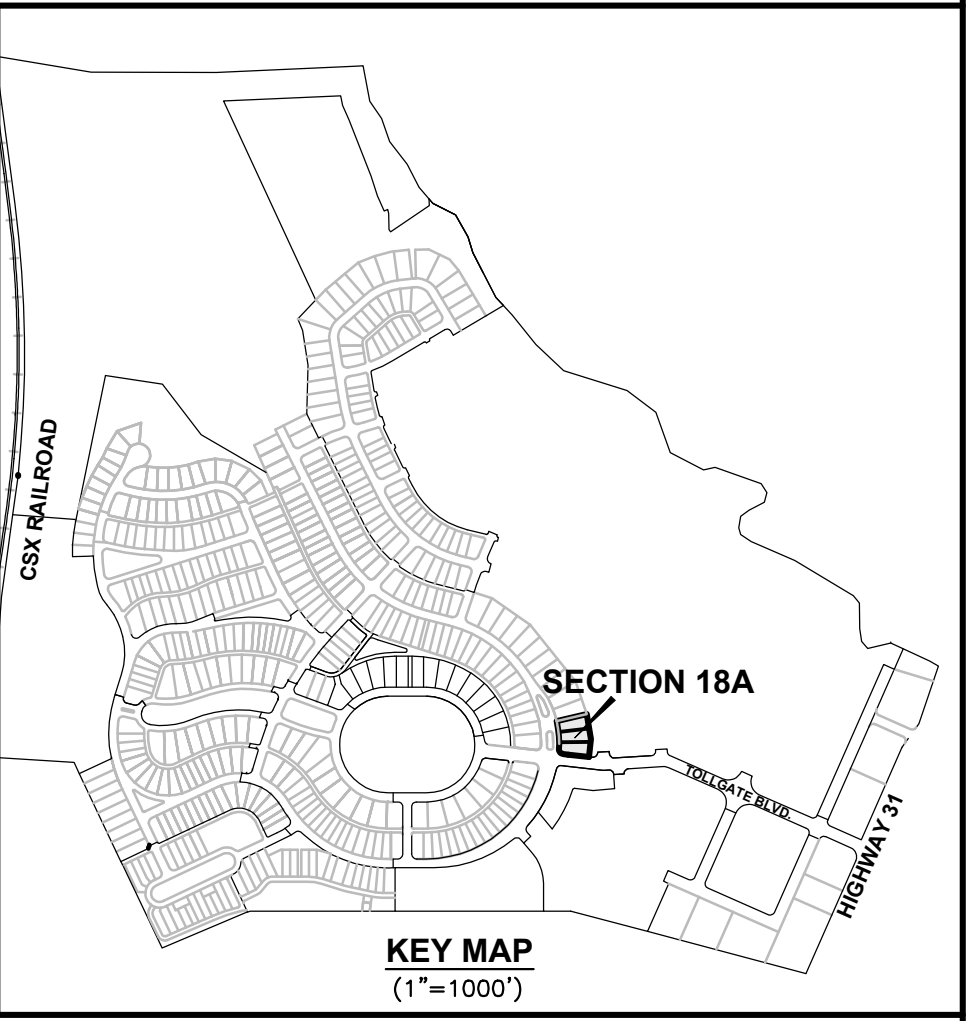
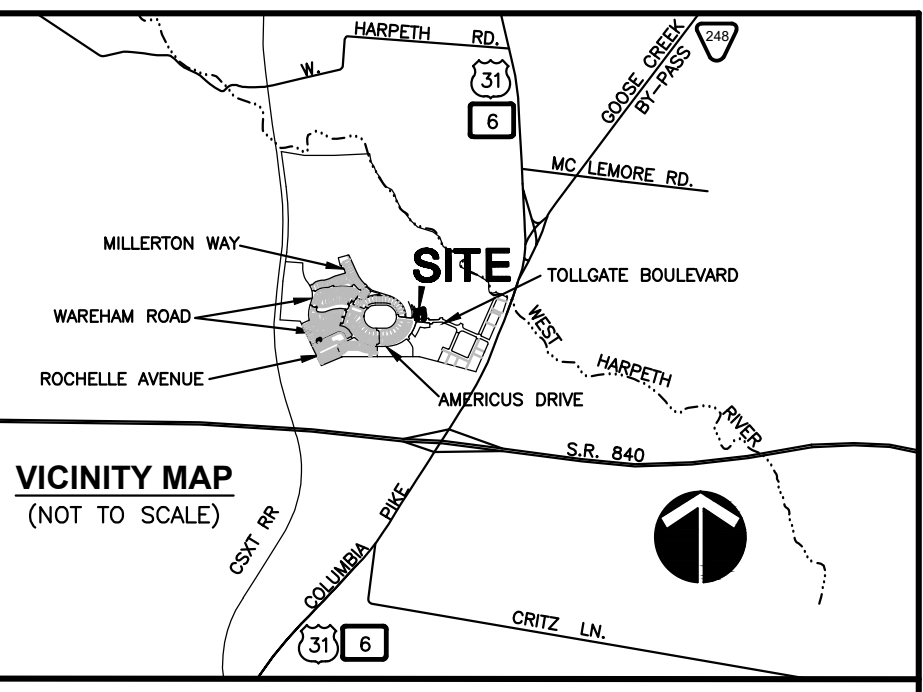
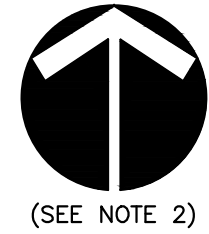
#### **Attachments**

Final Plat

**GENERAL NOTES**

1. THE PURPOSE OF THIS PLAT IS TO CREATE 3 SINGLE FAMILY RESIDENTIAL LOTS.
2. BEARINGS SHOWN HEREON ARE BASED ON TENNESSEE COORDINATE SYSTEM OF 1983.
3. BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE PROPERTY LIES WITHIN FLOOD ZONE "X", AS DESIGNATED ON CURRENT FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS NO. 47187C0335F, WITH AN EFFECTIVE DATE OF SEPTEMBER 29, 2006, WHICH MAKES UP A PART OF THE NATIONAL FLOOD INSURANCE ADMINISTRATION REPORT; COMMUNITY NO. 470424, PANEL NO. 0335, SUFFIX F, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED. SAID MAP DEFINES ZONE "X" UNDER "OTHER AREAS" AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN."
4. THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES, PUBLIC RECORDS, AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. IN TENNESSEE, IT IS A REQUIREMENT, PER "THE UNDERGROUND UTILITY DAMAGE PREVENTION ACT", THAT ANYONE WHO ENGAGES IN EXCAVATION MUST NOTIFY ALL KNOWN UNDERGROUND UTILITY OWNERS NO LESS THAN THREE (3) NOR MORE THAN TEN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL, DIAL 811.
5. THE PROPERTY IS CURRENTLY ZONED D3 (HIGH DENSITY RESIDENTIAL). MAXIMUM LOT COVERAGE - 55% MINIMUM BUILDING SETBACKS PER TOWN OF THOMPSON'S STATION LAND DEVELOPMENT ORDINANCE DATED JUNE 13, 2017:  
 FRONT: 10'  
 REAR: 20'  
 SIDE: 7.5'  
 \*\* DRIVEWAYS SHALL BE A MINIMUM OF 20' IN LENGTH, EXCLUSIVE OF SIDEWALKS.
6. THE DRIVEWAY ACCESS FOR LOT 3403 IS RESTRICTED TO AMERICUS DRIVE.
7. ALL STREETS ARE DESIGNATED AS PUBLIC AND AS SUCH ARE PUBLIC UTILITY, ACCESS AND DRAINAGE EASEMENTS.
8. ALL PUBLIC STREETS AND DRAINAGE STRUCTURES WITHIN THE RIGHTS-OF-WAY WILL BE MAINTAINED BY THE TOWN OF THOMPSON'S STATION.
9. OPEN SPACE AREAS, PUBLIC UTILITY AND DRAINAGE EASEMENTS (INCLUDING DRAINAGE AND DETENTION STRUCTURES), ALLEYS AND ALL LANDSCAPING WITHIN ROADWAY MEDIANS WILL BE MAINTAINED BY THE HOMEOWNERS' ASSOCIATION.
10. I HEREBY STATE THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE AND THIS IS A CATEGORY I SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS BETTER THAN 1:15,000.

BY John T. Darnall DATE: AUGUST 29, 2018  
 JOHN T. DARNALL, TN RLS #1571



(FUTURE DEVELOPMENT)  
 MAP 132, PARCEL 1.00  
**MBSC TN**  
**HOMEBUILDERS, LLC**  
 BOOK 5264, PAGE 242,  
 R.O.W.C.T.

**SURVEYOR**  
 RAGAN-SMITH ASSOCIATES, INC.  
 C/O TOM DARNALL, RLS  
 315 WOODLAND STREET  
 NASHVILLE, TENNESSEE 37206  
 (615) 244-8591  
 TDARNALL@RAGANSMITH.COM

**OWNER/DEVELOPER**  
 MBSC TN HOMEBUILDERS, LLC  
 C/O BRIAN ROWE  
 312 S. GAY STREET, SUITE 200  
 KNOXVILLE, TENNESSEE 37902  
 (865) 408-8322

(FUTURE DEVELOPMENT)  
 MAP 132, PARCEL 1.10  
**MBSC TN HOMEBUILDERS, LLC**  
 BOOK 6403, PAGE 542,  
 R.O.W.C.T.

TOLLGATE VILLAGE  
 SECTION 33  
 (LOTS 3301-3304)  
 AND REVISION TO  
 SECTION 20  
 (LOT 20.6)  
 PLAT BOOK P60, PAGE 86,  
 R.O.W.C.T.

**LEGEND**

○ IRON ROD (OLD)	—FM— FORCE MAIN
● IRON ROD (NEW)	[E] ELECTRIC BOX
● (5/8" X 18" W/CAP STAMPED "RAGAN SMITH & ASSOCIATES")	[FO] FIBER OPTIC BOX
⊙ FIRE HYDRANT	[SM] STORM MANHOLE
⊕ WATER VALVE	⊕ UTILITY STUBOUT
⊕ WATER METER	⊕ LIGHT STANDARD
⊕ CATCH BASIN/CURB INLET	⊕ YARD LIGHT
⊕ REINFORCED CONCRETE PIPE	⊕ SIGN
⊕ SANITARY SEWER MANHOLE	[123] STREET ADDRESS
—SA— SANITARY SEWER LINE	XXX LOT NUMBER
—G— GAS LINE	P.U.D.A.E. PUBLIC UTILITY, DRAINAGE AND ACCESS EASEMENT
—W— WATER LINE	R.O.W.C.T. REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TN

**LINE TABLE**

LINE	BEARING	DISTANCE
L1	N83°36'06"W	24.56'

**CURVE TABLE**

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHD BRG
C1	25.00'	37.76'	86°32'04"	23.53	34.27'	N40°20'18"W
C2	647.49'	27.59'	2°26'30"	13.80	27.59'	N01°35'08"E
C3	500.00'	117.73'	13°29'26"	59.14	117.46'	N06°22'50"W
C4	500.00'	7.67'	0°52'45"	3.84	7.67'	S00°04'29"E
C5	500.00'	55.03'	6°18'21"	27.54	55.00'	S03°40'02"E
C6	500.00'	55.03'	6°18'21"	27.54	55.00'	S09°58'22"E



**PROPERTY MAP REFERENCE**

(LOTS 3401, 3402 AND 3403)  
 BEING A PORTION OF PARCEL 1.10 AS SHOWN ON WILLIAMSON COUNTY PROPERTY MAP 132.

**DEED REFERENCE**

MAP 132, PARCEL 1.10 (LOTS 3401, 3402 AND 3403)  
 BEING A PORTION OF THE SAME PROPERTY CONVEYED TO MBSC TN HOMEBUILDERS, LLC FROM MBSC TN HOMEBUILDERS, LLC BY QUITCLAIM DEED OF RECORD IN BOOK 6403, PAGE 542, REGISTER'S OFFICE FOR WILLIAMSON COUNTY, TENNESSEE.

REVISED: AUGUST 29, 2018  
**TOLLGATE VILLAGE**  
**SECTION 18A**  
**(LOTS 3401-3403)**  
 FOURTH CIVIL DISTRICT OF WILLIAMSON COUNTY, TENNESSEE  
 JOB NO. 10081 W.O. 9260  
 DRAWN BY: AMR DATE: JULY 19, 2018

<p><b>CERTIFICATE OF APPROVAL OF MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION</b></p> <p>I DO HEREBY CERTIFY THAT THE REQUIREMENTS SET FORTH IN RULES, REGULATIONS, BY-LAWS, POLICY AND OPERATIONAL BULLETINS, PLAT APPROVAL CHECKLIST AND TREE PLANTING GUIDELINES HAVE BEEN MET FOR MTEMC. ANY APPROVAL IS AT ALL TIMES CONTINGENT UPON CONTINUING COMPLIANCE WITH THE AFOREMENTIONED REQUIREMENTS.</p> <p>DATE: 20__</p> <p>MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION</p>	<p><b>CERTIFICATE OF APPROVAL OF SUBDIVISION NAME AND STREET NAMES</b></p> <p>I DO HEREBY CERTIFY THAT THE SUBDIVISION NAME AND STREET NAMES DENOTED ON THIS FINAL PLAT HAVE BEEN APPROVED BY THE WILLIAMSON COUNTY DEPARTMENT OF EMERGENCY COMMUNICATIONS</p> <p>DATE: 20__</p> <p>WILLIAMSON COUNTY DEPARTMENT OF EMERGENCY COMMUNICATIONS</p>	<p><b>CERTIFICATE FOR ADDRESSES</b></p> <p>I DO HEREBY CERTIFY THAT THE ADDRESSES DENOTED ON THIS FINAL PLAT ARE THOSE ASSIGNED BY DEPARTMENT OF INFORMATION TECHNOLOGY (IT).</p> <p>DATE: 20__</p> <p>IT DEPT. TITLE</p>	<p><b>CERTIFICATE OF OWNERSHIP &amp; DEDICATION</b></p> <p>I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AS EVIDENCED IN BOOK 6403, PAGE 542, R.O.W.C.T., AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) FREE CONSENT, ESTABLISH THE MINIMUM BUILDING RESTRICTION LINE, AND THAT OFFERS OF IRREVOCABLE DEDICATION FOR ALL PUBLIC STREETS, UTILITIES AND OTHER FACILITIES HAVE BEEN FILED AS REQUIRED BY THESE REGULATIONS.</p> <p>DATE: 20__</p> <p>MBSC TN HOMEBUILDERS, LLC</p> <p>TITLE: _____</p>	<p><b>CERTIFICATE OF ACCURACY</b></p> <p>I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY TO THE ACCURACY REQUIRED BY THE THOMPSON'S STATION, TENNESSEE REGIONAL PLANNING COMMISSION AND THAT THE MONUMENTS HAVE BEEN OR WILL BE PLACED AS SHOWN HEREON, TO THE SPECIFICATIONS OF THE SUBDIVISION REGULATIONS, AS APPROVED BY THE TOWN ENGINEER. THIS IS A CATEGORY I SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS GREATER THAN 1:10000 AS SHOWN HEREON.</p> <p>DATE: 7-19, 2018</p> <p><u>John T. Darnall</u>          REGISTERED LAND SURVEYOR</p>	<p><b>CERTIFICATE OF APPROVAL OF UTILITY SYSTEMS</b></p> <p>I HEREBY CERTIFY THAT THE FOLLOWING UTILITY SYSTEMS OUTLINED OR INDICATED ON THE PLAN SHOWN HEREON HAVE BEEN INSTALLED IN ACCORDANCE WITH CURRENT LOCAL AND/OR STATE GOVERNMENT REQUIREMENTS OR THAT A SURETY BOND HAS BEEN POSTED WITH THE PLANNING COMMISSION TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT. ALSO, I CERTIFY THAT THE HYDRAULIC DESIGN CRITERIA SPECIFIED IN SECTION 3-106 OF THE THOMPSON'S STATION SUBDIVISION REGULATIONS HAVE BEEN MET.</p> <p>WATER SYSTEM: 20__</p> <p>DATE: _____</p> <p>SEWER SYSTEM: 20__</p> <p>DATE: _____</p> <p>HB&amp;TS UTILITY DISTRICT GENERAL MANAGER</p> <p>TOWN ADMINISTRATOR</p>	<p><b>CERTIFICATION OF THE APPROVAL OF STREETS</b></p> <p>I HEREBY CERTIFY: (1) THAT ALL STREETS DESIGNATED ON THIS FINAL SUBDIVISION PLAN HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO REGULATIONS FOR THOMPSON'S STATION, TENNESSEE, ROADWAY AND DRAINAGE REGULATIONS, OR (2) THAT A SURETY BOND HAS BEEN POSTED WITH THE PLANNING COMMISSION TO ASSURE COMPLETION TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.</p> <p>DATE: 20__</p> <p>TOWN ENGINEER</p>	<p><b>CERTIFICATE OF APPROVAL FOR RECORDING</b></p> <p>I HEREBY CERTIFY THAT THE SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THOMPSON'S STATION SUBDIVISION REGULATIONS WITH THE EXCEPTION OF SUCH VARIANCES, IF ANY, AS ARE NOTED IN THE MINUTES OF THE PLANNING COMMISSION AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE COUNTY REGISTER.</p> <p>DATE: 20__</p> <p>SECRETARY OF PLANNING COMMISSION</p>	<p><b>FINAL PLAT</b></p> <p><b>TOWN OF THOMPSON'S STATION PLANNING COMMISSION</b></p> <p>NET AREA: <u>0.72 AC. ±</u> TOTAL LOTS: <u>3</u></p> <p>ACRES NEW ROAD: <u>0</u> CIVIL DISTRICT: <u>4TH</u></p> <p>MILES NEW ROAD: <u>0</u> CLOSURE ERROR: <u>1:15000 ±</u></p> <p>OWNER: MBSC TN HOMEBUILDERS, LLC</p> <p>SURVEYOR: RAGAN - SMITH - ASSOCIATES, INC.</p> <p>SCALE: 1" = 50' 0 25' 50' 100'</p>
---	--	---	---	---	--	---	--	--



**Thompson's Station Planning Commission**  
**Item 4 - Staff Report – (File: Zone Amend 2018-006)**  
**September 25, 2018**  
**Land Development Ordinance Amendment**

**PROJECT DESCRIPTION**

Amendments to the garage standards (Section 4.10.c) within the Land Development Ordinance.

**ANALYSIS**

The Land Development Ordinance requires garages within new subdivisions to meet the following standards:

c. New single-family subdivisions shall have a two (2) car garage that meets the interior dimensions of 22 feet by 22 feet. This interior dimension shall be free and clear of permanent obstructions, such as water heaters, washer/dryer hook up areas, stairs, etc. Single lot site plans for the development of a single-family residence shall have a minimum of a two-car garage. All front-loaded garages shall be recessed from the front façade a minimum of 2 feet. Existing residential dwellings are exempt from this standard. Detached garages and carports shall be located toward the side or rear of the residence beyond the front wall plane of the residence. All driveways shall be a minimum of 20 feet in length, exclusive of sidewalks.

Staff received a complaint from a prospective resident about the size of a garage under construction. Upon review of the issue, Staff has noted that the some of the garages within the D3 zoning district do not meet the minimum interior dimension. Upon this observation, Staff started requiring additional information on the site plans to confirm the interior dimensions for the garages. Two builders have contacted Staff about the issue and have requested that Staff consider reducing or eliminating the garage standard related to the interior dimensions. Upon consideration, Staff has researched other codes and found that the City of Brentwood and Nolensville do not have a standard for the size of garages and the City of Franklin requires a 10 foot by 20 foot per vehicle, which would be 20 feet by 20 feet for a two car garage. Staff has also considered the size of the lots within the D3 zoning district which permits a lot width of 50 feet with a minimum of 7.5 feet for the side yard setbacks. Given this information Staff does not have a concern with reducing the standard to a 20 foot by 20 foot garage, however, does not recommend the elimination of the standard. In order to maximize the use of the garage, Staff also recommends that the language for the garage space to be free and clear of any obstructions be maintained in the code. Therefore, Staff recommends the revision of the section as follows:

c. All detached single-family structures shall have a two (2) car garage that meets the interior dimensions of 20 feet by 20 feet within the D3 zoning and 22 feet by 22 feet with the D2 and D3 districts. The interior dimension shall be free and clear of permanent obstructions, such as water heaters, washer/dryer hook up areas, stairs, etc. All front-loaded garages shall be recessed from the front façade a minimum of two feet. Existing residential dwellings are exempt from this standard. Detached garages and carports shall be located toward the side or rear of the residence beyond the front wall plane of the residence. All front-loaded driveways shall be a minimum of 20 feet in length, exclusive of sidewalks.

**RECOMMENDATION**

Staff recommends that the Planning Commission consider recommending the amendment as proposed to the Board of Mayor and Aldermen.