



CLARKSVILLE-MONTGOMERY COUNTY REGIONAL PLANNING COMMISSION

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MINUTES

Date: August 23, 2022

Time: 2:00 PM

Members Present

Richard Swift, Chairman
Thom Spigner, Vice Chairman
Bryce Powers
Wade Hadley
Larry Rocconi
Maria Jimenez
Stacey Streetman
Bill Kimbrough

Others Present

Jeff Tyndall, Director of Planning
John Spainhoward, Zoning Coordinator
Brad Parker, Subdivision Coordinator
Brent Clemmons, Design Review Coordinator
Angela Latta, Planning Tech
LaDonna Marshall, Office Manager
Daniel Morris, GIS Planner
Sarah Cook, Long Range Planner
Jackey Jones, Administrative Support
Chris Cowan/Joe Green/Jerome Henderson/ Ihab Habib, City Street Dept.
Ben Browder, Clarksville Gas & Water
Officers Norfleet and Mefford, Clarksville Police Department
Alex Morgan, County Highway Department
Jobe Moore, Clarksville Fire Department
Lance Baker, City of Clarksville Attorney

Mr. Swift called the meeting to order at 2:00 PM.

Pledge of Allegiance.

Mr. Swift stated a quorum was present.

Approval of Minutes

Mr. Swift asked for a motion for approval of the minutes from the July 26, 2022 meeting. Mr. Rocconi moved to recommend approval. The motion was seconded by Mrs. Streetman and carried unanimously.

Announcements/Deferrals

Mr. Tyndall announced the deferrals which include Z-16-2022 and Z-63-2022.

There being no more discussion. Mr. Rocconi recommended approval of deferrals. The motion was seconded by Mr. Spigner and carried unanimously.

Mr. Swift went over the procedure for addressing the Regional Planning Commission and the procedure for following cases through City/County Commission.

City Zoning Cases

CASE NUMBER Z-47-2022 Applicant: Jeffrey B. Long

REQUEST: R-1 Single-Family Residential District to R-2A Single-Family Residential District

LOCATION: Property fronting on the south frontage of Bellamy Ln., 1,200 +/- feet east of the Rossvie Rd. & Bellamy Ln. intersection.

TAX MAP:041 PARCELS: 173.00 ACREAGE: 0.39 +/-

REASON FOR REQUEST: This request is for R-6 for better utilization of the property.

Mr. Spainhoward read the case and gave the staff recommendations:

DISAPPROVAL

1. The proposed zoning request is inconsistent with the adopted Land Use Plan.
2. The R-2A Single Family Residential District is out of character with the surrounding development pattern.
3. The property is zoned correctly as R-1 Single Family Residential.
4. Adequate infrastructure will serve the site & no adverse environmental issues were identified relative to this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Jeffrey B. Long spoke in favor of the case stating that he wants to rezone to R-2A. He stated that this is the highest and best use. He stated that there is a shortage of housing in St. Bethlehem for low income housing.

Mrs. Streetman asked if it would be managed as low income.

Mr. Long stated that he misspoke and meant affordable housing not low income.

With there being no further discussion Mr. Rocconi made the motion for disapproval as the R-2A Single Family Residential District is out of character with the surrounding development pattern. Mrs. Streetman seconded. Mr. Powers opposed. All others were in favor. Motion for disapproval passed.

CASE NUMBER Z-60-2022 Applicant: Ann Rees

REQUEST: AG Agricultural District to R-5 Residential District

LOCATION: A tract of land fronting on the south frontage of Rossvie Rd., south of the Rossvie Rd. & Rollow Ln. intersection.

TAX MAP: 058 PARCEL: 003.01 ACREAGE :11.86 +/-

Reason for Request: None given.

Mr. Spainhoward read the case and gave the staff recommendations:

DISAPPROVAL

1. The proposed long-range potential of this property appears to be appropriate, however existing roadway infrastructure at Rossvie Road & Rollow Lane needs improvements prior to development of this property.
2. This proposed zone change should be delayed until the Rossvie Road & Rossvie Rd. & Rollow Lane intersection improvements are completed.
3. No adverse environmental issues were identified relative to this request.

Mr. Spainhoward stated that an email is included in packet for public comment.

Stanley Ross, representing applicant spoke in favor of the case stating that he understood the staff recommendation was for disapproval but he thought it concerned the road widening project that is going on out there. He stated that this is an appropriate zone for the growth plan and the traffic assessment has been accepted and approved. He further stated that he had spoken with the County Engineer who is the liaison with TDOT and has gotten some comments from him and the county engineer stated he is not supporting or opposing the rezoning and he has gone ahead and given us three or four major points that you need to make sure you look for as you develop because you may be ahead of the road widening, so we are looking into that. (correspondence attached) He stated that he also had a potential site plan and potential road widening project. (attached)

Mr. Powers asked the timeline of the development is as soon as possible or is there a timeline.

Mr. Ross stated they would probably be finished before the Rossvie Project is finished.

Cal Burchett spoke in favor of the case stating that the timing would probably be a two year at full build out project. He stated that the traffic assessment shows that we don't change the level of service on the two lane Rossvie Road and the access point will have the level of service A's & C's so acceptable there. He stated he would be happy to answer any questions.

There being no further discussion Mr. Spigner made the motion for approval based on this is a consistent zoning request and as it has been explained and shared with us that there will be site plan approvals, TDOT, TDEC coordination and county roads and Mr. Rocconi seconded. All others were in favor. Motion passed.

CASE NUMBER Z-61-2022 Applicant: Johnathan Blick

REQUEST: R-3 Three Family Residential District to R-6 Single-Family Residential District

LOCATION: A parcel fronting on the north frontage of Vine St., 675 +/- feet west of the Reynolds St. & Vine St. intersection.

TAX MAP: 066D PARCEL: D 023.00 ACREAGE: 0.20 +/-

Reason for Request: To provide a more affordable housing option. Current zoning would support one large home. \$300,000. Requested zoning could support 2-3 smaller homes \$150,000-\$200,000 price range.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The proposed R-6 Single Family Residential Zoning is not out of character with the surrounding development pattern & adequate infrastructure serves the site, including other residential-supportive uses such as, mass transit and retail services are in the area. The adopted Land Use Plan indicates that it is encouraged to maintain a desirable mixture of housing types.
3. No adverse environmental issues were identified relative to this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal public comments.

Johnathan Blick spoke in favor of the case stating they are requesting R-3 to R-6, two to three lots, hoping for 800-1,000 square foot home. He further stated he was available for any questions.

With there being no further discussion Mrs. Streetman made the motion for approval based on the proposed zoning request is consistent with the adopted Land Use Plan and is not out of character with the surrounding development pattern. Mrs. Jiminez seconded. All were in favor. Motion for approval passed.

CASE NUMBER Z-62-2022 Applicant: Maynard Family Co.

REQUEST: AG Agricultural District to R-2 Single-Family Residential District

LOCATION: A portion of property located north of Banister Dr. and bounded by the Little West Fork Creek on the north, east & west.

TAX MAP: 030 PARCEL: 011.00 ACREAGE: 14.33 +/-

Reason for Request: To make zoning same as rest of property and adjoining properties.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The proposed R-2 Single Family Residential Zoning request is an extension of the established R-2 Single Family Residential Subdivision development.
3. No adverse environmental issues were identified relative to this request & adequate infrastructure serves the site.

Mr. Spainhoward stated that as of 08/22/2022 there had been no formal public comments.

Jimmy Bagwell spoke in favor of the case stating he was available for any questions.

Mrs. Streetman stated for clarification that this company is not in any way connected with the company she works for.

There being no further discussion Mr. Powers made the motion for approval it is an extension of R-2 District. Mr. Spigner seconded. All others were in favor and motion for approval passed.

CASE NUMBER Z-64-2022 Applicant: Stabilize Real Estate LLC

REQUEST: RM-1 Single Family Mobile Home Residential District to R-4 Multiple-Family Residential District

LOCATION: Three parcels fronting on the west frontage of Batts Ln., 365 +/- feet north of the Batts Lan. & Columbia St. intersection.

TAX MAP:029L PARCELS: D 031.00, 032.00, 033.00 ACREAGE: 3.91 +/-

REASON FOR REQUEST: To allow for multifamily development.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The proposed R-4 Multi-Family Residential Zoning request is an extension of the existing R-4 Multi-Family Residential district.

3. The R-4 Multi-Family Residential Zoning request is not out of character with the development pattern in the area & the adopted Land Use Plan states that it is encouraged to have a desirable mixture of housing types in the community.
4. No adverse environmental issues were identified relative to this request & adequate infrastructure will serve the site.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Frank Stabile spoke in favor of the case stating there was adequate infrastructure and similar neighboring zoning.

With there being no further discussion Mr. Hadley made the motion for approval stating that is an extension of existing R-4. Mr. Spigner seconded. All were in favor and motion for approval passed.

CASE NUMBER Z-65-2022 Applicant: Richard Collins

REQUEST: C-5 Highway & Arterial Commercial District/ R-1 Single -Family Residential District to C-2 General Commercial District

LOCATION: Two parcels located at the northeast corner of the Dover Rd.& Kelsey Dr. intersection.

TAX MAP:054 G PARCEL: A 025.00, 025.06 ACREAGE: 2.36 +/-

REASON FOR REQUEST: To extend C-2 zoning.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The C-2 General Commercial District is an extension of the established C-2 district to the east.
3. Adequate infrastructure will serve the site & no adverse environmental issues have been identified as part of this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Mr. Spigner made the motion for approval stating that this is an extension of the established C-2 District to the east. Mr. Powers seconded. All others were in favor and motion passed.

CASE NUMBER Z-66-2022 Applicant: Ricky Reda

REQUEST: R-3 Three Family Residential District to R-6 Single-Family Residential District

LOCATION: Property fronting on the west frontage of Market St., 515 +/- feet north of the Market St. & Mitchell St. intersection.

TAX MAP:055H PARCEL: C 010.00 ACREAGE: 0.46 +/-

REASON FOR REQUEST: To build and improve location.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The proposed R-6 Single Family Residential Zoning is not out of character with the surrounding development pattern.
3. Adequate infrastructure serves the site. Including other residential-supportive uses such as, mass transit and retail services are in the area. The adopted Land Use Plan indicates that it is encouraged to maintain a desirable mixture of housing types. Sidewalks are required as [art of the R-6 Zoning Classification.
4. No adverse environmental issues have been identified as part of this request.

Mr. Spainhoward stated that as of 4:30 pm 08/22/2022 there had been no formal public comment.

Ricky Reda spoke in favor of the case stating that he was available for any questions.

Mr. Hadley made the motion for approval of the case stating that it is consistent with the Adopted Land Use Plan. Mrs. Jiminez seconded and all others were in favor. Motion for approval passed.

CASE NUMBER Z-67-2022 Applicant: Reda Home Builders

REQUEST: R-3 Three Family Residential District to R-6 Single-Family Residential District

LOCATION: Property fronting on the west frontage of Oak St.

TAX MAP:055 H PARCEL: J 008.00 ACREAGE: 0.55 +/-

REASON FOR REQUEST: To match surrounding zoning and for future building.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The proposed R-6 Single Family Residential Zoning is not out of character with the surrounding development pattern.
3. Adequate infrastructure will serve the site, including other residential-supportive uses such as, mass transit and retail services are in the area. The adopted Land Use Plan indicates that it is encouraged to maintain a desirable mixture of housing types. Sidewalks are required as part of the R-6 Zoning Classification.
4. No adverse environmental issues have been identified as part of this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Ricky Reda spoke in favor of the case stating he was asking for deferral because of an error. He stated he wanted R-4 instead of R-6.

Mr. Spigner made the motion for deferral. Mr. Rocconi seconded. All others were in favor and motion passed.

County Zoning Cases

CASE NUMBER CZ-16-2022 Applicant: Russell Allen

REQUEST: M-2 General Industrial District to AG Agricultural District

LOCATION: Property fronting on the north/east frontage of Marion Rd., 915 +/- feet south/east of the Marion Rd. & Conaster Rd. intersection.

TAX MAP: 150 PARCEL: 064.00 (p/o) ACREAGE: 10.0 +/-

Reason for Request: Returning zoning to AG to build a house.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. The request will permit the use of a single-family home on their property.
3. No adverse environmental issues have been identified as part of this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Russell Allen spoke in favor of the case stating he would like this for a single-family home.

With there being no further discussion Mr. Powers made the motion for approval stating since this gets rid of industrial zoning in an AG area. Mrs. Jiminez seconded. All others were in favor and motion for approval passed.

CASE NUMBER CZ-17-2022 Applicant: Tim Roby

REQUEST: M-2 General Industrial District to AG Agricultural District

LOCATION: A tract of land fronting on the north frontage of Cumberland City Rd., at the Montgomery County & Stewart County line.

TAX MAP: 096 PARCEL: 001.00 ACREAGE: 8.92 +/-

Reason for Request: House single family.

Mr. Spainhoward read the case and gave the staff recommendations:

APPROVAL

1. The proposed zoning request is consistent with the adopted Land Use Plan.
2. This request will permit the use of a single-family home on their property.
3. No adverse environmental issues have been identified as part of this request.

Mr. Spainhoward stated that as of 4:30 PM 08/22/2022 there have been no formal comments.

Tim Roby spoke in favor of the case stating he was seeking rezoning to build a single-family home.

With there being no further discussion Mr. Rocconi made the motion for approval stating that the zoning request is consistent with the Adopted Land Use Plan and Mrs. Streetman seconded. All others were in favor and motion passed.

SUBDIVISION CASES:

Mr. Parker read the consent agenda cases into the record. He stated that V-3-2022 and S-62-2022 were withdrawn. He stated that S-73-2022 will be deferred.

CASE NUMBER: S-74-2022 APPLICANT: VSRK Properties LLC

REQUEST: Preliminary Plat Approval of Tiny Town Commons & Travel Easement

LOCATION: South of and adjacent to Tiny Town Road, approximately 650 feet east of the Fort Sumter Drive and Tiny Town Road intersection.

MAP: 006 PARCEL: 047.02 ACREAGE: 7.18 +/- # OF LOTS:3+/- ZONING: R-4/C-5 GROWTH PLAN: CITY

STAFF RECOMMENDATION: PRELIMINARY PLAT APPROVAL SUBJECT TO THE CONDITIONS LISTED.

1. Approval by City Engineer's Office and the State Department of Environment and Conservation of all utility plans before construction of utilities begin.
2. Approval by the City Street Department of all road, drainage, grading. And erosion control plans before construction begins. No grading, excavating, stripping, filling, or other disturbance of the natural ground cover shall take place prior to approval of a grading, drainage, and erosion control plan.
3. Approval by the City Street Department of all driveway access locations to the public right-of-way before construction begins on site, as per City of Clarksville Driveway Access Ordinance.
4. Approval by the Tennessee Department of Transportation (TDOT) for a highway connection permit to SR 236.

Mr. Spigner made the motion for approval of consent agenda. Mrs. Streetman seconded. Mr. Rocconi abstained from case S-74-2022. All others were in favor and motion passed.

CASE NUMBER: S-47-2022 APPLICANT: Jack Miller, Jack Rudolph

REQUEST: Preliminary Plat Approval of Red River Ridge (Cluster)

LOCATION: North of Memorial Drive, south of the Red River, east of and adjacent to Little Barn Drive and Woodmeadow Drive.

MAP: 064 PARCEL: 020.00, 014.00 ACREAGE: 148 +/- # OF LOTS: 277 +/- ZONING: R-1 GROWTH PLAN: CITY

STAFF RECOMMENDATION: PRELIMINARY PLAT APPROVAL SUBJECT TO THE CONDITIONS LISTED.

1. Approval by City Engineer's Office and the State Department of Environment and Conservation of all utility plans before construction of utilities begins.
2. Approval by the City Street Department of all road, drainage, grading, and erosion control plans before construction begins. No grading, excavating, stripping, filling, or other disturbance of the natural ground cover shall take place prior to the approval of a grading, drainage, and erosion control plan.
3. Approval by the City Street Department of all driveway access locations to the public right-of-way before construction begins on site, as per City of Clarksville Driveway Access Ordinance.

Mr. Parker presented the case and stated the formal comments (emails) are included in Commissioners' packets.

Casey Keister spoke in favor of the case stating that the staff is recommending approval as they have for the past several months. He stated we worked diligently with the staff to present a preliminary plat that would have no variances, met the zoning requirements and be adequate and approved. He stated we have worked on the connectivity, having lots under the allowable access points, having the appropriate connections for utilities, all of that has led us to a plan that has zero variances and is in line with the city zoning and subdivision regulations. He stated they had done a traffic study and the proposed improvements will not only mitigate the traffic but will reduce some of the wait times at intersections mentioned in that traffic study. He stated we worked with Mr. Miller to obtain a construction traffic easement, following last month's meeting we put together a potential conceptual Master Plan that if Mr. Miller or Mr. Rudolph at some point down the road decide to sell their property. He stated he would be happy to answer any questions.

Chris Goodman spoke in favor of the case stating that the traffic assessment has been seen and reviewed by the City Street Department and they had no objection to it. He stated that all of the right-of-way improvements will be inside the existing right-of-way.

Mrs. Streetman asked, this is just for Memorial Drive and Pond Apple, correct?

Mr. Goodman stated yes, the update is.

Mr. Powers asked is this for Memorial Drive and Pond Apple, Stone Meadow and Warfield didn't change correct?

Mr. Goodman stated correct.

Mrs. Streetman asked if this was updated or it's exactly the same?

Mr. Goodman stated yes, it is updated.

Mrs. Streetman asked when was this one done?

Mr. Goodman stated this week.

Mr. Spigner stated he does not see how they vary from the first. He asked how this varies from the May 22nd report?

Mr. Goodman stated what really changes is the que number. The number of vehicles go down significantly.

Mr. Tyndall directed the Commissioners to page 26 of their packet, those are the improvements Mr. Goodman is talking about.

Mr. Spigner asked do you agree that on the westbound left turn off of Warfield and Stone Meadow that it would go from a LOS D to LOS F?

Mr. Goodman said, for the left turn lanes, yes.

Mr. Powers stated that on Pond Apple Road it will go from an E to an F as well correct?

Mr. Goodman stated it actually goes from F to E. After looking at the information he stated south bound left turn lane would be F.

Mr. Powers stated that at least two go from higher class to a failing class.

Mr. Goodman stated yes, on the left turn lanes.

Sean Henry, attorney for Meritage Homes, spoke in favor of the case stating that at the last meeting he was here and he heard the Commission asking about a Master Plan to demonstrate how the remainder of the property, which is south of the subdivision down to Memorial Drive, how that would develop. He stated you now have that in front of you, the zoning section 5.9.2. B was cited and suggested at the last meeting that it was not compliant but we submit that it is compliant. He stated importantly my client is not under contract to purchase that property, they are not acquiring any of that land. He stated for clarity the traffic assessment that you were referring to, the level of service stays the same or improves. The important thing is the number of vehicles in que, south bound turning LOS F, there are 21 vehicles there today that stack up, that goes down to 7 vehicles in southbound left turn, 1 vehicle in southbound right turn with the improvements my client is going to make to those intersections. He stated that the General Assembly for Tennessee made effective July 1, 2022 a new law that applies to subdivision review and it essentially adopting and citing the Phillips versus Montgomery County case from 2014 where the Planning Commission disapproved a subdivision of a fifteen acre property because of potential future extension of State Route 374, that went all the way to the State Supreme Court and the question was is it legal for you to deny my subdivision and not pay me for the devaluation of the land. Tennessee Supreme Court said that kind of decision qualifies for an analysis whether or not the government has wrongly taken your property and whether they should pay you for it now. He stated the important thing is my client doesn't control that land down to Memorial Drive, a denial of this application or condition that that additional land be acquired would mean somebody's got to pay for that. He stated in conclusion, and this is the test, there is no essential nexus and no rough proportionality between a direct connection dedication and the impact that this Red River Subdivision has on adjacent streets so there is no legitimate local government interest in requiring a direct connection, and that's the legal test.

Mrs. Streetman stated she wanted to clarify something you (Mr. Henry) said, you made the comment that as it stands right now there is a twenty-one vehicle stack up, according to what we have here this is the total projected peak hour levels of service so I don't think that's quite the correct statement.

Mr. Henry stated with the existing lanes unimproved, if the subdivision is approved and there's no off-site roadway improvements you would have twenty-one vehicles stacked up there.

Mrs. Streetman said to clarify, you made the comment that your client doesn't own the other property, they don't of course own this property either but they don't own property currently at the intersection of Memorial Drive and Pond Apple Road or Stone Meadow and Warfield correct.

Mr. Henry stated that is correct. He further stated there is sufficient right- of- way out there to make all of these roadway improvements there is no need to condemn or go through an eminent domain process.

Mr. Powers stated that when he looks at the level of service you're correct that projected traffic with improvements versus no improvements it is an improvement but if you look at existing peak hour flows everything is still a decrease in level of service to be clear.

Mr. Henry stated that the level of service meets your standard and that is what is important. It meets your standard for review there are no variances requested, there is off site improvements being made to accommodate this subdivision which does not require anything other than those intersections we talked about and no improvement to Memorial Drive. He further stated he understood that TDOT may be pursuing a widening of the road as well.

Mrs. Streetman stated referencing that, the widening of the road, I'm only seeing in this exhibit that its only widened to three lanes for one hundred feet. She stated then that would be shortened considerably possibly depending on how much TDOT took for the widening correct.

Mr. Henry stated that is why we are at preliminary stage.

Mrs. Streetman stated then we are at the same preliminary the other way correct.

Mr. Henry stated I only understand that TDOT is doing some things out there and the important thing is that this preliminary plat meets your regulations, the final plat comes back to you which will have to demonstrate all engineering analysis and construction items are satisfied met including close coordination with TDOT.

Jeff Bibb spoke in opposition of the case stating he was representing the Rudolphtown Homeowners Association Board of Directors. He stated Rudolphtown road network will not support two access points to the thoroughfares of Warfield and Memorial. He stated they are not opposed to the Red River Ridge development, we have a problem with the access points. He stated we strongly believe the proposed vehicular ingress and egress regarding Red River Ridge is not an acceptable or approvable by Clarksville Montgomery County subdivision regulations. This belief is based on engineering calculations pertaining to existing Rudolphtown street grades, line of sight stopping deficiencies, and failed intersection safety particularly at Stone Meadow Road.

Cal McKay spoke in opposition of the case stating he was here on behalf of neighbors. He stated he believed ya'll (Commission) have picked up on some of it at Pond Apple but mostly he wanted to talk

about the Stone Meadow, Warfield, Springlot Road. He stated that the existing conditions at Warfield and Stone Meadow are currently A.M. level of service D, P.M. level of service C. He further stated that they have the projection without improvements and they are level of service F with an asterisk, both A.M. and P.M. and with their proposed lane modifications nothing changes it is still level of service F with an asterisk and if you go down further the asterisk says with significant average vehicle delays and he wrote the word "infeasible" but its not my word, from the next page and read the last line of said report which read, "However, the average vehicle delays for the westbound left turns will be sufficiently high to consider these turning movements infeasible."(attached). He stated that what the plan is we have an intersection at Stone Meadow and Warfield that functions and by adding this even with the lane modifications you are making this turning movement in this intersection infeasible and that right there in itself is reason for disapproval. He stated that on the last page there are conclusions and recommendations adding a hundred-foot storage lane but on the previous page it states it does not do anything to change the level of service. He stated moving forward if they are going to do any widening or improvements it has to be according to ASHTO standards and standards established by the City of Clarksville. He stated that there are road profiles that do not meet subdivision regs which are pointed out on the handout (attached). He stated there are a number of deficiencies with the current road network shown on same handout.

Rosemary Calcese spoke in opposition of the case stating she represents what we call the citizens of Rudolphtown. She stated that the Rudolphtown citizens are not opposed to development or growth, they are actually excited about growth. She stated that no variance required has been brought up a lot, that the variance is not the problem, public safety is the concern of our citizens of this town. She stated the stub streets were not meant for 3-4 vehicle households. She spoke to the matter of right-of-way stating that there has been no fleshing out of this and only assumptions made at this point. She stated that there is a common law in the State of Tennessee that a city can deny a subdivision if there is a safety or traffic issue that is set forth by the improvement.

Mr. Henry spoke in rebuttal stating there is nothing new here just merely a clarification that the right-of-way is adequate to accommodate the improvements and the recommended laneage improvement will mitigate the improvements of the traffic generated by the proposed project at the intersection of Memorial Drive and Pond Apple Road. He stated he wanted to submit for the record the 1987 Pond Apple Road subdivision plat that was approved by this commission, if the roads in that subdivision are unsafe I would say it is because this Planning Commission approved, that they be built, that is irrelevant to your consideration of a subdivision next door that is merely tapping into the roadway network that was approved by this Planning Commission. He stated respectfully, Mr. McKay is a civil engineer not a traffic engineer, we have a traffic engineer who is reporting to you on the safety and the necessary upgrades to the roadway improvements out there to accommodate this subdivision, that's a high bar and a high level of expertise.

The Chairman called the Commission back into regular session.

Mrs. Streetman made the motion for disapproval based on the traffic engineers exact words that were submitted that the vehicle delays for the westbound left turns will be sufficiently high to consider these turning movements infeasible and it reducing both especially at Stonemeadow Road and Warfield, reducing their grades to failing grades and that would be in direct conflict with a subdivision regulations section 4.1 2 3 which states the arrangement of streets, roads or permanent easements shall

be such as will not cause hardship to owners of adjoining property and providing convenient access, directly from the subdivision regulations. Mr. Powers seconded, Mrs. Streetman, Mr. Powers and Mr. Spigner voted for disapproval. Mr. Hadley abstained as did Mrs. Jimenez, Mr. Rocconi voted nay. Motion for disapproval passed.

CASE NUMBER: S-48-2022 APPLICANT: Thomas N. Bateman

REQUEST: Preliminary Plat Approval of Thomas N. Bateman Property

LOCATION: South of and adjacent to Oakland Road west of and adjacent to US Hwy 79, north of Cracker Barrel Drive.

MAP: 033 PARCEL: 003.01 ACREAGE: 32.7 +/- # OF LOTS: 17 +/- ZONING: C-4 GROWTH PLAN: UGB/CITY

STAFF RECOMMENDATION: PRELIMINARY PLAT APPROVAL SUBJECT TO THE CONDITIONS LISTED:

1. Approval by the City Engineer's Office and the State Department of Environment and Conservation of all utility plans before construction of utilities begins.
2. Approval by the City Street Department of all road, drainage, grading, and erosion control plans before construction begins. No grading, excavating, stripping, filling, or other disturbance of the natural ground cover shall take place prior to the approval of a grading, drainage, and erosion control plan.
3. Approval by the City Street Department of all driveway access locations to the public right-of-way before construction begins on site, as per City of Clarksville Driveway Access Ordinance.
4. Approval by the Tennessee Department of Transportation (TDOT) for a highway connection permit to US Highway 79/SR 13.
5. Approval by the County Highway Department of road and drainage plans, for drainage structures within the proposed rights-of-way, before construction begins on site.
6. Approval by the County Building and Codes Department of all drainage, grading, water quality and erosion control plans. No grading, excavating, stripping, filling or other disturbance of the natural ground cover shall take place prior to the issuance of a grading and/or water quality permit
7. The portion of the property in the county only must either be annexed into the City of Clarksville, or the lot configuration adjusted so that building sites and lots are not located within more than one jurisdiction.

Mr. Parker presented the case. He stated that there was a revised preliminary plat submitted Friday during the informal meeting which added a private easement to connect with Oakland Road. He stated that following discussion with Commission, the staff tried to meet with the applicant and engineer to discuss a public roadway connection from Cracker Barrell Drive to Oakland Road, an available meeting time could not be scheduled so the staff urged the applicant to defer the case for 30 days. He further stated the applicant did want to have the public hearing. He stated there are several sections of the subdivision regulations that do not meet minimum requirements and no variances have been requested therefore the planning commission staff recommends disapproval. He stated that the City Fire Department, City Street Department and County Highway department made comments stating that there should be connectivity (connection to Oakland Road). See attached disapproval due to the following.

Vernon Weakley spoke in favor of the case stating in their initial submission they had two cul de sacs and that is what brought on the first comments of connectivity and we deferred because of that, Mr.

Bateman conceded to hook them together and make them a loop road. He stated this also caused us to not have any variances. He stated looking at this model we had taken care of all subdivision regulations but they (staff) said we had to have a traffic study. He stated the regulations state traffic flow in the subdivision so we looked at the traffic flow in the subdivision, the light at Cracker Barrell and the one where the fireworks stand is at certain times of the year, he stated the one where fireworks stand is has already been approved by TDOT and we found that the one at Cracker Barrell obviously already works. He stated that the one at the fireworks stand has a level of service D so even with all the traffic out there and the new traffic added it would still be a level of service D. He stated that with the traffic study they met condition 4 and that we passed that test but we still weren't meeting all the requirements set by your staff so we deferred a second month. He stated we got back with Mr. Bateman and he relinquished that we would do a travel easement out to Oakland Road which seemed to be the last step we needed to get the blessings and yes there are a lot of requirements with these easements, an easement does not have a right-of-way width but it will be built by the city roads standards, these are things that will be established during construction plans. He stated they thought we have it done but lo and behold a new requirement, a stub to the Kennedy property. He stated that they (staff) could require a stub anywhere they want but a block length is 1,500 feet and less than 500 feet away the Kennedy property has a connection to Oakland Road so they (staff) are requiring us to go way below the block length for an additional stub, he stated that was above and beyond in his opinion. He stated that there were 19 things we had to get done, we have done all but first two (road stub to Oakland and road stub to Kennedy property) the road stub to Oakland is taken care of by the travel easement and we are asking because block length is not being violated that we are not required to stub to the Kennedy property. He stated he was available for any questions.

Mr. Powers asked that on the comment that staff has made that the private easement or permanent access easement with 50-foot easement and 28 foot of pavement are ya'll ok with that. He stated he does not have a problem with there not being a stub to the Kennedy property.

Mr. Weakley stated there are two things, permanent access easement or a travel easement, a travel easement specifies that it be 24 foot in width and so we will probably call it a travel easement with their rules and it does not require the setbacks and all that stuff. He stated what happened is we've got down to a crunch time when everybody is busy and we haven't had time and we haven't received any of these comments you are looking at from them (staff) and we wouldn't have had time to address them, we have the two big things.

Mr. Spigner asked the travel easement does not have a right-of-way.

Mr. Weakley stated you can have an easement width but you don't have a right-of-way and the road is going to be built according to city standards.

Mr. Powers asked how will you handle the driveways to Oakland Road.

Mr. Weakley stated that we had two shared driveways and a third but that got rescinded from us from the county to one so we are going to do one and hook two, three and four together and five has its own access back down to Cracker Barrell Drive.

Mr. Spigner asked what are his comments on access two, three and four being on the front and not in the rear.

Mr. Weakley stated he's not sure where they came from.

Mr. Tyndall stated he believed that comment was from the County Highway Department, that would have to do with throat length going out to Oakland Road, you would be emptying three C-4 parcels into one area that's much less than 55 feet from the road so there are conflicting turning motions out of that drive.

Thomas Bateman spoke in favor of the case stating our concern is that to build this road from Cracker Barrell Drive to Oakland Road is going to cost us land and money, somewhere around two or three million dollars. He stated I know you don't have to be concerned about that but we do. He stated they looked to why the road was being asked for and said he was going to tell you a story. He stated that shortly after this application for preliminary approval of this subdivision he received a call from Mr. Tyndall and he asked me to come to his office and I did and I had a little trepidation because my engineer wasn't invited. He stated and when I got there this was the substance that I was told about our application, that that land that was in the county needed to be brought into the city, that zoning needed to be changed from C-4 to C-5, that the lots were too big and we had too many motels in Montgomery County. He further stated that then he (Mr. Tyndall) told me we needed a road from Cracker Barrell Drive to Oakland Road, I said why, Mr. Tyndall told me that if there was an accident out on Guthrie Highway and the ambulance couldn't get up Oakland Road he needed to be able to go up Cracker Barrell Drive and over to Oakland Road and I think that's commendable except that's a community project and not our project. He stated that he wanted to adopt by reference what the other lawyer had stated earlier about the code stating that when you make a landowner build a road that is not sanctioned now by this code that went into effect on July 1, 2022 and it says in essence it must be a legitimate local government interest and the dedication must be proportional in nature and extent to the impact of the proposed use or development of the property. He stated this road is nothing more and nothing less than an alternate for Oakland Road and we should not have to bear that. He stated that the rule says that collector streets or permanent easements may be required where necessary to facilitate traffic flow in the subdivision. He stated in closing that he would appreciate if you (Commission) would take these two requirements out of here, we are happy with all the rest of them. I hope that you all will give us a deal.

Mr. Tyndall stated that he would like to address a couple of comments since they were brought up verbatim in my name. He stated that the meeting Mr. Bateman and I had was not recorded or written down. He stated this is a project we have been chasing for three months, we ask for this, we get that, we rereview it, there are new issues, we send it back we get something new, not quite what we wanted and that's where we are today. He stated unfortunately the Planning Commission is up against our 60 days or I would recommend deferral but if we did it would automatically be approved. He stated as shown today it is not something that myself, street department, highway department, or fire department is comfortable with. He stated that on an earlier subdivision we had today where you had both the street department and fire department ok with that subdivision, this one is where you have all three entities against it. He stated he did not tell Mr. Bateman he had to annex his property, as you can see the county/city line bisects lots 12, 13, 11, 10, 9, 6 and 8 and I informed him that getting site plan approval and building permits would be difficult if they were not all in the city or county and annexing them now not later would be the operable thing to do there, I cannot make someone annex, I was offering him advice going forward. He further stated we provided him a copy of the use matrix for C-4 and C-5 and implied that the lots on Oakland Road may be better as C-5 lots because there are several uses in C-5 that are beneficial to the community that C-4 does not allow. He stated that we did meet

with Mr. Bateman first which is a little atypical, we wanted to get his feelings prior to the engineer which we did meet with the day after. He further stated he has provided a sketch up that is possibly more amenable to the street department, highway department and possibly the applicant that provides a public right-of-way from Oakland Road to Cracker Barrell Drive but then the travel easement or public easement becomes the stub over to Guthrie Highway which actually lessens the amount of infrastructure that the applicant would have to put in. He stated he is not comfortable providing an easement, travel or public dedicated easement in lieu of public right-of-way because of setbacks, maybe that's something we need to go adjust the code for but I'm not comfortable providing large lots of connectivity through an easement that's maintained privately. We are recommending disapproval and if the applicant would request deferral I have no doubt we could work out something in the coming months that is amenable to everybody including the fire department, the street department and the applicant.

Mr. Rocconi asked what could be adjusted on a final plat going forward if we approve the preliminary.

Mr. Spigner asked of Mr. Weakley you stated it doesn't accomplish anything different (the sketch up) then why are you opposed.

Mr. Weakley stated yes, it has to do with the timing of when it gets built and it would affect the whole concept and lay out of what we are after out there and Mr. Bateman has been opposed to that. We are trying to keep it where the motels each have their own way in and out.

Mr. Rocconi stated that this case he believes, has the exact same issues as the case before.

Mr. Tyndall stated that unlike the previous case they are asking us to look at the entire property at this time.

Mr. Tyndall stated that what you are seeing before you today, if you don't recommend any conditions or changes to it, is what you are approving so if you are approving that private access easement adjacent to Oakland Road that close to the road that's what you are approving, not something we can work out later. He stated that however, if you condition that based on working with the street department or the highway department it would allow them to work that out.

Mr. Powers asked what standard conditions do we state if we approve without the stub road and public connection to Oakland.

Mr. Powers made the motion for approval stating incorporating by reference the conditions Mr. Parker read (above) also to include that it's a travel easement going to Oakland Road, this does not include a stub to the Kennedy property or a public extension to Oakland Road. Mr. Rocconi seconded. All others were in favor and motion for approval passed.

SITE REVIEW CASES:

Mrs. Russell read the consent agenda cases into the record.

CASE NUMBER: SR-38-2022 APPLICANT: Singletary Construction LLC Agent: Britt Little
DEVELOPMENT: Lots 14 & 15 Professional Park Commons PROPOSED USE: Multifamily
LOCATION: Professional Park Drive MAP: 040G A 014.00, 015.00 ACREAGE: 4.42 +/-

STAFF RECOMMENDATION: APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS

1. Approval of all utility plans by the Office of the Chief Utility Engineer.
2. Minor plat approval.
3. Site and landscape plans must be recorded before Final PUD approval.

Note: Per Z-31-2022 PUD Requirements

CASE NUMBER: SR-39-2022 APPLICANT: CW Partners Jim Cherry AGENT: Britt Little

DEVELOPMENT: Madison Mercantile PROPOSED USE: Multifamily

LOCATION: 1460 Madison Street MAP: 065P, G 003.00, 009.00, 024.00 ACREAGE: 2.09 +/-

STAFF RECOMMENDATION: APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS

1. Approval of all utility plans by the Office of the Chief Utility Engineer.
2. Approval of all grading, drainage and water quality plans by the City Street Department.
3. Minor plat completed.
4. Approval of a landscape plan.
5. Approval from the CDRB.

CASE NUMBER: AB-4-2022 APPLICANT: Habitat for Humanity Herb Baggett AGENT: Syd Hedrick
DEVELOPMENT: Habitat for Humanity PROPOSED USE: Abandonment
LOCATION: East of Cumberland Drive, west of Elder Street: Unimproved E. Union Street right-of-way.
MAP: S of 66K, F 033.00 & North of 66K, G 016.00 & 030.00 ACREAGE: 0.265 +/-

STAFF RECOMMENDATION: APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS

1. Retention of an easement for public utilities

CASE NUMBER: AB-5-2022 APPLICANT: Joshua Taylor/Kenneth Garland AGENT: Montgomery County Highway Department

DEVELOPMENT: Hogan Road PROPOSED USE: Abandonment

LOCATION: Portion of Hogan Road. MAP: Northeast of 089,072.00, southwest of 089, 071.01 ACREAGE: 0.28 +/-

STAFF RECOMMENDATION: APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS

1. Retention of an easement for storm water and surface drainage.

With there being no further discussion Mr. Rocconi made the motion to approve the case. Mr. Spigner seconded and all were in favor. Motion passed.

CASE NUMBER: SR-40-2022 APPLICANT: Bill Mace AGENT: Matt Suiter
DEVELOPMENT: The Villas at Polly Drive PROPOSED USE: Multi-family
LOCATION: 3385 Polly Drive MAP: 066J, C 006.00, 008.00 ACREAGE: 5.15 +/-

STAFF RECOMMENDATION: APPROVAL SUBJECT TO THE FOLLOWING CONDITIONS

1. Approval of all utility plans by the Office of the Chief Utility Engineer.
2. Approval of all grading, drainage and water quality plans by the City Street Department.
3. Subdivision replat completed.
4. Approval of landscape plan.

Mrs. Russell presented the case.

Steven West spoke in opposition of the case stating that he has no problem with the development he is only concerned about 4-wheel drive cutting through property, dumpsters a problem with trash around everywhere, do not want damage to our property or playground. We ask for a fence to buffer our property.

Mr. Spigner made the motion to approve the case with the added condition of a privacy fence on the west side of property. Mr. Rocconi seconded and all others were in favor and motion passed.

OTHER BUSINESS:

A. MONTHLY PROFIT AND LOSS STATEMENT

Mr. Hadley made the motion to approve with Mr. Rocconi second. All were in favor. Motion passed.

B. ADOPT RPC PAY STUDY AND PAY SCALE

Mr. Tyndall stated the pay study is deferred.

C. ROAD NAME CHANGE

Request for a road name change from Claridge Drive to Clay Ridge Drive.

Mr. Rocconi made the motion to approve with Mr. Spigner seconded. All others were in favor. Motion passed.

Mr. Tyndall stated that this is Mr. Rocconi's final meeting and presented him with a parting gift. He stated that it has been a joy working with him and appreciated his service.

Mr. Rocconi stated that he has enjoyed his time and he appreciated all the time and effort that the staff puts into everything.

The meeting was adjourned at 4:34 PM

ATTEST:



Chairman

From: [Cal Burchett](#)
To: [Nick B. Powell](#)
Cc: [Stanley Ross](#); [Jeffrey Tyndall](#); [John Spainhoward](#)
Subject: RE: 1736 Hankook Rd- Rees Property Rezone
Date: Wednesday, August 17, 2022 3:04:00 PM
Attachments: [image001.png](#)

Thank you Nick. I have a few responses below as most of these pertain to site plan and developments plans. We can work with you if the zoning is approved and we move forward. But overall it sounds like you have no major concerns with the rezoning at this point. We appreciate the feedback and will be in touch if the project moves forward

Jeff/ John, please let me know if you need anything else from me or have any additional questions

Thank you,

Cal Burchett, PE, RLS



1545 Madison Street
Clarksville, TN 37040
Office: 931.245.3095
Cell: 931.249.6894
cburchett@mbcengineer.com
www.mbcengineer.com

From: Nick B. Powell <nbpowell@mcgtn.net>
Sent: Wednesday, August 17, 2022 2:45 PM
To: Cal Burchett <cburchett@mbcengineer.com>
Cc: Stanley Ross <stanley@clarksvillem.net>; Jeffrey Tyndall <jeffrey.tyndall@cityofclarksville.com>; John Spainhoward <john.spainhoward@cityofclarksville.com>
Subject: RE: 1736 Hankook Rd- Rees Property Rezone

Cal,

A few comments that I would like for you to keep in mind as you move into the full plan development phase of your plans. This is to make both of our construction phases end with a better result. You are going to reach construction long before we will, so everything you do will likely impact what we might have to change on our plans, or in the construction phase.

If you can design your entrance drive such that you are accounting for the 10' sidewalk that will be incorporated on the South side of Rossvie, that will prevent us from having to reconstruct your entrance and extending our impacts well into your developed site due to any vertical offsets from the proposed sidewalk limits. We will have to make all sidewalk connections to driveways ADA compliant, so vertical elevations will be important to match to the proposed roadway elevation. Be sure that your turn lane is of a proper length that we do not have to extend the widened driveway section further into your development when our project begins. **I am confident we can keep that area very flat and accommodate future sidewalks**

- If you construct the curb radii on your entrance as you show, then an extension will also be needed temporarily while we are awaiting the construction phase of Rossvie to occur. A drainage culvert might be needed until our sidewalk and C&G systems are installed. **Yes, there would be a temporary condition as we await the widening. However, we could work with you to make the end result as smooth as possible**
- There are likely going to be some utility adjustments outside of our proposed ROW that are not shown on anything yet. You have some room set aside with the 50' MBSB, so that should be adequate.
- Have you considered an entrance drive parallel with the Rollow Lane intersection? We plan to add a traffic signal there, and you would be able to add a 4th leg to that signal for improved accessibility. The short term impact of that alignment might be complex with sight distances until the hillside is trimmed down on our new horizontal and vertical alignment. Long term it might be better for this development, but I'm not pushing that concept. **It does not appear property lines would allow us another access at this time.**
- Your proposed property line on the North east corner is pushing into the proposed ROW development of the sidewalk, but I know this is probably just schematic at this point. **Yes just schematic**
- Preserving the land necessary for the roadway, sidewalks, and utilities is the most critical thing that I can point out, and it appears that you are taking those things into account.

NICHOLAS B. POWELL, P.E.

Chief County Engineer
Montgomery County Engineering
1 Millennium Plaza, Suite 401
Clarksville, TN 37040
Office: 931-553-5113
nbpowell@mcgtn.net

From: Cal Burchett <cburchett@mbcengineer.com>
Sent: Tuesday, August 16, 2022 3:08 PM
To: Nick B. Powell <nbpowell@mcgtn.net>
Cc: Stanley Ross <stanley@clarksvilleglaw.net>; Jeffrey Tyndall <jeffrey.tyndall@cityofclarksville.com>; John Spainhoward <john.spainhoward@cityofclarksville.com>
Subject: RE: 1736 Hankook Rd- Rees Property Rezone

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Nick,

We have not made it to formal grading plans. I have attached a rough draft of a grading plan. I transposed the proposed centerline elevations from the plans your provided in blue. It appears we are tying in near station 131+00 and there is approximately 2' of fill from existing grade there. I am confident we can match proposed grades and stay out of the slope easements. We can work with you as both projects move forward. I hope this helps. Let me know if you have any more questions or need something more formal.

Thank you,

Cal Burchett, PE, RLS



1545 Madison Street

Clarksville, TN 37040

Office: 931.245.3095

Cell: 931.249.6894

cburchett@mbcengineer.com

www.mbcengineer.com

From: Nick B. Powell <nbpowell@mcgtn.net>

Sent: Tuesday, August 16, 2022 2:01 PM

To: Cal Burchett <cburchett@mbcengineer.com>

Cc: Stanley Ross <stanley@clarksvillelaw.net>; Jeffrey Tyndall

<jeffrey.tyndall@cityofclarksville.com>; John Spainhoward

<john.spainhoward@cityofclarksville.com>

Subject: RE: 1736 Hankook Rd- Rees Property Rezone

Cal,

Can you provide me with a proposed grading plan to review along with this layout sheet, or have you made it to that point of plan development? I would like to see how your proposed grading will interact with the proposed slope easement lines of the roadway widening, before I provide a response.

NICHOLAS B. POWELL, P.E.

Chief County Engineer
Montgomery County Engineering
1 Millennium Plaza, Suite 401
Clarksville, TN 37040
Office: 931-553-5113
nbpowell@mcgtn.net

From: Cal Burchett <cburchett@mbcengineer.com>
Sent: Tuesday, August 16, 2022 10:49 AM
To: Nick B. Powell <nbpowell@mcgtn.net>
Cc: Stanley Ross <stanley@clarksvillelaw.net>; Jeffrey Tyndall <jeffrey.tyndall@cityofclarksville.com>; John Spainhoward <john.spainhoward@cityofclarksville.com>
Subject: 1736 Hankook Rd- Rees Property Rezone

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Nick,

Good morning. I heard in the RPC staff meeting this morning that the staff wanted to coordinate with you on this rezoning for any further comments. I have attached your original email and some additional information we have provided to the planning commission staff for the rezoning. We have placed the plans you provided on our layout and can easily accommodate the widening, right-of-way, and slope easements necessary for the widening. I know access was mentioned in your first email and we have planned to access on the western portion of the property. I have attached the traffic assessment. The sight distance is shown on page 18 of the PDF. As you can see, the sight distance can be met from the proposed location with the existing Rossvie Road configuration. The location meets the city access ordinance, and any improvements to Rossvie Road will only make the access better. Further, we have reviewed the preliminary roadway plans for location and elevation and will easily be able to accommodate the widening and sight distance will be improved.

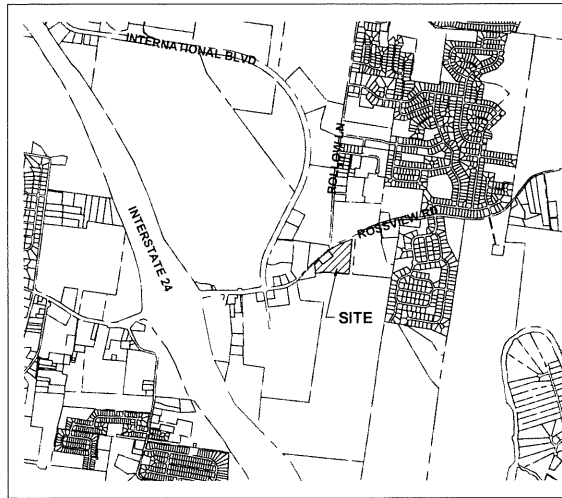
Please let me and the planning staff know if you have any additional questions or concerns.

Thank you,

Cal Burchett, PE, RLS



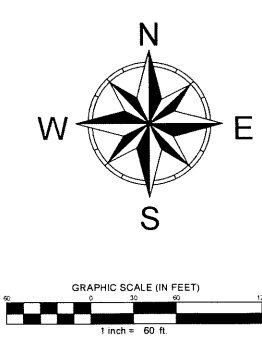
**1545 Madison Street
Clarksville, TN 37040
Office: 931.245.3095
Cell: 931.249.6894**



VICINITY MAP
(NOT TO SCALE)

SITE LEGEND

- | | | | |
|-------|--------------------------------|-----|----------------------|
| --- | LOT LINE | --- | BOUNDARY LINE |
| --- | PROPERTY LINE | --- | BOUNDARY LINE |
| --- | BOUNDARY LINE | --- | BOUNDARY LINE |
| --- | TREE LINE | --- | TREE LINE |
| --- | ROADWAY CENTERLINE | --- | ROADWAY CENTERLINE |
| G | GAS MAIN & SERVICE LINE | --- | UNDERGROUND ELECTRIC |
| UE | UNDERGROUND ELECTRIC | --- | UNDERGROUND ELECTRIC |
| W | WATER MAIN & SERVICE LINE | --- | UNDERGROUND ELECTRIC |
| SA | SANITARY SEWER MAIN & SERVICE | --- | UNDERGROUND ELECTRIC |
| --- | STORM SEWER LINE | --- | UNDERGROUND ELECTRIC |
| P | OVERHEAD POWER LINE | --- | UNDERGROUND ELECTRIC |
| E | UNDERGROUND ELECTRIC | --- | UNDERGROUND ELECTRIC |
| --- | PUDE | --- | UNDERGROUND ELECTRIC |
| --- | MBSL | --- | UNDERGROUND ELECTRIC |
| X | FENCELINE | --- | UNDERGROUND ELECTRIC |
| --- | STREAM LINE | --- | UNDERGROUND ELECTRIC |
| SF | SILT FENCE | --- | UNDERGROUND ELECTRIC |
| --- | EXISTING CURB | --- | UNDERGROUND ELECTRIC |
| T | UNDERGROUND TELEPHONE | --- | UNDERGROUND ELECTRIC |
| --- | PROPOSED WATER MAIN (SIZE TBD) | --- | UNDERGROUND ELECTRIC |
| ---SA | PROPOSED SANITARY SEWER | --- | UNDERGROUND ELECTRIC |
-
- | | | | |
|---|------------------------|---|------------------------|
| ● | EXISTING IRON PIN | ⊕ | BENCHMARK |
| ○ | PROPOSED IRON PIN | ⊕ | WATER VALVE |
| * | STREET LIGHT | ⊕ | WATER METER |
| ⊕ | UTILITY POLE | ⊕ | FIRE HYDRANT |
| ⊕ | POWER POLE | ⊕ | ELECTRICAL TRANSFORMER |
| ⊕ | SANITARY SEWER MANHOLE | ⊕ | TELEPHONE BOX |
| ⊕ | STORM SEWER INLET | | |
-
- | | |
|-----|-------------------|
| --- | EXISTING ROAD |
| --- | PROPOSED ROAD |
| --- | PROPOSED SIDEWALK |

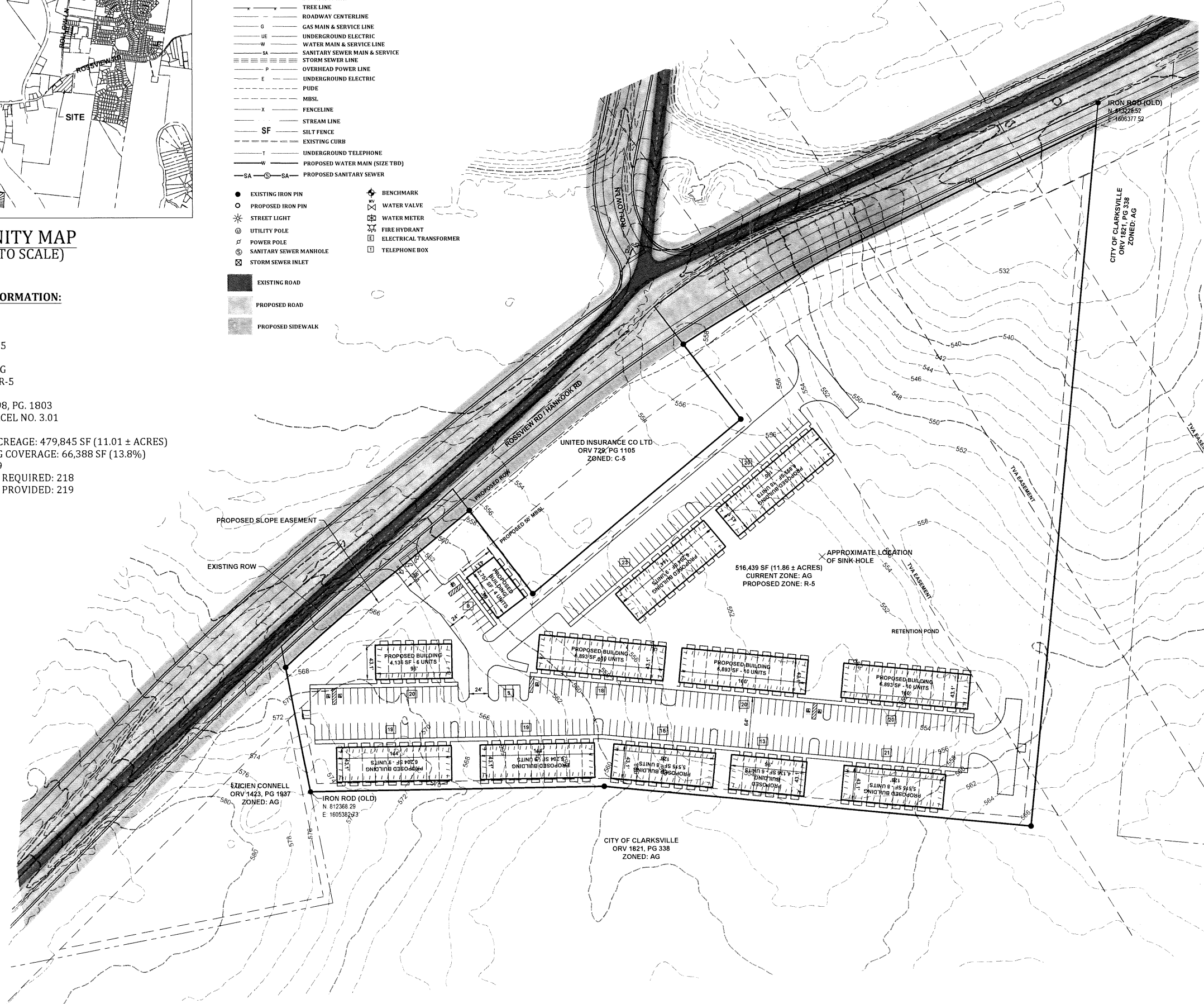


GENERAL SITE INFORMATION:

ANN M REES
204 LYNWOOD BLVD
NASHVILLE, TN 37205

CURRENT ZONING: AG
PROPOSED ZONING: R-5
CIVIL DISTRICT: 1st
DEED REF. #O.R.V. 398, PG. 1803
TAX MAP NO. 58 PARCEL NO. 3.01

PROPOSED TOTAL ACREAGE: 479,845 SF (11.01 ± ACRES)
PROPOSED BUILDING COVERAGE: 66,388 SF (13.8%)
PROPOSED UNITS: 99
PROPOSED PARKING REQUIRED: 218
PROPOSED PARKING PROVIDED: 219



REVISIONS	COMMENTS

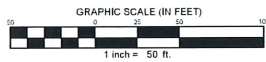
REES PROPERTY
EXHIBIT DRAWING
ROSSVIEW RD, CLARKSVILLE
MONTGOMERY COUNTY, TENNESSEE
July 28, 2022

MCKAY-BURCHETT & COMPANY ENGINEERS
1545 Madison Street
Clarksville, TN 37040
Ph # 931-245-3095

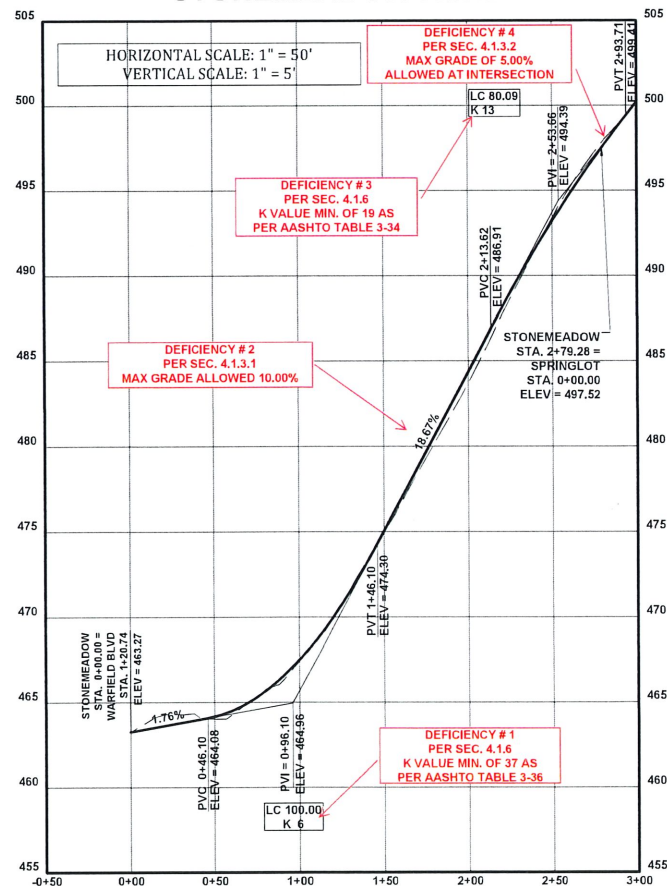
SHEET: PRE. 1.00

DRAWN BY: K.COOK
CHECKED BY: C.BIRCHETT

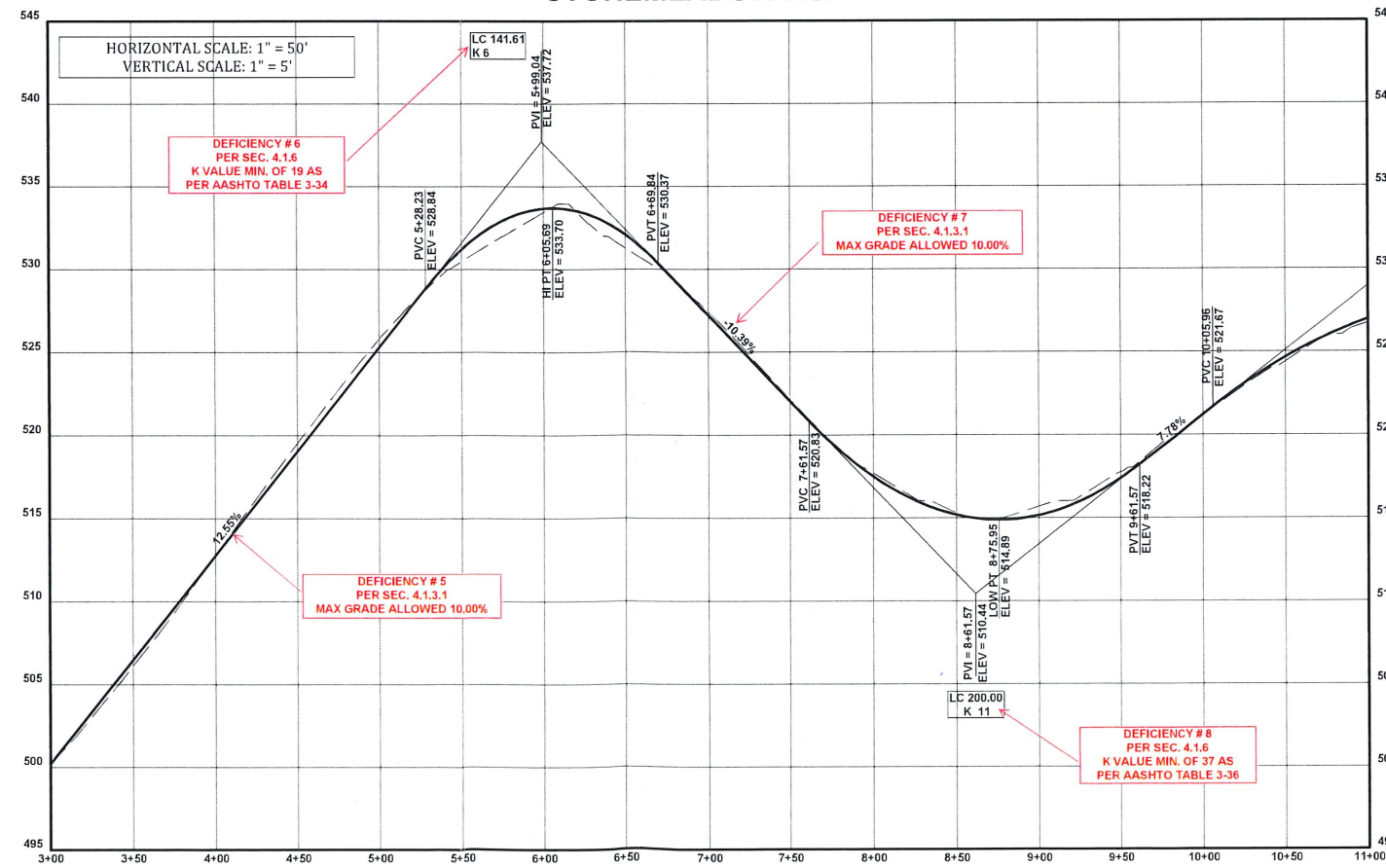
DATE: 07/28/22
PROJECT: 22022-001



STONEMEADOW ROAD



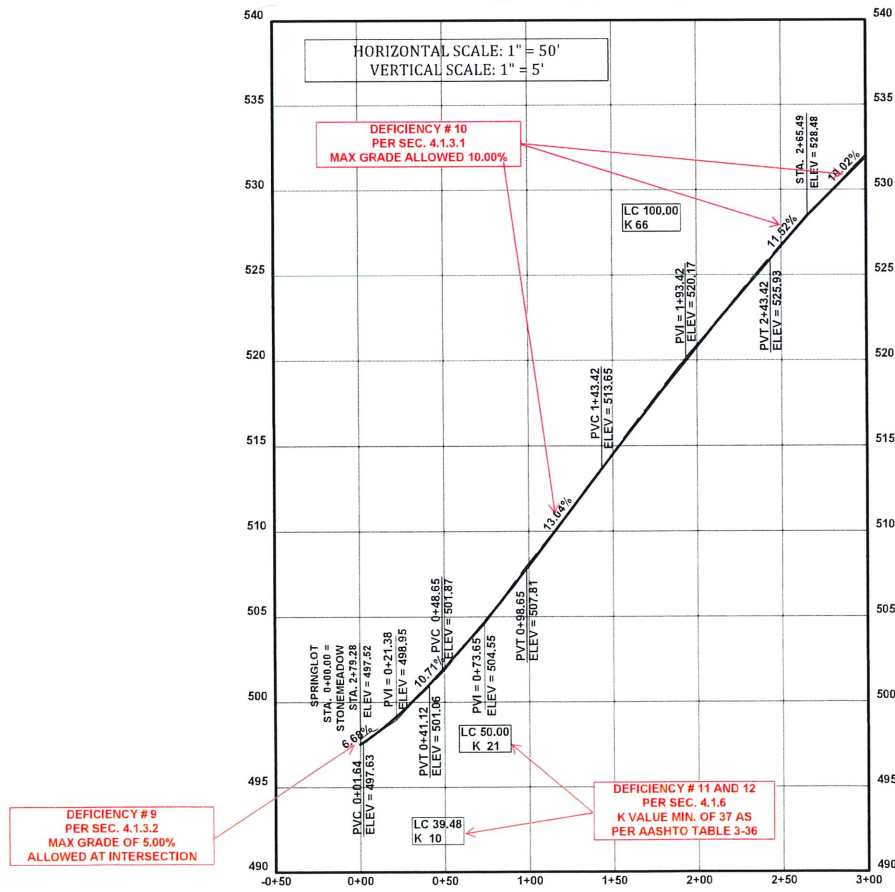
STONEMEADOW ROAD



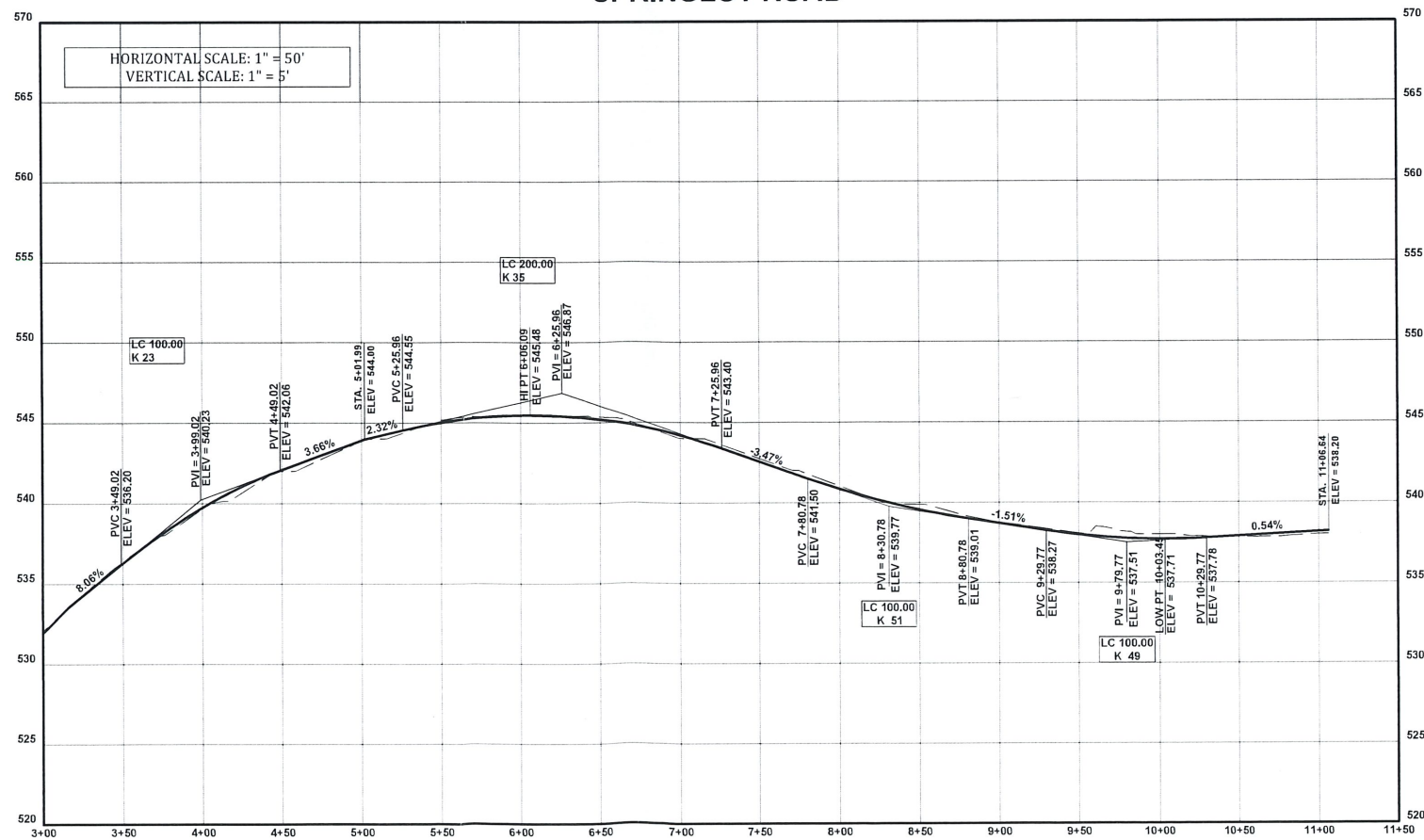
**CENTERLINE PLAN & PROFILE VIEW:
STONEMEADOW ROAD
CLARKSVILLE
MONTGOMERY COUNTY, TENNESSEE
July 1, 2022**



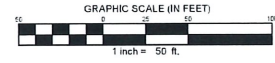
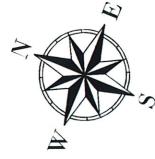
SPRINGLOT ROAD



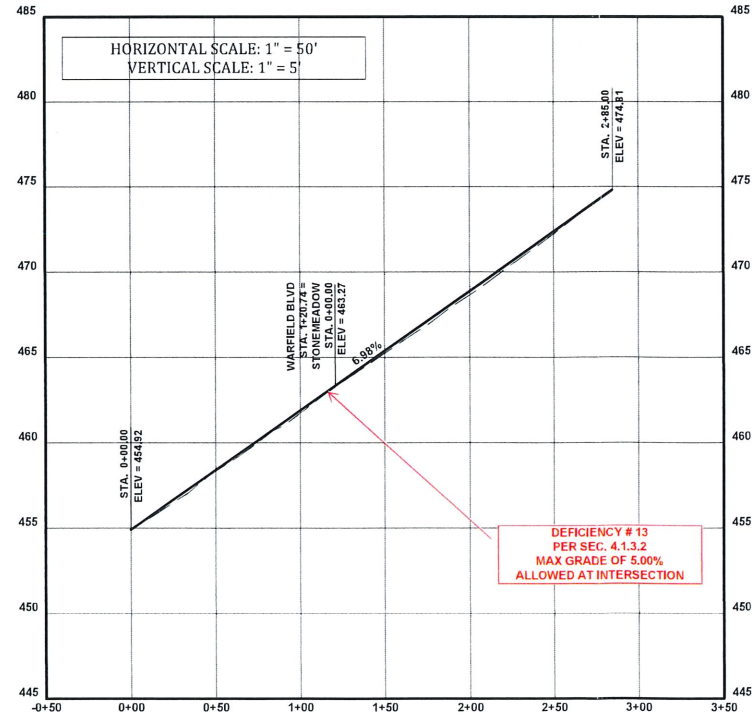
SPRINGLOT ROAD



**CENTERLINE PLAN & PROFILE VIEW:
SPRINGLOT ROAD
CLARKSVILLE
MONTGOMERY COUNTY, TENNESSEE
July 1, 2022**



WARFIELD



REVISIONS

DATE	COMMENTS

RUDOLPH TOWN ROADWAY
CENTERLINE PLAN & PROFILE VIEW:
POND APPLE ROAD
 CLARKSVILLE
 MONTGOMERY COUNTY, TENNESSEE
 July 1, 2022

MCKAY-BURCHETT & COMPANY ENGINEERS
 1545 Madison Street
 Clarksville, TN 37040
 Ph # 931-245-3095

BURCHETT, D. HOOVER
 CHECKED BY: C. BURCHETT

SHEET: C 3.01

FILE Z:\Proposed\Info\Print\Apple
 Profile and Site Illustration\print\apple
 roadway.dwg

- 412
- required for collector and arterial street as specified by the City Street Department, the County Highway Department or the Tennessee Department of Transportation.
6. "Broken Back" or "Flat Back" arrangements of curves having a short tangent between two curves in the same direction shall be avoided.
 7. Whenever a subdivision abuts or contains an existing or proposed collector or arterial street, the Regional Planning Commission may require service streets, roads or permanent easements, reverse frontage lots, and/or deep lots to provide for adequate protection for properties and to separate collector and arterial traffic from local traffic.
 8. All driveway access locations, located within the City limits of Clarksville, Tennessee, shall comply with the City of Clarksville Access Ordinance.
 9. Where the plat to be submitted includes only part of the tract owned or roads or permanent easement intended for development by the subdivider, a tentative plan or a proposed future street system for the unsubdivided portion may be required of the subdivider.
 10. Multiple outlets (entrance roads) from a residential subdivision to the arterial and collector street systems are encouraged to facilitate connectivity and continuity of the street system and to disperse traffic at outlet intersections while maintaining access control standards adopted for the arterial and collector street systems.
 - A. When the number of lots in a residential subdivision exceeds seventy-five (75) lots, more than one (1) outlet to the arterial and collector street systems is encouraged.
 - B. When the number of lots in a residential subdivision exceeds one-hundred and sixty (160) lots, there shall be either a minimum of two (2) outlets to the surrounding arterial and collector street systems or the single outlet shall be a minimum of thirty-six (36) feet of pavement with two exit lanes and one entrance lane in a minimum of sixty (60) feet of right-of-way to the first intersecting street in the development or 150 feet whichever is greater.
 - C. When a development exceeds two-hundred fifty (250) lots, there shall be two (2) outlets to the arterial and collector systems, and thereafter an additional outlet for each additional two-hundred fifty (250) lots.
 - D. The use of existing stub roads to existing adjacent development may be utilized and counted as an outlet so long as the existing development does not exceed the thresholds in this section.

4.1.3 STREET AND DEDICATED PERMANENT ACCESS EASEMENT GRADES

1. Street, road or permanent easement grades shall comply with good engineering practice and shall not exceed ten (10) percent or be less than 0.5 percent. Grades of major and collector streets shall not exceed five (5) percent wherever possible.
 2. Grades approaching intersections or cul-de-sacs shall not exceed five (5) percent for a distance of not less than seventy-five (75) feet from the centerline of said intersection, or from the center point of dead-end cul-de-sacs.
 3. Minimum grades on a cul-de-sac shall be one (1) percent centerline grade.
 4. All street improvements shall be raised at least two (2) feet above the one (1) percent
-

proposed future street system for the unsubdivided portion may be required of the subdivider.

- b) Multiple outlets (entrance roads) from a residential subdivision to the arterial and collector street systems are encouraged to facilitate connectivity and continuity of the street system and to disperse traffic at outlet intersections while maintaining access control standards adopted for the arterial and collector street systems.
 - A. When the number of lots in a residential subdivision exceeds seventy-five (75) lots, more than one (1) outlet to the arterial and collector street systems is encouraged.
 - B. When the number of lots in a residential subdivision exceeds one hundred and sixty (160) lots, there shall be either a minimum of two (2) outlets to the surrounding arterial and collector street systems or the single outlet shall be a minimum of thirty-six (36) feet of pavement with two exit lanes and one entrance lane in a minimum of sixty (60) feet of right-of-way to the first intersecting street in the development or 150 feet whichever is greater.
 - C. When a development exceeds two-hundred fifty (250) lots, there shall be two (2) outlets to the arterial and collector systems, and thereafter an additional outlet for each additional two-hundred fifty (250) lots.
 - D. The use of existing stub roads to existing adjacent development may be utilized and counted as an outlet so long as the existing development does not exceed the thresholds in this section.

4.1.3 STREET AND DEDICATED PERMANENT ACCESS EASEMENT GRADES

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2. Grades approaching intersections or cul-de-sacs shall not exceed five (5) percent for a distance of not less than seventy-five (75) feet from the centerline of said intersection, or from the center point of dead-end cul-de-sacs.
3. Minimum grades on a cul-de-sac shall be one (1) percent centerline grade.
4. All street improvements shall be raised at least two (2) feet above the one (1) percent flood elevation as established by the U.S. Army Corps of Engineers or the Federal

Emergency Management Agency or the City or County Stormwater Management Agency unless otherwise allowed within the City of Clarksville Stormwater Management Manual or the Montgomery County Stormwater Management Resolution.

4.1.4 HORIZONTAL CURVES FOR STREETS AND DEDICATED PERMANENT ACCESS EASEMENTS

On sub-collector streets, the horizontal curves should meet a thirty-five (35) mph design speed as defined in the current edition of the AASHTO book, "A Policy on Geometric Design of Highways and Streets" (i.e., four-hundred and seventy (470) feet radius on the centerline). On other local streets (i.e., lanes and courts), roads or permanent easements a design speed of twenty (20) mph for all horizontal curves should be maintained, not less than one-hundred (100) feet radius on the centerline. For collector and arterial streets, horizontal curves for design speeds greater than the thirty-five (35) mph design speed, may be required by the City Street Department, the County Highway Department or the Tennessee Department of Transportation.

4.1.5 SUPER ELEVATIONS FOR STREETS AND DEDICATED PERMANENT EASEMENTS

The use of Super Elevation is discouraged on local streets (i.e., sub-collectors, locals and cul-de-sacs), roads or permanent easements within residential developments. When Super Elevation is allowed it shall be to the inside of the curve with the rate of Super Elevation being based on an appropriate design speed. The maximum rate of Super Elevation shall be 0.06 feet per foot.

4.1.6 VERTICAL CURVES FOR STREETS AND DEDICATED PERMANENT EASEMENTS

On sub-collector streets, the vertical curves should meet the thirty-five (35) mph design speed as defined in the current edition of the AASHTO book, "A Policy of Geometric Design of Highways and Streets" (i.e., lanes and courts). On other streets, roads or permanent easements a design speed of thirty (30) mph should be maintained for all vertical curves. For collector and arterial streets, vertical curves for design speeds greater than thirty-five (35) mph design speed, may be required by the City Street Department, the County Highway Department or Tennessee Department of Transportation. Short cul-de-sacs (<10 lots) may be designed to 20 mph design speed.

4.1.7 INTERSECTIONS FOR STREETS AND DEDICATED PERMANENT EASEMENTS

1. Streets, roads or permanent easements shall intersect as nearly at right angles as possible, and in no case at an angle of less than sixty (60) degrees. Intersections involving a sub-collector, collector or arterial street shall not be at an angle of less than eighty (80) degrees.
2. Street, road or permanent easement intersections which do not align shall meet the following distance requirements between centerline intersections:
 - A. Arterial - A minimum of five-hundred (500) feet or more based on access control guidelines.

441 TOTAL LOTS

PROPOSED RED RIVER RIDGE
278 LOTS

RUDOLPH TOWN
163 EXISTING LOTS



TABLE 2. YEAR 2022 **EXISTING** PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	8 veh	LOS C	0 veh
	Northbound Right Turns	LOS B	1 veh	LOS B	0 veh
	Southbound Turning Movements	LOS E	2 veh	LOS C	1 veh
Pond Apple Road and Springlot Road	Eastbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Stonemeadow Road and Springlot Road	Westbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Southbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Warfield Boulevard and Stonemeadow Road	Westbound Left / Right Turns	LOS D	1 veh	LOS E	1 veh
	Southbound Left Turns / Thrus	LOS B	1 veh	LOS B	1 veh

PROPOSED

AM

PM

Warfield Boulevard and Stonemeadow Road (with existing laneage)	Westbound Left / Right Turns	LOS F *	5 veh	LOS F *	5 veh
	Southbound Left Turns / Thrus	LOS B	1 veh	LOS B	1 veh
Warfield Boulevard and Stonemeadow Road (with laneage modifications)	Westbound Left Turns	LOS F *	3 veh	LOS F *	2 veh
	Westbound Right Turns	LOS E	2 veh	LOS E	1 veh
	Southbound Left Turns	LOS B	1 veh	LOS B	1 veh

* with significant average vehicle delays

"infeasible"

5.3 CAPACITY ANALYSES

In order to identify the projected peak hour traffic volumes at the completion of the proposed project, the trips generated by the proposed development were added to the background peak hour traffic volumes within the study area. The resulting peak hour volumes are shown in [Figure 8](#).

Using the total projected peak hour traffic volumes, capacity analyses were conducted in order to determine the impact of the proposed project on the roadway system. For the purposes of these analyses, it was initially assumed that all of the existing laneage and traffic control will be maintained, and no improvements will be made.

The results of the capacity analyses for the total projected peak hour traffic volumes are shown in [Table 6](#), and [Appendix B](#) includes the capacity analyses worksheets. The capacity analyses indicate that most of the critical turning movements at the intersections within the study area will continue to operate at LOS C or better during both peak hours, and the vehicle queues will remain low. However, the northbound turning movements from Richview Middle School onto Memorial Drive and the southbound turns from Pond Apple Road onto Memorial Drive will operate at LOS F during the AM peak hour, and the vehicle queues will be moderate immediately before the start of the school day. Also, these turning movements will operate at LOS D or LOS E during the PM peak hour, although the vehicle queues will be low.

In addition, the westbound turns from Stonemeadow Road onto Warfield Boulevard will operate at LOS F during both peak hours, and although the vehicle queues will remain low, the average vehicle delays will be significant.

Based on these results, additional analyses were conducted in order to identify how well the southbound turning movements at the intersection of Memorial Drive and Pond Apple Road / Richview Middle School would operate if a separate left turn lane were provided. The results of these analyses indicate that, with this turn lane, the southbound vehicle queues would be reduced significantly during the AM peak hour.

Further analyses were conducted in order to identify how well the westbound turning movements at the intersection of Warfield Boulevard and Stonemeadow Road would operate if the westbound approach were widened to provide separate left and right turn lanes and the southbound approach were modified to restripe the shared left turn/through lane as a dedicated left turn lane. The results of these analyses indicate that, with these modifications, the westbound vehicle queues would be reduced during both peak hours. However, the average vehicle delays for the westbound left turns will be sufficiently high to consider these turning movements infeasible.

"infeasible"

6. CONCLUSIONS AND RECOMMENDATIONS

The analyses presented in this study indicate that the following improvements should be considered in conjunction with the planned project:

1. At the intersection of Memorial Drive and Pond Apple Road / Richview Middle School, a separate left turn lane should be provided on the southbound approach of Pond Apple Road. This turn lane should include at least 150 feet of storage and should be designed and constructed according to AASHTO standards and the standards established by the City of Clarksville.
2. At the intersection of Warfield Boulevard and Stonemeadow Road, separate left and right turn lanes should be provided on the westbound approach of Stonemeadow Road. Each of these turn lanes should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards and the standards established by the City of Clarksville.
3. Immediately north of Stonemeadow Road, southbound Warfield Boulevard widens from one travel lane to two travel lanes. Consideration should be given to restriping this cross-section to maintain a single southbound through lane and provide a dedicated southbound left turn lane onto Stonemeadow Road until south of the intersection, at which point the second southbound travel lane would begin.

It is important to note that, recently, the Tennessee Department of Transportation (TDOT) widened Warfield Boulevard north of Dunbar Cave Road. If TDOT plans to widen Warfield Boulevard to a five-lane cross-section from Dunbar Cave Road to Stonemeadow Road, this improvement will include a southbound left turn lane at Stonemeadow Road, and the recommendation to consider restriping will be unnecessary.

F i s c h b a c h
Transportation Group, LLC

Traffic Engineering and Planning

Ms. Gillian L. Fischbach, P.E., PTOE, President

August 23, 2022

Chris Goodman
Civil Site – Clarksville, PLLC
130 Hillcrest Drive, #100
Clarksville, TN 37043

RE: Miller Property
Pond Apple Road, Clarksville, TN

Dear Chris:

As requested, I have provided additional analyses for the intersection of Memorial Drive and Pond Apple Road / Richview Middle School Driveway, based on the Traffic Impact Study that was prepared by Fischbach Transportation Group (FTG, LLC) in May 2022 for the residential project that is proposed for construction on the Miller Property.

The Traffic Impact Study included the recommendation of a separate southbound left turn lane on Pond Apple Road at the intersection with Memorial Drive. With this new turn lane, the existing southbound lane would be striped as a shared through/right turn lane. Alternatively, the existing southbound lane could be striped as a shared left turn/through lane, and a separate right turn lane could be provided. With either configuration, the projected vehicle queues on Pond Apple Road with the completion of the proposed project will be significantly reduced compared to projected conditions with the existing laneage.

These results indicate that the recommended laneage improvement will mitigate the impacts of the traffic generated by the proposed project at the intersection of Memorial Drive and Pond Apple Road.

Sincerely,

Gillian L. Fischbach, P.E., PTOE

Ms. Gillian L. Fischbach, P.E., PTOE President

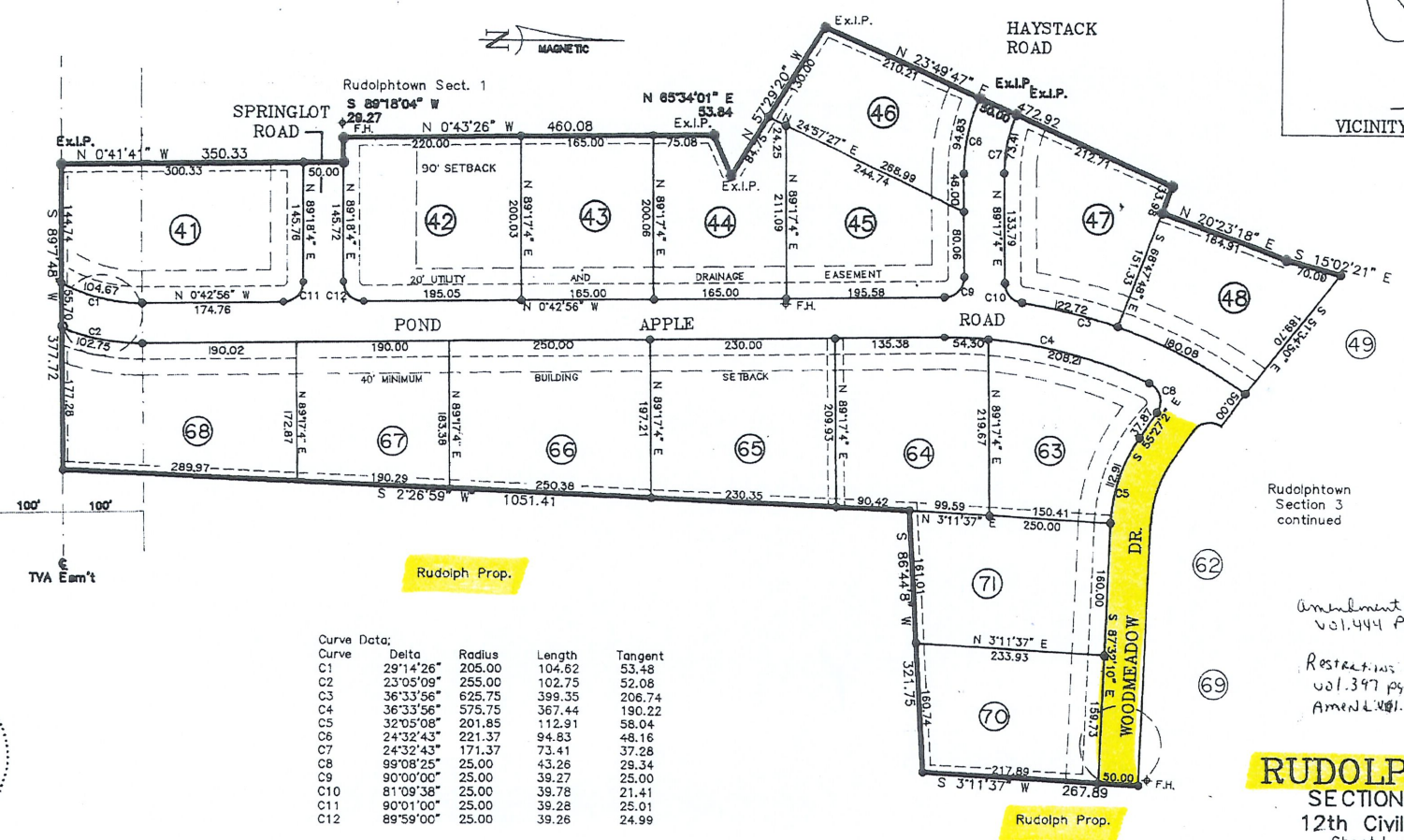
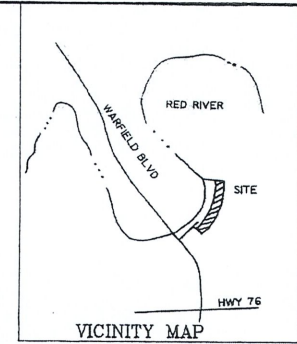
TOTAL PROJECTED PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with existing laneage)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Turning Movements	LOS F	21 veh	LOS E	3 veh
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with separate southbound left turn lane)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Left Turns	LOS F	7 veh	LOS E	2 veh
	Southbound Thrus / Right Turns	LOS E	3 veh	LOS B	1 veh
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with separate southbound right turn lane)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	11 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	1 veh	LOS A	0 veh
	Southbound Left Turns / Thrus	LOS F	7 veh	LOS E	1 veh
	Southbound Right Turns	LOS B	1 veh	LOS B	1 veh

ABK 12 pg. 153 pl. 153

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REC'D SEP 28 PM 12 30
 CHANCELLER'S OFFICE
 MONT. CO. CLERK



Recorded in Official Record Book
 Volume No. 46 Pg 465

Rudolphtown Section 3 continued

Amendment:
 vol. 444 pg 1642
 Restrictions:
 vol. 397 pg 491
 Amend. vol. 407 pg 1488

RUDOLPHTOWN SECTION THREE
 12th Civil District
 Sheet 1 of 2

Developer:
 Rudolphtown, Inc
 Engineer:
 Young, Weakley and Weakley
 P.O. Box 3409 Clarksville, TN 645-2524



Curve Data:

Curve	Delta	Radius	Length	Tangent
C1	29°14'26"	205.00	104.82	53.49
C2	23°05'09"	255.00	102.75	52.08
C3	36°33'56"	625.75	399.35	206.74
C4	36°33'56"	575.75	367.44	190.22
C5	32°05'08"	201.85	112.91	58.04
C6	24°32'43"	221.37	94.83	48.16
C7	24°32'43"	171.37	73.41	37.28
C8	99°08'25"	25.00	43.26	29.34
C9	90°00'00"	25.00	39.27	25.00
C10	81°09'38"	25.00	39.78	21.41
C11	90°01'00"	25.00	39.28	25.01
C12	89°59'00"	25.00	39.26	24.99

LEGEND:
 Iron Pin
 Point Of Curve
 Concrete Monument
 Public Utility Easement
 Minimum Building Setback Line
 Centerline
 Boundary Line

NOTES:
 1) All Easements Shown May Be Used For Power, Telephone, Gas, Sanitary Sewer, Storm Sewer, Water And Surface Drainage, As Well As The Disposal Use.
 2) A Minimum of Five Feet Either Side of An Side Lot Lines and Ten Feet Either Side of All Rear Lot Lines is reserved as a Utility and/or Drainage Easement.
 3) Bearings And Distances Shown Take Precedence Over Scale.
 4) All Front And Side Street Setbacks Shall Be 50' Minimum.

TVA Easement
 DB 87 Page 231

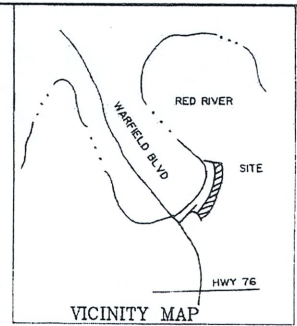
<p>NOTARIZATION</p> <p>STATE OF TENNESSEE, MONTGOMERY COUNTY PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED, A SOLELY "PUBLIC" Notary Public for said State and County, <u>Robert B. Young</u>, Notary Public, and who acknowledged that they executed the within described instrument on this <u>9th</u> day of <u>September</u>, 20<u>07</u>, my Commission Expires <u>9/28/10</u></p>		<p>CERTIFICATE OF OWNERSHIP AND DEDICATION</p> <p>I/WE HEREBY CERTIFY THAT I AM/WE ARE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I/WE HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY OWN FREE CONSENT ESTABLISH THE MINIMUM BUILDING RESTRICTION LINES AND DEDICATE ALL STREETS, ROADS, ALLEYS, WALKS, PARKS, AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS SHOWN.</p> <p><u>Robert B. Young</u> Notary Public DATE: <u>9-28-07</u></p>		<p>CERTIFICATE OF ACCURACY</p> <p>I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY TO THE ACCURACY REQUIRED BY THE CLARKEVILLE - MONTGOMERY REGIONAL PLANNING COMMISSION AND THAT THE MONUMENTS HAVE BEEN PLACED AS SHOWN HEREON.</p> <p><u>Robert B. Young</u> REGISTERED SURVEYOR DATE: <u>9-28-07</u></p>		<p>CERTIFICATE OF APPROVAL OF STREETS/ROADS</p> <p>I HEREBY CERTIFY THAT ALL STREETS/ROADS AND DRAINAGE STRUCTURES HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO CITY OR COUNTY SPECIFICATIONS, OR THAT A SURETY BOND IN THE AMOUNT OF <u>100,000.00</u> HAS BEEN POSTED WITH THIS OFFICE TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.</p> <p><u>William D. Young</u> CITY ENGINEER DATE: <u>9/28/07</u></p>		<p>CERTIFICATE OF APPROVAL OF UTILITIES</p> <p>I HEREBY CERTIFY THAT ALL WATER, SEWER, AND GAS LINES HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO CITY/UTILITY DISTRICT SPECIFICATIONS OR THAT A SURETY BOND IN THE AMOUNT OF _____ HAS BEEN POSTED WITH THIS OFFICE TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.</p> <p><u>David B. Young</u> CITY ENGINEER DATE: <u>9/28/07</u></p>		<p>CERTIFICATE OF APPROVAL OF WATER AND SEWERAGE SYSTEM</p> <p>I HEREBY CERTIFY THAT THE WATER SUPPLY AND/OR SEWERAGE DISPOSAL SYSTEM INSTALLED OR PROPOSED FOR INSTALLATION FULLY MEETS MINIMUM REQUIREMENTS OF THE TENNESSEE DEPARTMENT OF PUBLIC HEALTH AS SHOWN HEREON.</p> <p><u>William D. Young</u> COUNTY HEALTH DEPARTMENT OFFICIAL DATE: <u>9-28-07</u></p>		<p>CERTIFICATE OF APPROVAL FOR RECORDING</p> <p>I HEREBY CERTIFY THAT THE SUBDIVISION PLAN SHOWN HEREON COMPLIES WITH ALL SUBDIVISION REGULATIONS FOR MONTGOMERY COUNTY, TENNESSEE WITH THE EXCEPTION OF SUCH VARIANCES IF ANY AS NOTED IN MINUTES OF THE COMMISSION AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MONTGOMERY COUNTY REGISTER.</p> <p><u>Alvin Allen</u> REG. CLERK, MONT. CO. REG. PLAR. COM. DATE: <u>9/28/07</u></p>	
<p>FINAL PLAT DATE: <u>9/87</u></p>		<p>TOTAL ACRES <u>37.4</u></p>		<p>TOTAL LOTS <u>32</u></p>		<p>ACRES NEW ROAD <u>4.86</u></p>		<p>MILES NEW ROAD <u>.80</u></p>		<p>OWNER _____ CIVIL DISTRICT <u>12</u></p>			
<p>SCALE: 1" = 100'</p>													

P. BK 12
 pg. 153 A
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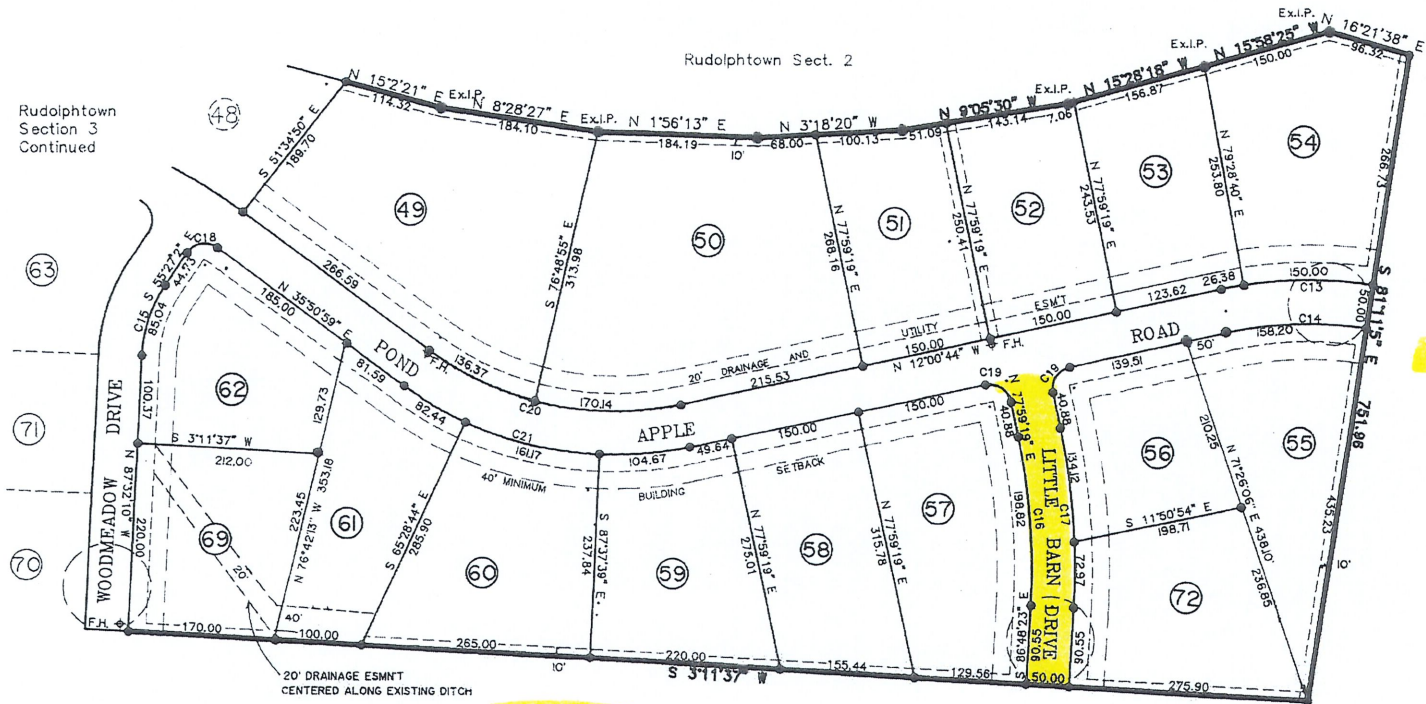
153 A-1 153-A
 153-A-1 153-A

CURVE DATA:

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C13	20°49'36"	485.23	176.38	89.17
C14	20°49'36"	435.23	158.20	79.98
C15	32°05'08"	151.85	85.04	43.67
C16	15°12'18"	749.21	198.82	100.00
C17	15°12'18"	799.21	212.09	106.67
C18	91°18'02"	25.00	39.84	25.57
C19	90°00'00"	25.00	39.27	25.00
C20	47°51'41"	366.93	306.51	162.84
C21	47°51'41"	416.93	348.28	185.03



Rudolphtown
 Section 3
 Continued



Recorded in Official Recording Book
 Volume No. 46, Page 46S
 Rudolph Prop.



Rudolph Prop.

RUDOLPHTOWN
 SECTION THREE
 12th Civil District
 Sheet 2 of 2

Developer;
 Rudolphtown Inc.
 Engineer;
 Young, Weakley and Weakley
 P.O. Box 3409 Clarksville, Tn
 645-2524

C-3

NOTARIZATION		LEGEND		NOTES:		CERTIFICATE OF OWNERSHIP AND DEDICATION		CERTIFICATE OF ACCURACY		CERTIFICATE OF APPROVAL OF STREETS/ROADS		CERTIFICATE OF APPROVAL OF UTILITIES		CERTIFICATE OF APPROVAL OF WATER AND SEWERAGE SYSTEM		CERTIFICATE OF APPROVAL FOR RECORDING			
STATE OF TENNESSEE, MONTGOMERY COUNTY		Iron Pin Point of Curve Concrete Monument Public Utility Easement Minimum Building Setback Line Centerline Boundary Line		1) All Easements Shown May Be Used For Power, Telephone, Gas, Sanitary Sewer, Storm Sewer, Water And Surface Drainage, As Well As The Designed Use. 2) A Minimum of Five Feet Either Side of All Side Lot Lines and Ten Feet Either Side of All Rear Lot Lines is reserved as a Utility and/or Drainage Easement. 3) Bearings And Distances Shown Take Precedence Over Scale. 4) All Front And Side Street Setbacks Shall Be 40' Minimum.		I HEREBY CERTIFY THAT I AM/WE ARE OWNERS OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I/WE HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY/OUR FULL CONSENT ESTABLISHING THE MINIMUM BUILDING RESTRICTION LINES AND DEDICATE ALL STREETS, ROADS, ALLEYS, WALKS, PARKS, AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS SHOWN		I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY TO THE ACCURACY REQUIRED BY THE CLARKSVILLE - MONTGOMERY REGIONAL PLANNING COMMISSION AND THAT THE MONUMENTS HAVE BEEN PLACED AS SHOWN HEREON.		I HEREBY CERTIFY THAT ALL STREETS/ROADS AND DRAINAGE STRUCTURES HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO CITY OR COUNTY SPECIFICATIONS OR THAT A SURETY BOND IN THE AMOUNT OF \$10,000.00 HAS BEEN POSTED WITH THIS OFFICE TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.		I HEREBY CERTIFY THAT ALL WATER, SEWER, AND GAS LINES HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO CITY/UTILITY DISTRICT SPECIFICATIONS OR THAT A SURETY BOND IN THE AMOUNT OF _____ HAS BEEN POSTED WITH THIS OFFICE TO ASSURE COMPLETION OF ALL REQUIRED IMPROVEMENTS IN CASE OF DEFAULT.		I HEREBY CERTIFY THAT THE WATER SUPPLY AND/OR SEWERAGE DISPOSAL SYSTEM INSTALLED OR PROPOSED FOR INSTALLATION FULLY MEETS MINIMUM REQUIREMENTS OF THE TENNESSEE DEPARTMENT OF PUBLIC HEALTH AS SHOWN HEREON.		I HEREBY CERTIFY THAT THE SUBDIVISION PLAN SHOWN HEREON COMPLIES WITH ALL SUBDIVISION REGULATIONS FOR MONTGOMERY COUNTY, TENNESSEE WITH THE EXCEPTION OF SUCH VARIANCES IF ANY AS NOTED IN MINUTES OF THE COMMISSION AND THAT IT HAS BEEN APPROVED FOR RECORDING IN THE OFFICE OF THE MONTGOMERY COUNTY REGISTER		FINAL PLAT 9/87 DATE	
DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		DATE: 9-28-87		TOTAL ACRES 37.4 TOTAL LOTS 32 ACRES NEW ROAD 4.86 MILES NEW ROAD .80 OWNER CIVIL DISTRICT 12			



Thomas N. Bateman Property

Disapproval due to the following:

1. Section 4.1.2 Subsection 1.B. of the Subdivision Regulations states that "A stubout for future continuation of the public street and road network shall be provided from the subdivision to all adjacent vacant land zoned for residential or commercial use including Agricultural zoning as determined by the RPC staff." A road stub to the west to the George Kennedy III Property is required per the Subdivision Regulations.
2. Section 4.1.2 Subsection 4. of the Subdivision Regulations states that "Collector streets, roads or permanent easements may be required where necessary to facilitate traffic flow in the subdivision." Cracker Barrel Drive is being required to connect to Oakland Road. The 25' Permanent Access Easement that is being shown should be a dedicated public right-of-way not a private easement.
3. Section 1.9 Subsection 1. of the Subdivision Regulations states that "Interpretation: In their interpretation and application, the provisions of these regulations shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare."
4. Section 3.2.4 Subsection 3. of the Subdivision Regulations states that The Regional Planning Commission shall not approve the subdivision of land if, from adequate investigations conducted by all public agencies concerned, it has been determined that in the best interest of the public the site is not suitable for platting and development purposes of the kind proposed." See Department comments in the File and Commissioners packets.
5. Section 3.2.5 Subsection 1. (portion of) states that "the permanent easement shall conform to all other rules, regulations, and specifications for streets, drainage, and utilities as required within the Subdivision Regulations for Clarksville and Montgomery County and City Street Specifications and Storm Water Regulations." Per Table 4.1 of the Subdivision Regulations, Permanent access easements are required to have, at a minimum a 50' easement width and 28' of pavement width for commercially zoned property. A Permanent turnaround is also required. Additionally, Subsection 3 of the same section states "A twenty (20) foot minimum building setback line shall be required along the above mentioned permanent easements. A drainage and/or utility easement may also be required along the permanent easement."
6. The Montgomery County Highway Department has stated that only one access point is allowed onto Oakland Road, as shown at least two would be required for usable road frontage. That Department has also indicated than the easement should be at the rear of the frontage lots, not the front as is shown..

Traffic Impact Study

Proposed Residential Project
Miller Property

Pond Apple Road
Clarksville, Tennessee

Prepared May 2022

PREPARED FOR:

CSDG
130 Hillcrest Drive, #100
Clarksville, TN 37043

PREPARED BY:

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FTG Project Number: 11216



F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning

Traffic Impact Study

Proposed Residential Project
Miller Property
Pond Apple Road
Clarksville, TN

Prepared May 2022
For CSDG

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TOTAL PROJECTED PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with existing laneage)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Turning Movements	LOS F	21 veh	LOS E	3 veh
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with separate southbound left turn lane)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Left Turns	LOS F	7 veh	LOS E	2 veh
	Southbound Thrus / Right Turns	LOS E	3 veh	LOS B	1 veh
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with separate southbound right turn lane)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	11 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	1 veh	LOS A	0 veh
	Southbound Left Turns / Thrus	LOS F	7 veh	LOS E	1 veh
	Southbound Right Turns	LOS B	1 veh	LOS B	1 veh

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1. INTRODUCTION

This traffic study has been prepared in order to identify the traffic impacts of a residential project that is proposed to be constructed on the east side of Pond Apple Road, north of Memorial Drive, in Clarksville, Tennessee.

For the purposes of this study, existing and background traffic volumes were established, and capacity analyses were conducted for these conditions. Trip generation calculations were performed, and the trips which are expected to be generated by the proposed project were distributed to the roadway system. The site-generated trips were added to the background traffic volumes, and the intersections which provide access to the site were then evaluated to determine the traffic impacts of the proposed project. Access needs for the project were evaluated, and the necessary roadway and/or traffic control improvements were identified. This report presents the results of these analyses and the subsequent recommendations.

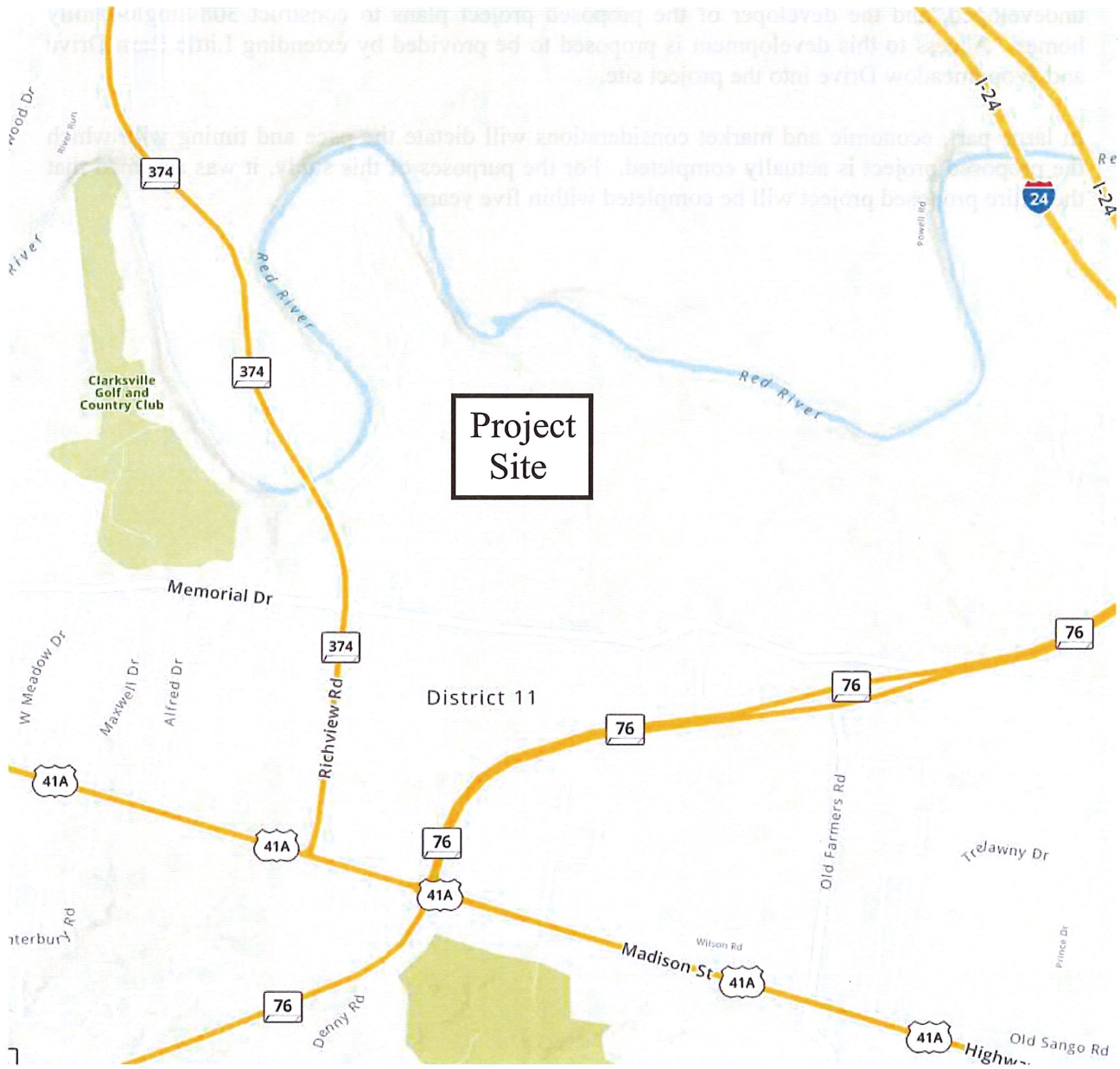
2. PROJECT DESCRIPTION

The location of the proposed project is shown in **Figure 1**. As shown, the project site is located on the east side of Pond Apple Road, north of Memorial Drive, in Clarksville, Tennessee.

The current site plan for the proposed project is shown in **Figure 2**. Currently, the project site is undeveloped, and the developer of the proposed project plans to construct 308 single-family homes. Access to this development is proposed to be provided by extending Little Barn Drive and Woodmeadow Drive into the project site.

In large part, economic and market considerations will dictate the pace and timing with which the proposed project is actually completed. For the purposes of this study, it was assumed that the entire proposed project will be completed within five years.

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Traffic Engineering and Planning



No Scale

Figure 1.
Location of the Proposed Project Site



SITE DATA - PRELIM GRADING

SITE AREA: 2.7645 ACRES
 MAPED: PARCEL 2010
 PROPOSED DENSITY: 208 SINGLE FAMILY LOTS X 2071
 PRELIMINARY GRADING:
 CLEARING: 14,777 SQUARE FEET
 TOTAL GRADING CUT: 44,497,000 CU YD
 TOTAL GRADING FILL: 44,518,000 CU YD

GENERAL NOTES:

1. BASE INFORMATION PROVIDED BY OTHERS AND SHOULD BE VERIFIED.
2. ALL SITE FINAL ZONING AND STREAMWATER AND WETLANDS REGULATIONS SHALL BE OBTAINED AND SHALL BE SUBJECT TO CHANGE AND FINAL VERIFICATION.
3. SHEET - DO NOT RELY ON THIS DOCUMENT.



CLARKSVILLE - MILLER PROPERTY
 PRELIMINARY GRADING EXHIBIT
 P:\13-502-01\0-502.14.2023



3. YEAR 2022 EXISTING TRAFFIC VOLUMES

In order to provide data for the traffic impact analysis, peak hour traffic volumes were identified for the following intersections:

- Memorial Drive and Pond Apple Road / Richview Middle School Driveway
- Pond Apple Road and Springlot Road
- Stonemeadow Road and Springlot Road
- Warfield Boulevard and Stonemeadow Road

The existing laneage at these intersections is shown in [Figure 3](#).

It is important to note that turning movement counts at the intersection of Memorial Drive and Pond Apple Road / Richview Middle School Driveway and the intersection of Warfield Boulevard and Stonemeadow Road were collected from 6:00 AM – 7:00 PM. Turning movement counts at the intersection of Pond Apple Road and Springlot Road and the intersection of Stonemeadow Road and Springlot Road were collected from 6:00-9:00 AM and 4:00-7:00 PM. This data was collected on typical weekdays in early May 2022 when schools were in session. The traffic count worksheets are included in [Appendix A](#), and the existing peak hour traffic volumes are shown in [Figure 4](#). Certain turning movements were increased as necessary to show balanced traffic flows at the intersections on Stonemeadow Road.

Using the existing peak hour traffic volumes shown in [Figure 4](#), capacity analyses were conducted for the intersections studied. Specifically, in order to identify current peak hour levels of operation within the study area, the capacity calculations were performed according to the methods outlined in the [Highway Capacity Manual 6](#) (HCM 6). These analyses result in the determination of a Level of Service (LOS), which is a measure of evaluation is used to describe how well an intersection or roadway operates. LOS A represents free flow traffic operations, and LOS F suggests that the traffic demand exceeds the available capacity. In an urbanized area, LOS D is typically considered to be the minimum acceptable LOS. [Table 1](#) presents the descriptions of LOS for unsignalized intersections.

The results of the capacity analyses for the existing peak hour traffic volumes are shown in [Table 2](#), and [Appendix B](#) includes the capacity analyses worksheets. The capacity analyses indicate that most of the critical turning movements at the intersections within the study area currently operate at LOS C or better during both peak hours, and the vehicle queues are low. However, the northbound turning movements from Richview Middle School onto Memorial Drive operate at LOS F during the AM peak hour, and the vehicle queues are moderate immediately before the start of the school day. Also, the southbound turns from Pond Apple Road onto Memorial Drive operate at LOS E during the AM peak hour, although the vehicle queues are low. Similarly, the westbound turns from Stonemeadow Road onto Warfield Boulevard operate at LOS D during the AM peak hour and LOS E during the PM peak hour, although the vehicle queues are low.

TABLE 1. DESCRIPTIONS OF LOS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Description	Average Control Delay (sec/veh)
A	Minimal delay	≤ 10
B	Brief delay	> 10 and ≤ 15
C	Average delay	> 15 and ≤ 25
D	Significant delay	> 25 and ≤ 35
E	Long delay	> 35 and ≤ 50
F	Extreme delay	> 50

Source: Highway Capacity Manual 6 (HCM 6)

TABLE 2. YEAR 2022 EXISTING PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	8 veh	LOS C	0 veh
	Northbound Right Turns	LOS B	1 veh	LOS B	0 veh
	Southbound Turning Movements	LOS E	2 veh	LOS C	1 veh
Pond Apple Road and Springlot Road	Eastbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Stonemeadow Road and Springlot Road	Westbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Southbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Warfield Boulevard and Stonemeadow Road	Westbound Left / Right Turns	LOS D	1 veh	LOS E	1 veh
	Southbound Left Turns / Thrus	LOS B	1 veh	LOS B	1 veh

4. YEAR 2027 BACKGROUND TRAFFIC VOLUMES

In order to account for the traffic growth which will occur within the study area because of typical growth, as well as other approved developments, background traffic volumes were established for the intersections within the study area. Specifically, in order to account for growth within the study area, consideration was given to the historical traffic volumes near the project site. The Tennessee Department of Transportation (TDOT) conducts an annual count program throughout the state. This count program includes the annual collection of average daily traffic (ADT) counts at numerous fixed locations.

As shown in [Table 3](#), the daily traffic volumes within the study area have increased steadily since 2009. Based on this information, for the purposes of this study, the existing traffic volumes at the intersections within the study area were increased by 10% in order to represent Year 2027 background traffic volumes, as shown in [Figure 5](#).

TABLE 3. HISTORICAL TRAFFIC VOLUMES IN THE STUDY AREA

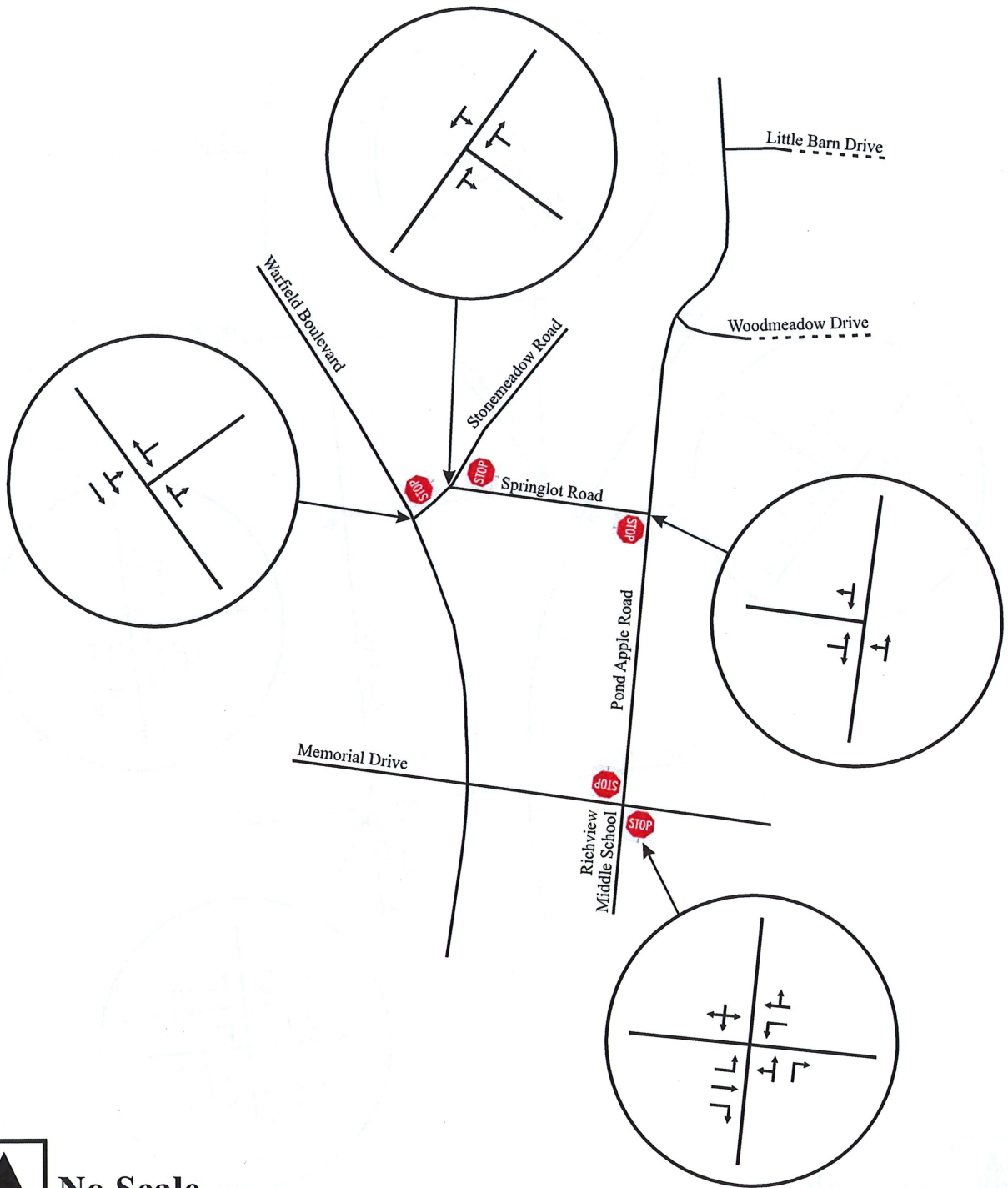
Year	Station 192 Memorial Drive ADT	Annual Growth	Overall Growth
2009	5,684		
2010	5,962	4.89%	
2011	5,950	-0.20%	
2012	6,119	2.84%	
2013	6,173	0.88%	
2014	6,483	5.02%	
2015	6,418	-1.00%	
2016	6,856	6.82%	
2017	6,710	-2.13%	
2018	6,846	2.03%	
2019	7,117	3.96%	
2020	6,490	-8.81%	
2021	6,748	3.98%	1.56%
Year	Station 103 Warfield Blvd ADT	Annual Growth	Overall Growth
2009	23,029		
2010	23,422	1.71%	
2011	22,315	-4.73%	
2012	22,400	0.38%	
2013	21,987	-1.84%	
2014	23,065	4.90%	
2015	23,628	2.44%	

2016	23,870	1.02%	
2017	21,342	-10.59%	
2018	20,703	-2.99%	
2019	23,564	13.82%	
2020	23,800	1.00%	
2021	25,931	8.95%	1.05%

Using the background peak hour traffic volumes, capacity analyses were conducted for the intersections within the study area. For these analyses, it was assumed that all existing infrastructure will be maintained and no improvements will be made. The results of the capacity analyses for the background peak hour traffic volumes are shown in [Table 4](#), and [Appendix B](#) includes the capacity analyses worksheets.

The capacity analyses indicate that most of the critical turning movements at the intersections within the study area will continue to operate at LOS C or better during both peak hours, and the vehicle queues will remain low. However, the northbound turning movements from Richview Middle School onto Memorial Drive will continue to operate at LOS F during the AM peak hour, and the vehicle queues will be moderate immediately before the start of the school day. Also, the southbound turns from Pond Apple Road onto Memorial Drive will operate at LOS F during the AM peak hour, although the vehicle queues will remain relatively low. Similarly, the westbound turns from Stonemeadow Road onto Warfield Boulevard will operate at LOS E during the AM peak hour and LOS F during the PM peak hour, although the vehicle queues will remain low.

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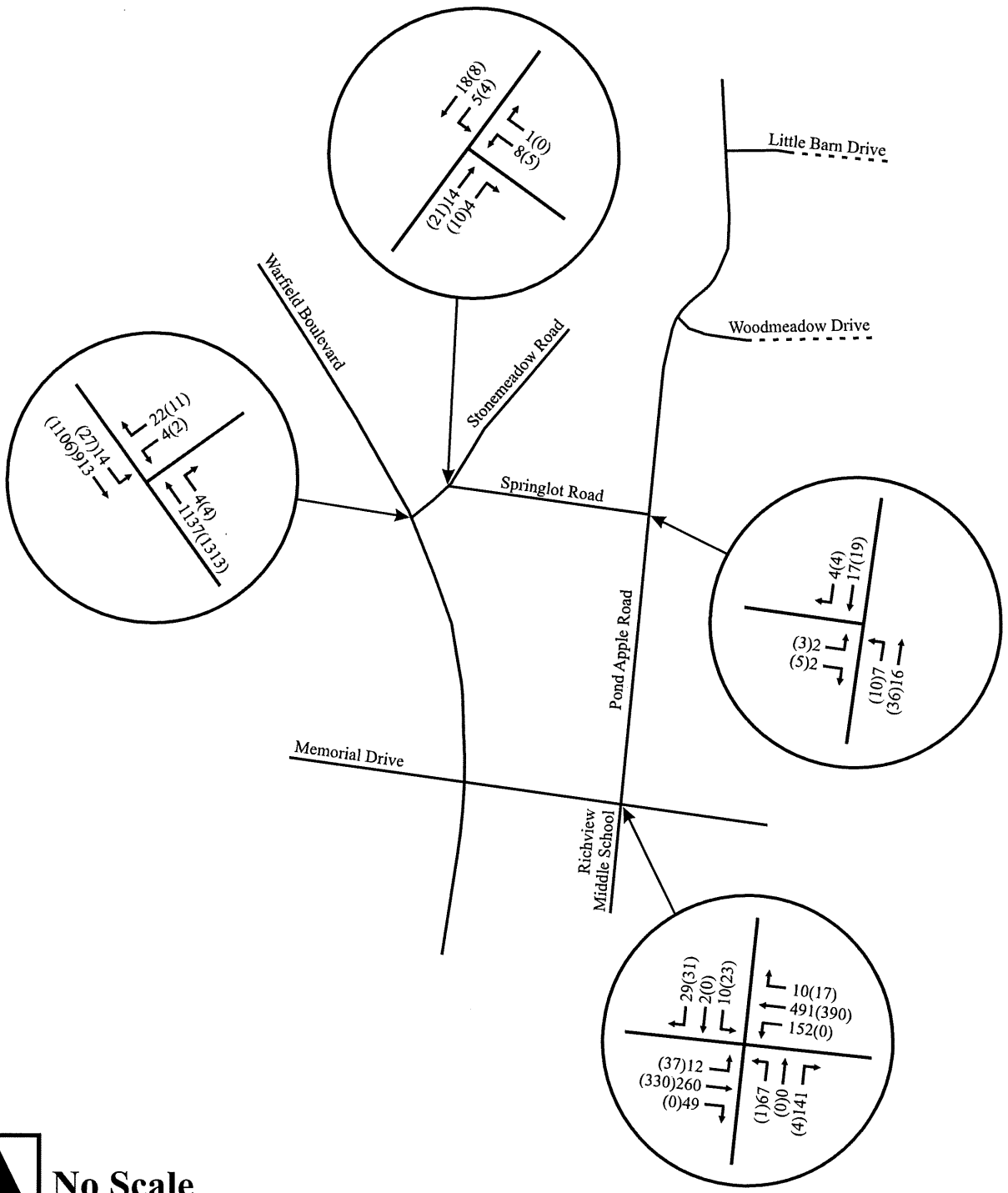


No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 3.
Existing Laneage and Traffic Control

F i s c h b a c h
 Transportation Group, LLC
 Traffic Engineering and Planning



No Scale

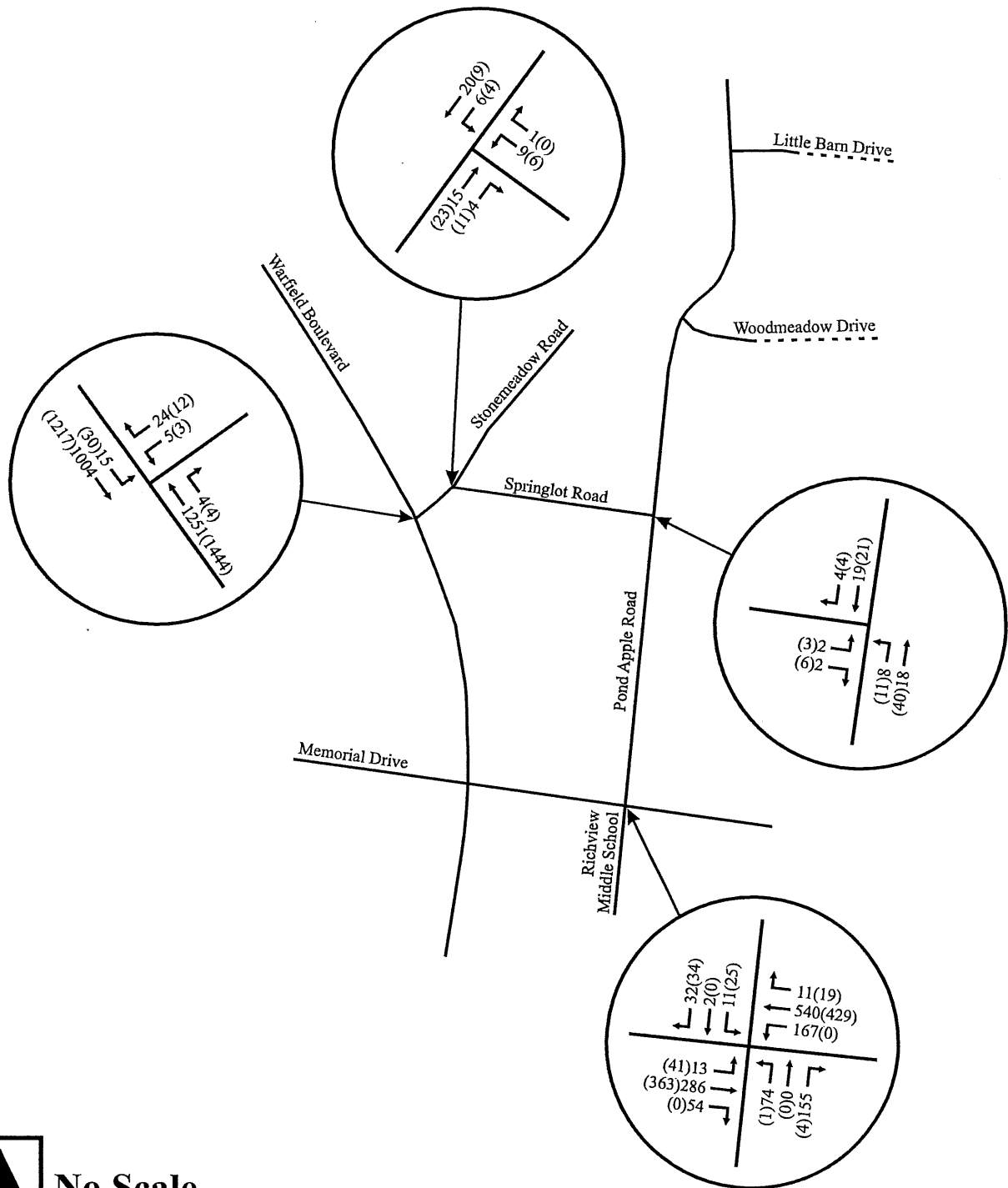
XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 4.
 Existing Year 2022 Peak Hour Traffic Volumes

TABLE 4. YEAR 2027 BACKGROUND PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	10 veh	LOS C	0 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Turning Movements	LOS F	3 veh	LOS C	1 veh
Pond Apple Road and Springlot Road	Eastbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Stonemeadow Road and Springlot Road	Westbound Left / Right Turns	LOS A	0 veh	LOS A	0 veh
	Southbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Warfield Boulevard and Stonemeadow Road	Westbound Left / Right Turns	LOS E	1 veh	LOS F	1 veh
	Southbound Left Turns / Thrus	LOS B	1 veh	LOS B	1 veh

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 Traffic Engineering and Planning

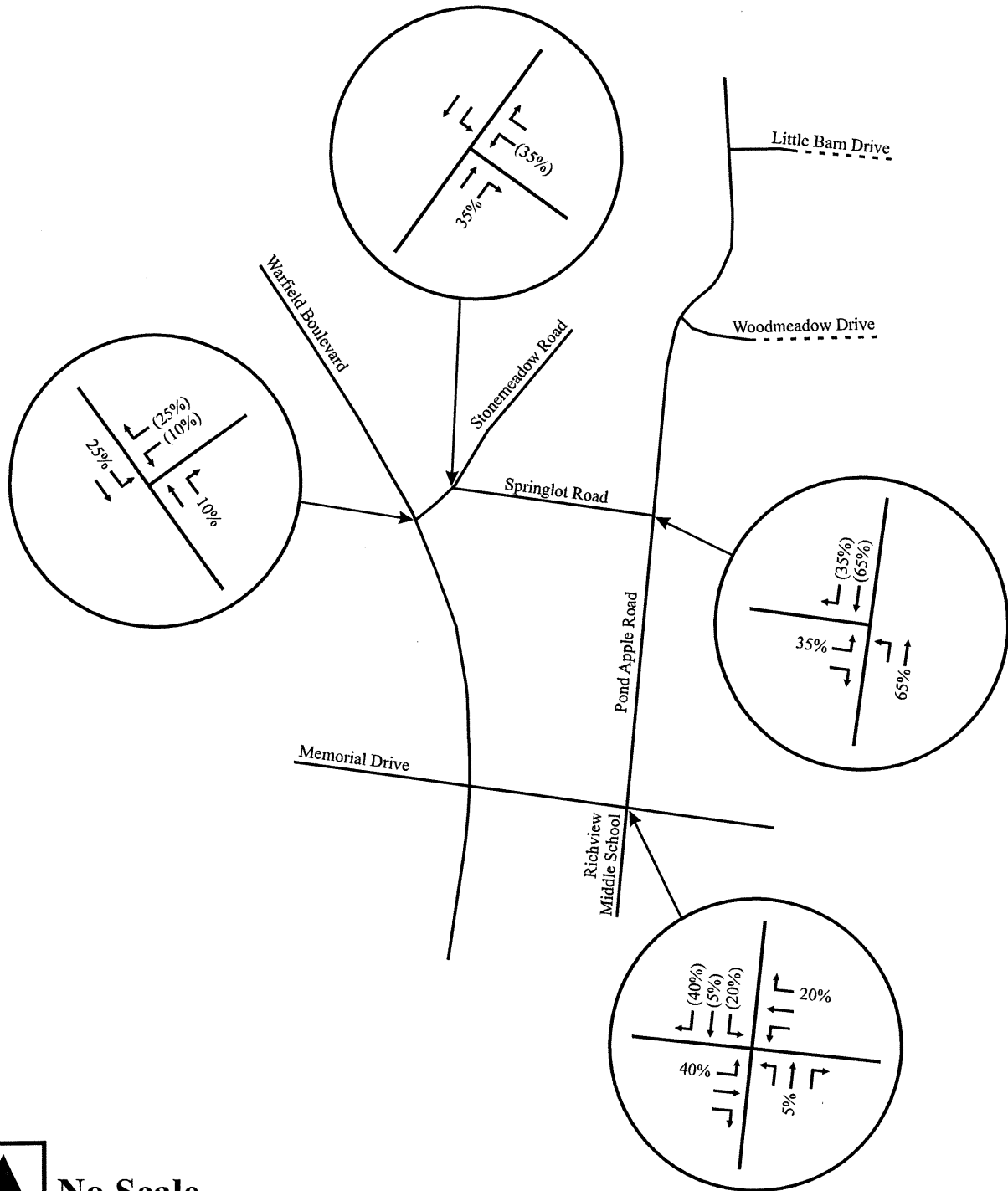


No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 5.
Year 2027 Background Peak Hour Traffic Volumes
(Existing Traffic Volumes Increased 10%)

F i s c h b a c h
 Transportation Group, LLC
 Traffic Engineering and Planning

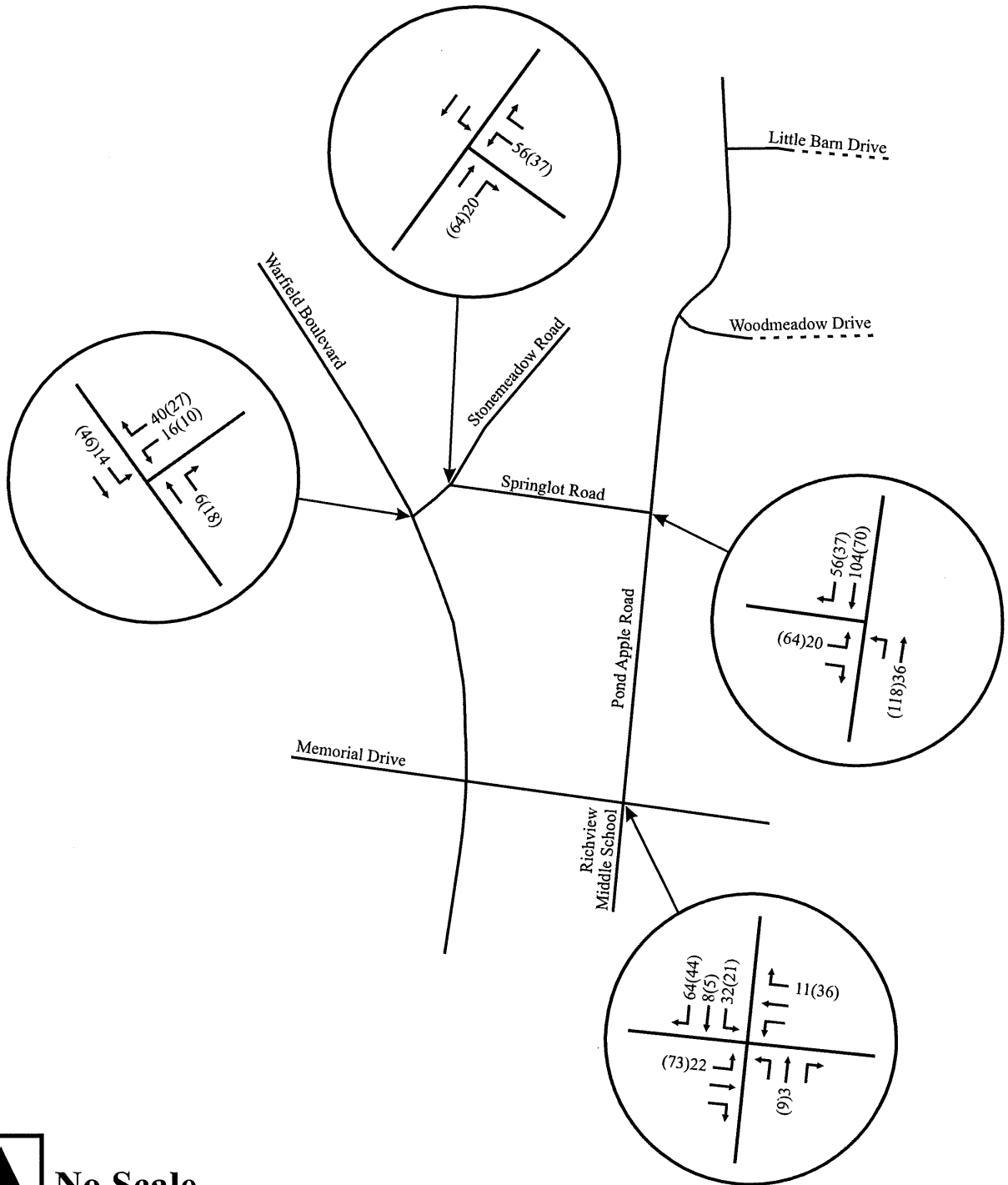


No Scale

XX - Entering Volumes
 (XX) - Exiting Volumes

Figure 6.
 Directional Distribution of Peak Hour Traffic
 Volumes Generated by the Proposed Project

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 Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 7.
 Peak Hour Traffic Volumes Generated
 by the Proposed Project

5. IMPACTS OF PROPOSED DEVELOPMENT

5.1 TRIP GENERATION

Trip generation calculations were conducted in order to identify how much traffic will be generated by the proposed project. Trip generation data for daily and peak hour trips were identified from Trip Generation, 11th Edition, which was published by the Institute of Transportation Engineers (ITE) in 2021. [Table 5](#) presents the daily and peak hour trip generations for proposed project, and these calculations are included in [Appendix C](#).

TABLE 5. TRIP GENERATION FOR THE PROPOSED PROJECT

LAND USE	SIZE	GENERATED TRAFFIC				
		DAILY	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Single-Family Detached (LUC 210)	308 homes	2,904	56	160	182	107

5.2 TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

For the purposes of this study, it was estimated that the trips generated by the proposed development will access the project site according to the directional distribution shown in [Figure 6](#). The development of this distribution was based on the following factors:

- existing land use characteristics,
- the directions of approach of the existing traffic,
- the access proposed for the project, and
- the locations of population centers in the area.

The peak hour trip generation and directional distribution were used to add the site-generated trips to the roadway system. [Figure 7](#) includes the peak hour traffic volumes that are expected to be generated by the proposed project.

5.3 CAPACITY ANALYSES

In order to identify the projected peak hour traffic volumes at the completion of the proposed project, the trips generated by the proposed development were added to the background peak hour traffic volumes within the study area. The resulting peak hour volumes are shown in [Figure 8](#).

Using the total projected peak hour traffic volumes, capacity analyses were conducted in order to determine the impact of the proposed project on the roadway system. For the purposes of these analyses, it was initially assumed that all of the existing laneage and traffic control will be maintained, and no improvements will be made.

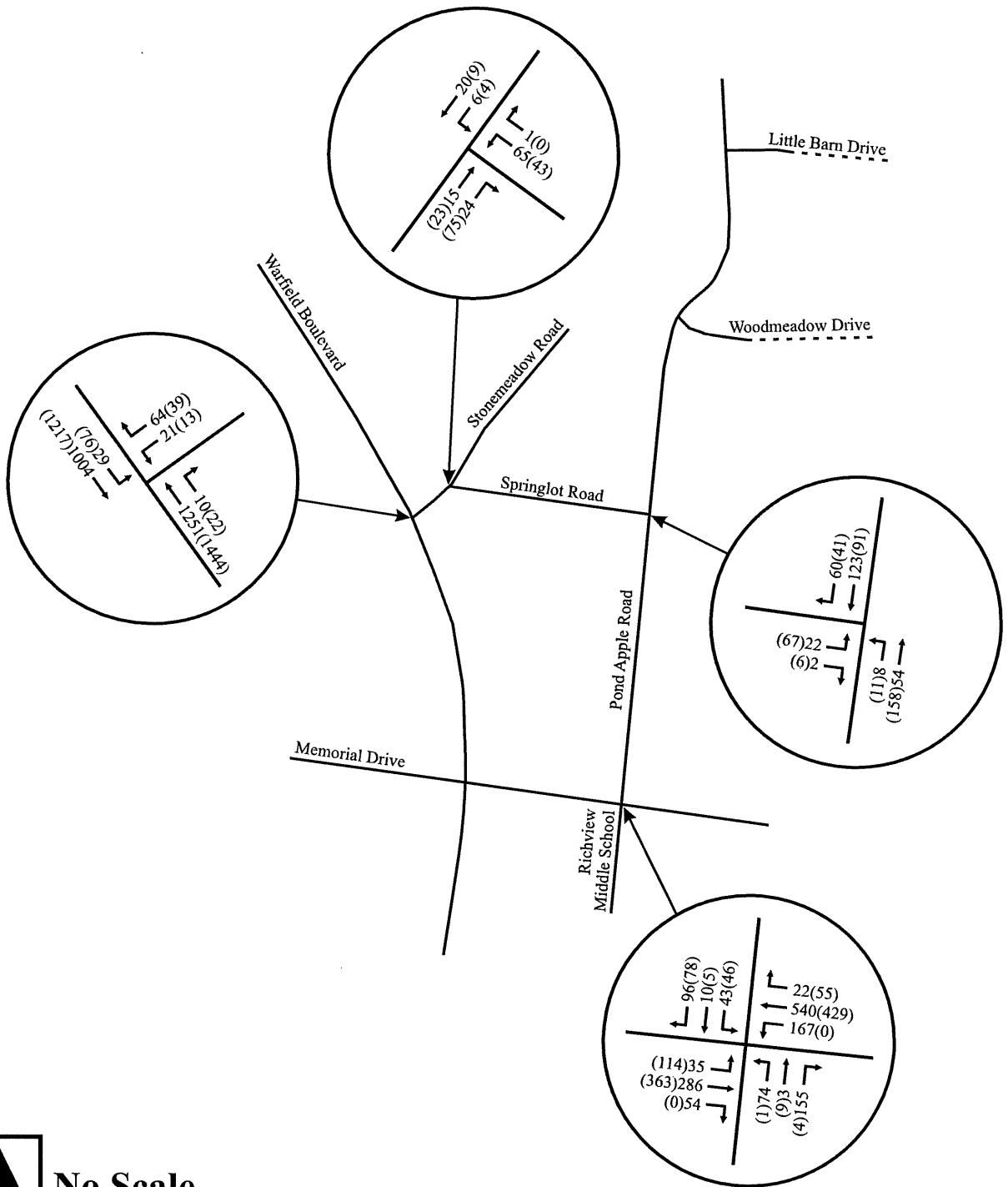
The results of the capacity analyses for the total projected peak hour traffic volumes are shown in [Table 6](#), and [Appendix B](#) includes the capacity analyses worksheets. The capacity analyses indicate that most of the critical turning movements at the intersections within the study area will continue to operate at LOS C or better during both peak hours, and the vehicle queues will remain low. However, the northbound turning movements from Richview Middle School onto Memorial Drive and the southbound turns from Pond Apple Road onto Memorial Drive will operate at LOS F during the AM peak hour, and the vehicle queues will be moderate immediately before the start of the school day. Also, these turning movements will operate at LOS D or LOS E during the PM peak hour, although the vehicle queues will be low.

In addition, the westbound turns from Stonemeadow Road onto Warfield Boulevard will operate at LOS F during both peak hours, and although the vehicle queues will remain low, the average vehicle delays will be significant.

Based on these results, additional analyses were conducted in order to identify how well the southbound turning movements at the intersection of Memorial Drive and Pond Apple Road / Richview Middle School would operate if a separate left turn lane were provided. The results of these analyses indicate that, with this turn lane, the southbound vehicle queues would be reduced significantly during the AM peak hour.

Further analyses were conducted in order to identify how well the westbound turning movements at the intersection of Warfield Boulevard and Stonemeadow Road would operate if the westbound approach were widened to provide separate left and right turn lanes and the southbound approach were modified to restripe the shared left turn/through lane as a dedicated left turn lane. The results of these analyses indicate that, with these modifications, the westbound vehicle queues would be reduced during both peak hours. However, the average vehicle delays for the westbound left turns will be sufficiently high to consider these turning movements infeasible.

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 Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
 (XX) - PM Peak Hour Volumes

Figure 8.
 Total Projected Peak Hour Traffic Volumes
 at the Completion of the Proposed Project

TABLE 6. TOTAL PROJECTED PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	AM PEAK HOUR		PM PEAK HOUR	
		LEVEL OF SERVICE	95 th %-ILE QUEUE	LEVEL OF SERVICE	95 th %-ILE QUEUE
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with existing laneage)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Turning Movements	LOS F	21 veh	LOS E	3 veh
Memorial Drive and Pond Apple Road / Richview Middle School Driveway (with separate southbound left turn lane)	Eastbound Left Turns	LOS A	1 veh	LOS A	1 veh
	Westbound Left Turns	LOS A	1 veh	LOS A	0 veh
	Northbound Left Turns / Thrus	LOS F	13 veh	LOS D	1 veh
	Northbound Right Turns	LOS B	2 veh	LOS B	0 veh
	Southbound Left Turns	LOS F	7 veh	LOS E	2 veh
	Southbound Thrus / Right Turns	LOS E	3 veh	LOS B	1 veh
Pond Apple Road and Springlot Road	Eastbound Left / Right Turns	LOS B	1 veh	LOS B	1 veh
	Northbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh
Stonemeadow Road and Springlot Road	Westbound Left / Right Turns	LOS A	1 veh	LOS A	1 veh
	Southbound Left Turns / Thrus	LOS A	0 veh	LOS A	0 veh

Warfield Boulevard and Stonemeadow Road (with existing laneage)	Westbound Left / Right Turns	LOS F *	5 veh	LOS F *	5 veh
	Southbound Left Turns / Thrus	LOS B	1 veh	LOS B	1 veh
Warfield Boulevard and Stonemeadow Road (with laneage modifications)	Westbound Left Turns	LOS F *	3 veh	LOS F *	2 veh
	Westbound Right Turns	LOS E	2 veh	LOS E	1 veh
	Southbound Left Turns	LOS B	1 veh	LOS B	1 veh

* with significant average vehicle delays

6. CONCLUSIONS AND RECOMMENDATIONS

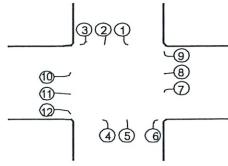
The analyses presented in this study indicate that the following improvements should be considered in conjunction with the planned project:

1. At the intersection of Memorial Drive and Pond Apple Road / Richview Middle School, a separate left turn lane should be provided on the southbound approach of Pond Apple Road. This turn lane should include at least 150 feet of storage and should be designed and constructed according to AASHTO standards and the standards established by the City of Clarksville.
2. At the intersection of Warfield Boulevard and Stonemeadow Road, separate left and right turn lanes should be provided on the westbound approach of Stonemeadow Road. Each of these turn lanes should include at least 100 feet of storage and should be designed and constructed according to AASHTO standards and the standards established by the City of Clarksville.
3. Immediately north of Stonemeadow Road, southbound Warfield Boulevard widens from one travel lane to two travel lanes. Consideration should be given to restriping this cross-section to maintain a single southbound through lane and provide a dedicated southbound left turn lane onto Stonemeadow Road until south of the intersection, at which point the second southbound travel lane would begin.

It is important to note that, recently, the Tennessee Department of Transportation (TDOT) widened Warfield Boulevard north of Dunbar Cave Road. If TDOT plans to widen Warfield Boulevard to a five-lane cross-section from Dunbar Cave Road to Stonemeadow Road, this improvement will include a southbound left turn lane at Stonemeadow Road, and the recommendation to consider restriping will be unnecessary.

**APPENDIX A
EXISTING TRAFFIC COUNTS**

INTERSECTION TRAFFIC VOLUME COUNTS



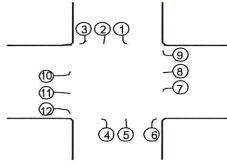
LOCATION: Stonemeadow Road and Springlot Road
 DATE: 10-May-22 Tue
 RECORDER: Bums
 NOTES: unsignalized

LOCATION TIME	S/B Stonemeadow Road			N/B Stonemeadow Road			W/B Springlot Rd			E/B		
	1	2	3	4	5	6	7	8	9	10	11	12
6:00-6:15		2					1					
6:15-6:30					1		1					
6:30-6:45		11			1		1					
6:45-7:00	1	6					2					
7:00-7:15		4			1	1	5					
7:15-7:30		2			3							
7:30-7:45	1	8			4	1	2					
7:45-8:00		3			4		2		1			
8:00-8:15					3		2					
8:15-8:30	4	7			1	2						
8:30-8:45	1	3			4	2	3					
8:45-9:00					3	2						
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11:45-12:00												
12:00-12:15												
12:15-12:30												
12:30-12:45												
12:45-1:00												
1:00-1:15												
1:15-1:30												
1:30-1:45												
1:45-2:00												
2:00-2:15												
2:15-2:30												
2:30-2:45												
2:45-3:00												
3:00-3:15												
3:15-3:30												
3:30-3:45												
3:45-4:00												
4:00-4:15		1			2	1	1		1			
4:15-4:30	2	2			6	2						
4:30-4:45	1	3			6	5	1					
4:45-5:00		2			5	2	1					
5:00-5:15	1	1			4	1	2					
5:15-5:30		1			3	2						
5:30-5:45	1	3			9							
5:45-6:00		1			5				1			
6:00-6:15		4			4	1						
6:15-6:30	1	6			3							
6:30-6:45	2	1			5		1					
6:45-7:00		3			3	3						
TOTAL	15	74			80	25	25		3			
AM PK HR	5	18			12	3	6		1			
PM PK HR	4	8			21	10	4					

27 3
 35 2
 38 13
 41 9
 42 11
 36 5
 45 16
 42 10
 37 5
 32 14
 18 13
 5 5

6
 18
 34
 44 6
 47 12
 41 16
 38 10
 35 9
 35 6
 39 13
 35 7
 37 9
 10
 9
 9
 7:30-8:30 0.70
 4:15-5:15 0.73

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Warfield Boulevard and Stonemeadow Drive
 DATE: 10-May-22 Tue
 RECORDER: Burns
 NOTES: unsignalized

LOCATION	S/B Warfield Boulevard			N/B Warfield Boulevard			W/B Stonemeadow Drive			E/B		
TIME	1	2	3	4	5	6	7	8	9	10	11	12
6:00-6:15		84			125	1			2			
6:15-6:30	1	119			158		1		5			
6:30-6:45	1	123			212		1		6			
6:45-7:00		188			272				4			
7:00-7:15	2	200			213				10			
7:15-7:30	1	189			284		2		7			
7:30-7:45	6	252			302	2	1		7			
7:45-8:00	1	241			286	2	1		5			
8:00-8:15	6	231			265				3			
8:15-8:30	1	217			225		1		5			
8:30-8:45	2	226			261	2			6			
8:45-9:00	4	278			233				3			
9:00-9:15	4	267			229				3			
9:15-9:30	3	255			225				2			
9:30-9:45	3	244			220	1			2			
9:45-10:00	2	232			216	1			1			
10:00-10:15	2	221			212	1			1			
10:15-10:30	3	220			232				1			
10:30-10:45	1	213			267	2	3		5			
10:45-11:00	1	230			242	1	1					
11:00-11:15	5	243			240	1			3			
11:15-11:30	2	218			208	1			5			
11:30-11:45	3	198			287	3	3		5			
11:45-12:00	2	225			242		3		2			
12:00-12:15	3	219			255	2	1		5			
12:15-12:30		266			221		1		2			
12:30-12:45	5	212			246		1		2			
12:45-1:00	4	263			233	2	1		2			
1:00-1:15	4	259			236	2	1		2			
1:15-1:30	4	255			239	2	1		3			
1:30-1:45	4	252			243	1	1		3			
1:45-2:00	4	248			246	1	1		4			
2:00-2:15	4	244			249	1	1		4			
2:15-2:30	5	246			255	1			3			
2:30-2:45	8	272			280	2			1			
2:45-3:00	5	304			308	2			6			
3:00-3:15	8	261			302	1	1		8			
3:15-3:30	7	288			279	1			4			
3:30-3:45	6	260			265	1			3			
3:45-4:00	4	231			250	2			3			
4:00-4:15	3	203			236	2			2			
4:15-4:30	7	279			318		1		6			
4:30-4:45	6	288			307		1		3			
4:45-5:00	4	279			322	1			2			
5:00-5:15	5	268			334	2	1		4			
5:15-5:30	4	271			350				2			
5:30-5:45	6	260			332	1			2			
5:45-6:00	6	215			341	1			1			
6:00-6:15	2	215			301				2			
6:15-6:30	6	196			311	1	1		3			
6:30-6:45	2	161			279		2		2			
6:45-7:00	5	184			234	2	1		5			
TOTAL	187	12,013			13,428	49	34		182			
AM PK HR	14	913			1,137	4	4		22			
PM PK HR	19	1,106			1,313	3	2		11			

1,303 212
 1,516 284
 1,715 343
 1,942 464
 2,014 425
 2,094 483
 2,060 570
 1,987 536
 1,969 505
 1,967 449
 2,003 497
 1,976 518
 1,910 503
 1,844 485
 1,815 470
 1,836 452
 1,859 437
 1,914 456
 1,892 491
 1,900 475
 1,899 492
 1,892 434
 1,948 499
 1,915 474
 1,946 485
 1,965 490
 1,979 466
 2,017 505
 2,016 504
 2,015 504
 2,021 504
 2,080 504
 2,201 503
 2,279 510
 2,348 563
 2,320 625
 2,185 581
 2,050 579
 2,082 535
 2,152 490
 2,270 446
 2,438 611
 2,454 605
 2,450 608
 2,406 614
 2,312 627
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 2,048 564
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 518
 446
 431
 7:15-8:15 0.92
 4:30-5:30 0.98

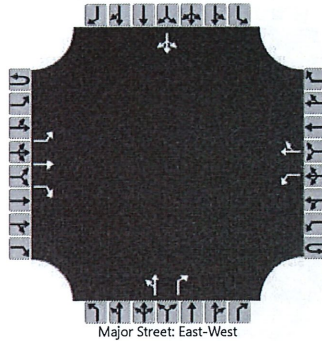
**APPENDIX B
CAPACITY ANALYSES**

EXISTING CONDITIONS

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Memorial/Pond Apple
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Memorial Drive
Analysis Year	2022	North/South Street	Pond Apple Rd/school
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.71
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	11216 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Priority																	
Number of Lanes	0	1	1	1	0	1	1	0		0	1	1		0	1	0	
Configuration		L	T	R		L		TR		LT		R			LTR		
Volume (veh/h)		12	260	49		152	491	10		67	0	141		10	2	29	
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0	
Proportion Time Blocked																	
Percent Grade (%)										0				0			
Right Turn Channelized		No								No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30

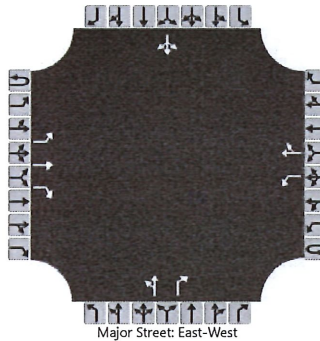
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17				214				94		199				58	
Capacity, c (veh/h)		902				1135				70		684				136	
v/c Ratio		0.02				0.19				1.35		0.29				0.43	
95% Queue Length, Q ₉₅ (veh)		0.1				0.7				7.7		1.2				1.9	
Control Delay (s/veh)		9.1				8.9				326.9		12.4				49.8	
Level of Service (LOS)		A				A				F		B				E	
Approach Delay (s/veh)		0.3				2.1				113.7				49.8			
Approach LOS		A				A				F				E			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Memorial/Pond Apple		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Memorial Drive		
Analysis Year	2022			North/South Street	Pond Apple Rd/school		
Time Analyzed	PM Peak Hour			Peak Hour Factor	0.87		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Existing)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Priority																	
Number of Lanes	0	1	1	1	0	1	1	0		0	1	1		0	1	0	
Configuration		L	T	R		L		TR		LT		R			LTR		
Volume (veh/h)		37	330	0		0	390	17		1	0	4		23	0	31	
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0	
Proportion Time Blocked																	
Percent Grade (%)										0				0			
Right Turn Channelized		No								No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30

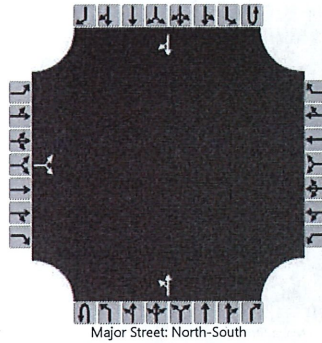
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43				0				1		5			62		
Capacity, c (veh/h)		1104				1190				224		672			370		
v/c Ratio		0.04				0.00				0.01		0.01			0.17		
95% Queue Length, Q ₉₅ (veh)		0.1				0.0				0.0		0.0			0.6		
Control Delay (s/veh)		8.4				8.0				21.1		10.4			16.7		
Level of Service (LOS)		A				A				C		B			C		
Approach Delay (s/veh)		0.8				0.0				12.5				16.7			
Approach LOS		A				A				C				B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Pond Apple/Springlot		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Springlot Road		
Analysis Year	2022			North/South Street	Pond Apple Rd		
Time Analyzed	AM Peak Hour			Peak Hour Factor	0.75		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Existing)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		2		2						7	16				17	4
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

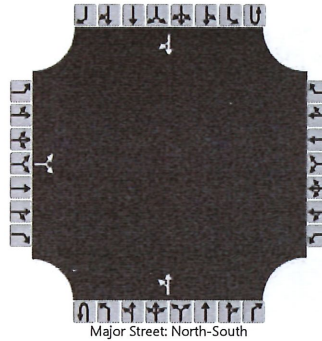
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							9						
Capacity, c (veh/h)			995							1599						
v/c Ratio			0.01							0.01						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			8.6							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	8.6								2.2							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Pond Apple/Springlot
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Springlot Road
Analysis Year	2022	North/South Street	Pond Apple Rd
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.66
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Movement																		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0		
Configuration			LR							LT							TR	
Volume (veh/h)		3		5						10	36					19	4	
Percent Heavy Vehicles (%)		0		0						0								
Proportion Time Blocked																		
Percent Grade (%)		0																
Right Turn Channelized																		
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.40		6.20						4.10							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.50		3.30						2.20							

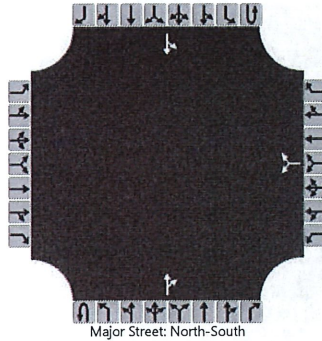
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			12							15							
Capacity, c (veh/h)			976							1589							
v/c Ratio			0.01							0.01							
95% Queue Length, Q ₉₅ (veh)			0.0							0.0							
Control Delay (s/veh)			8.7							7.3							
Level of Service (LOS)			A							A							
Approach Delay (s/veh)		8.7								1.6							
Approach LOS		A															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Stonemeadow/Springlot
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Springlot Road
Analysis Year	2022	North/South Street	Stonemeadow Rd
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.70
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						8		1			14	4		5	18	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.40		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

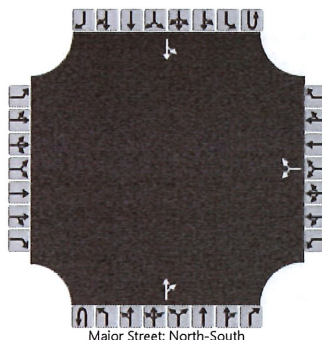
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						13									7	
Capacity, c (veh/h)						956									1602	
v/c Ratio						0.01									0.00	
95% Queue Length, Q ₉₅ (veh)						0.0									0.0	
Control Delay (s/veh)						8.8									7.3	
Level of Service (LOS)						A									A	
Approach Delay (s/veh)					8.8								1.6			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Stonemeadow/Springlot
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Springlot Road
Analysis Year	2022	North/South Street	Stonemeadow Rd
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.73
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Existing)		

Lanes



Vehicle Volumes and Adjustments

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

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

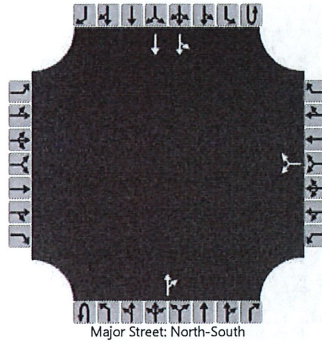
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						7								5		
Capacity, c (veh/h)						951								1579		
v/c Ratio						0.01								0.00		
95% Queue Length, Q ₉₅ (veh)						0.0								0.0		
Control Delay (s/veh)						8.8								7.3		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					8.8								2.4			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Warfield/Stonemeadow
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Stonemeadow Rd
Analysis Year	2022	North/South Street	Warfield Blvd
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Existing)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	2	0
Configuration							LR					TR		LT	T	
Volume (veh/h)						4		22			1137	4		14	913	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.2							4.1	
Critical Headway (sec)						6.80		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

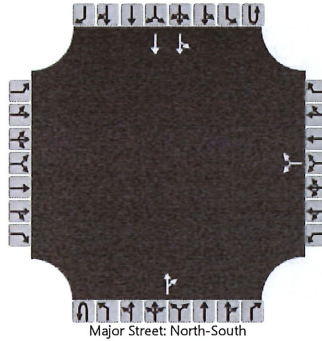
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							28								15	
Capacity, c (veh/h)							165								568	
v/c Ratio							0.17								0.03	
95% Queue Length, Q ₉₅ (veh)							0.6								0.1	
Control Delay (s/veh)							31.2								11.5	
Level of Service (LOS)							D								B	
Approach Delay (s/veh)					31.2								0.5			
Approach LOS					D											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Warfield/Stonemeadow		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Stonemeadow Rd		
Analysis Year	2022			North/South Street	Warfield Blvd		
Time Analyzed	PM Peak Hour			Peak Hour Factor	0.98		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Existing)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	2	0
Configuration							LR					TR		LT	T	
Volume (veh/h)						2		11			1313	4		27	1106	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.2							4.1	
Critical Headway (sec)						6.80		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

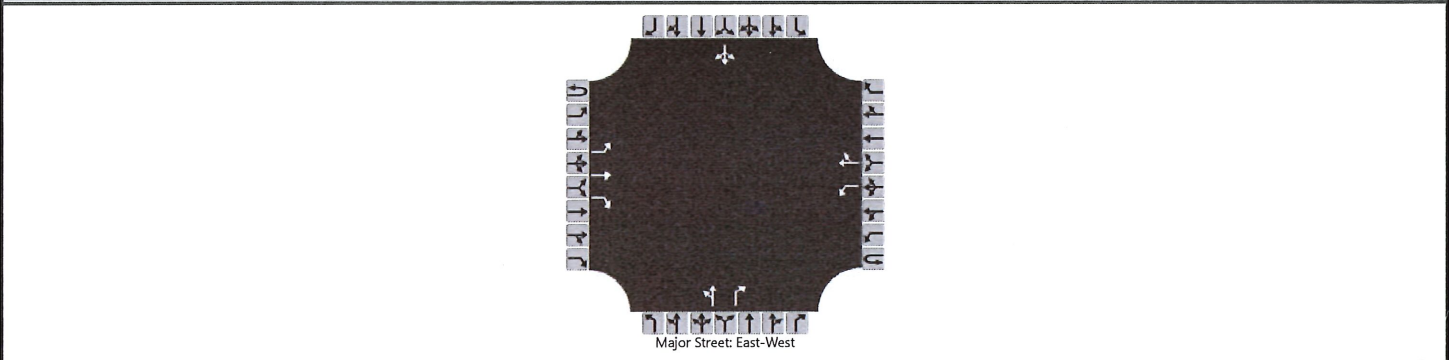
Flow Rate, v (veh/h)							13								28	
Capacity, c (veh/h)							130								519	
v/c Ratio							0.10								0.05	
95% Queue Length, Q ₉₅ (veh)							0.3								0.2	
Control Delay (s/veh)							35.7								12.3	
Level of Service (LOS)							E								B	
Approach Delay (s/veh)					35.7								1.1			
Approach LOS					E											

BACKGROUND CONDITIONS

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Memorial/Pond Apple		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Memorial Drive		
Analysis Year	2027			North/South Street	Pond Apple Rd/school		
Time Analyzed	AM Peak Hour			Peak Hour Factor	0.71		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Back)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Priority																	
Number of Lanes	0	1	1	1	0	1	1	0		0	1	1		0	1	0	
Configuration		L	T	R		L		TR		LT		R			LTR		
Volume (veh/h)		13	286	54		167	540	11		74	0	155		11	2	32	
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0	
Proportion Time Blocked																	
Percent Grade (%)										0				0			
Right Turn Channelized		No								No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30

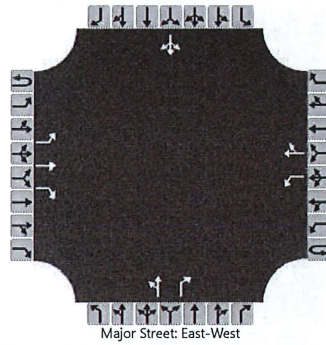
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		18				235				104		218				63	
Capacity, c (veh/h)		849				1094				52		652				101	
v/c Ratio		0.02				0.21				2.01		0.33				0.63	
95% Queue Length, Q ₉₅ (veh)		0.1				0.8				10.3		1.5				3.1	
Control Delay (s/veh)		9.3				9.2				640.3		13.3				87.2	
Level of Service (LOS)		A				A				F		B				F	
Approach Delay (s/veh)		0.3				2.1				215.9				87.2			
Approach LOS		A				A				F				F			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Memorial/Pond Apple
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Memorial Drive
Analysis Year	2027	North/South Street	Pond Apple Rd/school
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.87
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	11216 (Back)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Priority																	
Number of Lanes	0	1	1	1	0	1	1	0		0	1	1		0	1	0	
Configuration		L	T	R		L		TR		LT		R			LTR		
Volume (veh/h)		41	363	0		0	429	19		1	0	4		25	0	34	
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0	
Proportion Time Blocked																	
Percent Grade (%)										0				0			
Right Turn Channelized		No								No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30

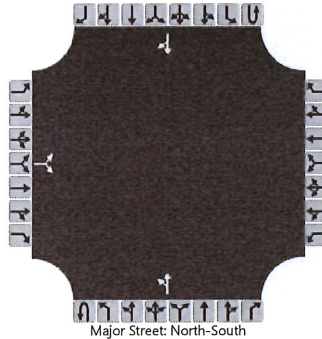
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		47				0				1		5				68	
Capacity, c (veh/h)		1061				1153				191		640				329	
v/c Ratio		0.04				0.00				0.01		0.01				0.21	
95% Queue Length, Q ₉₅ (veh)		0.1				0.0				0.0		0.0				0.8	
Control Delay (s/veh)		8.6				8.1				24.0		10.7				18.8	
Level of Service (LOS)		A				A				C		B				C	
Approach Delay (s/veh)		0.9				0.0				13.3				18.8			
Approach LOS		A				A				C				B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Pond Apple/Springlot		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Springlot Road		
Analysis Year	2027			North/South Street	Pond Apple Rd		
Time Analyzed	AM Peak Hour			Peak Hour Factor	0.75		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Back)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Movement																		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0		
Configuration			LR							LT						TR		
Volume (veh/h)		2		2						8	18					19	4	
Percent Heavy Vehicles (%)		0		0						0								
Proportion Time Blocked																		
Percent Grade (%)		0																
Right Turn Channelized																		
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.40		6.20						4.10							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.50		3.30						2.20							

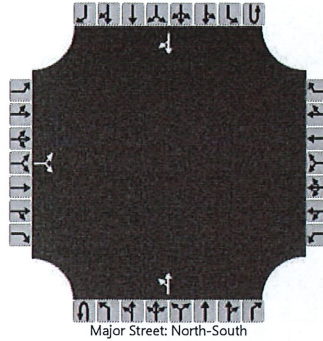
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							11							
Capacity, c (veh/h)			987							1595							
v/c Ratio			0.01							0.01							
95% Queue Length, Q ₉₅ (veh)			0.0							0.0							
Control Delay (s/veh)			8.7							7.3							
Level of Service (LOS)			A							A							
Approach Delay (s/veh)		8.7								2.3							
Approach LOS		A															

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG			Intersection	Pond Apple/Springlot		
Agency/Co.	FTG			Jurisdiction	Clarksville, TN		
Date Performed	May 2022			East/West Street	Springlot Road		
Analysis Year	2027			North/South Street	Pond Apple Rd		
Time Analyzed	PM Peak Hour			Peak Hour Factor	0.66		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	11216 (Back)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		6						11	40				21	4
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

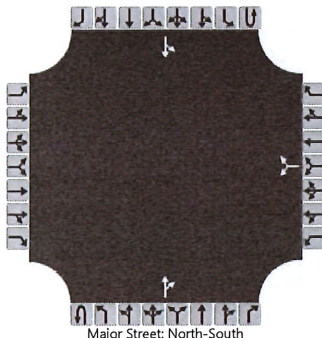
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			14							17						
Capacity, c (veh/h)			975							1585						
v/c Ratio			0.01							0.01						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			8.7							7.3						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	8.7								1.6							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Stonemeadow/Springlot
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Springlot Road
Analysis Year	2027	North/South Street	Stonemeadow Rd
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.70
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Back)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						9		1			15	4		6	20	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

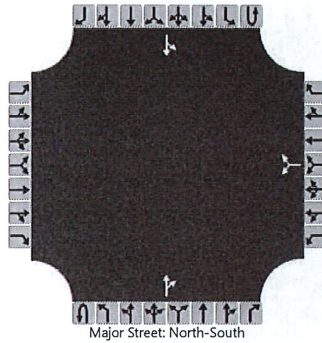
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						14								9		
Capacity, c (veh/h)						945								1600		
v/c Ratio						0.02								0.01		
95% Queue Length, Q ₉₅ (veh)						0.0								0.0		
Control Delay (s/veh)						8.9								7.3		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					8.9								1.7			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FTG	Intersection	Stonemeadow/Springlot				
Agency/Co.	FTG	Jurisdiction	Clarksville, TN				
Date Performed	May 2022	East/West Street	Springlot Road				
Analysis Year	2027	North/South Street	Stonemeadow Rd				
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.73				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	11216 (Back)						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR			LT	
Volume (veh/h)						6		0			23	11			4	9
Percent Heavy Vehicles (%)						0		0							0	
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.40		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

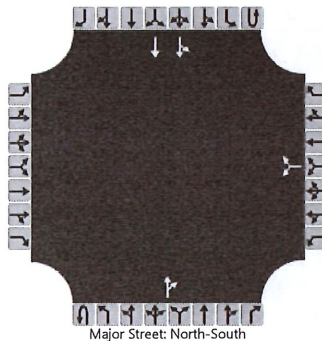
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						8									5	
Capacity, c (veh/h)						946									1574	
v/c Ratio						0.01									0.00	
95% Queue Length, Q ₉₅ (veh)						0.0									0.0	
Control Delay (s/veh)						8.8									7.3	
Level of Service (LOS)						A									A	
Approach Delay (s/veh)					8.8								2.3			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Warfield/Stonemeadow
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Stonemeadow Rd
Analysis Year	2027	North/South Street	Warfield Blvd
Time Analyzed	AM Peak Hour	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Back)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	2	0
Configuration							LR					TR		LT	T	
Volume (veh/h)						5		24			1251	4		15	1004	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.2							4.1	
Critical Headway (sec)						6.80		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

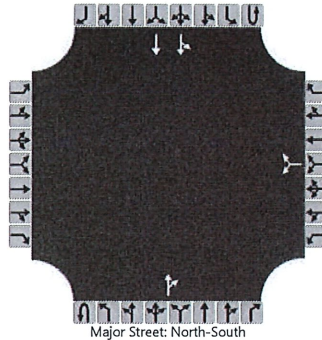
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32								16		
Capacity, c (veh/h)						129								510		
v/c Ratio						0.24								0.03		
95% Queue Length, Q ₉₅ (veh)						0.9								0.1		
Control Delay (s/veh)						41.6								12.3		
Level of Service (LOS)						E								B		
Approach Delay (s/veh)					41.6								0.7			
Approach LOS					E											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	FTG	Intersection	Warfield/Stonemeadow
Agency/Co.	FTG	Jurisdiction	Clarksville, TN
Date Performed	May 2022	East/West Street	Stonemeadow Rd
Analysis Year	2027	North/South Street	Warfield Blvd
Time Analyzed	PM Peak Hour	Peak Hour Factor	0.98
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	11216 (Back)		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	2	0
Configuration							LR					TR		LT	T	
Volume (veh/h)						3		12			1444	4		30	1217	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.2							4.1	
Critical Headway (sec)						6.80		6.20							4.10	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.50		3.30							2.20	

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15									31	
Capacity, c (veh/h)						89									462	
v/c Ratio						0.17									0.07	
95% Queue Length, Q ₉₅ (veh)						0.6									0.2	
Control Delay (s/veh)						53.4									13.3	
Level of Service (LOS)						F									B	
Approach Delay (s/veh)						53.4									1.6	
Approach LOS						F										

TOTAL PROJECTED CONDITIONS

TRIP GENERATION CALCULATIONS - Single-family Homes

The following calculations are based on the data compiled for ITE Land Use Code 210.

Average Daily Traffic

$$T = 9.43 (X)$$

$$T = 9.43 (308)$$

$$T = 2,904 \text{ vehicles}$$

$$\text{Enter} = 0.50 (2,904) = 1,452 \text{ vehicles}$$

$$\text{Exit} = 0.50 (2,904) = 1,452 \text{ vehicles}$$

AM traffic during peak hour of adjacent street

$$T = 0.70 (X)$$

$$T = 0.70 (308)$$

$$T = 216 \text{ vehicles}$$

$$\text{Enter} = 0.26 (216) = 56 \text{ vehicles}$$

$$\text{Exit} = 0.74 (216) = 160 \text{ vehicles}$$

PM traffic during peak hour of adjacent street

$$T = 0.94 (X)$$

$$T = 0.94 (308)$$

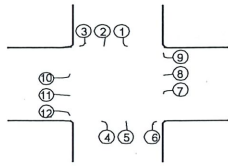
$$T = 289 \text{ vehicles}$$

$$\text{Enter} = 0.63 (289) = 182 \text{ vehicles}$$

$$\text{Exit} = 0.37 (289) = 107 \text{ vehicles}$$

**APPENDIX C
TRIP GENERATION**

INTERSECTION TRAFFIC VOLUME COUNTS



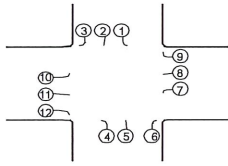
LOCATION: Memorial Drive and Pond Apple Road / Richview Middle School
 DATE: 4-May-22 Wed
 RECORDER: Burns
 NOTES: unsignalized

LOCATION TIME	S/B Pond Apple Road			N/B Middle School Dwy			W/B Memorial Drive			E/B Memorial Drive		
	1	2	3	4	5	6	7	8	9	10	11	12
6:00-6:15			1					32			28	
6:15-6:30	1		2				4	27	3	4	37	1
6:30-6:45	5		4	2		2	15	65		1	29	4
6:45-7:00	2	1	4	23		18	31	114	3	1	65	16
7:00-7:15	2	1	5	22		77	87	137		3	68	27
7:15-7:30	5		6	21		44	32	132	2	5	70	6
7:30-7:45	1		14	1		2	2	108	5	3	57	
7:45-8:00	3		5		1	2	1	112	2	5	71	
8:00-8:15	6		8			1		112	3	6	58	
8:15-8:30	3		7					101	4	7	45	
8:30-8:45	2		7			1		91	3	3	38	
8:45-9:00	2		5	1				88	5	6	59	1
9:00-9:15	2		6	1				81	4	6	57	1
9:15-9:30	2		7	1				74	3	6	55	1
9:30-9:45	1		9					68	2	5	54	
9:45-10:00	1		10					61	1	5	52	
10:00-10:15	1		11					54		5	50	
10:15-10:30	2		8					50	1	8	60	
10:30-10:45	3		11					52	3	1	47	
10:45-11:00			10					53	5	13	44	
11:00-11:15	3		11					57	2	11	49	
11:15-11:30			3					58	1	8	56	
11:30-11:45	2		7	1				49	1	6	65	1
11:45-12:00	7		10					66	2	10	64	
12:00-12:15	3		7					54	3	13	54	
12:15-12:30	1		3					50	3	7	56	
12:30-12:45	1		4				1	54	3	6	55	3
12:45-1:00	1		5				2	58	3	5	55	7
1:00-1:15	2		5				3	61	2	5	54	10
1:15-1:30	2		6				4	65	2	4	54	14
1:30-1:45	2		7				5	69	2	3	53	17
1:45-2:00	4		12	1	1		2	92	4	6	74	6
2:00-2:15	3		8	1				83	1	4	81	
2:15-2:30	1		7	36		62	18	72	4	9	79	34
2:30-2:45	3		11	10	1	19	2	95	3	3	106	2
2:45-3:00	9		12	5	1	9		88	5	6	83	
3:00-3:15	5		12	3		3		121	8	13	89	1
3:15-3:30	2		13	4		3		81	9	8	82	
3:30-3:45	3		13	4		4		82	7	9	82	
3:45-4:00	3		12	4	1	4		83	5	11	83	
4:00-4:15	4		12	4	1	5		84	3	12	83	
4:15-4:30	8		12	1		2		88	3	7	96	
4:30-4:45	5		5			1		99	9	11	73	
4:45-5:00	3		5					87		12	67	
5:00-5:15	7		9			1		116	5	7	94	
5:15-5:30	2		11		1	1	2	83	3	8	74	
5:30-5:45	3		12			3		103	3	10	85	
5:45-6:00	7		8					79	2	6	71	
6:00-6:15	2		7				1	80	4	11	57	
6:15-6:30	1		7					50	4	7	57	
6:30-6:45	2		3			1	1	47	1	1	50	
6:45-7:00			6					48	4	10	42	
TOTAL	145	2	405	146	7	265	213	4,014	160	342	3,267	152
AM PK HR	10	2	29	67		141	152	491	10	12	260	49
PM PK HR	23		31	1		4		390	17	37	330	

545 61
 913 79
 1,157 127
1,223 278
 1,147 **429**
 912 323
 756 193
 708 202
 673 194
 637 167
 619 145
 613 167
 576 158
 539 149
 519 139
 497 130
 492 121
 504 129
 501 117
 516 125
 550 133
 551 126
 545 132
 540 159
 517 134
 525 120
 556 127
 587 136
 653 142
 692 151
 863 158
 960 202
 976 181
1,050 **322**
 930 255
 879 218
 867 255
 820 202
 835 204
 834 206
 802 208
833 217
 801 203
 817 174
 816 **239**
 739 185
 680 219
 567 173
 504 162
 126
 106
 110

7:15-8:15 0.71
 4:15-5:15 0.87

INTERSECTION TRAFFIC VOLUME COUNTS



LOCATION: Pond Apple Road and Springplot Road
 DATE: 3-May-22 Tue
 RECORDER: Burns
 NOTES: unsignalized

LOCATION TIME	S/B Pond Apple Road			N/B Pond Apple Road			W/B			E/B Springplot Rd		
	1	2	3	4	5	6	7	8	9	10	11	12
6:00-6:15												
6:15-6:30		3	1		3							
6:30-6:45		2	2									2
6:45-7:00		4	1	1								3
7:00-7:15		7	1	2	2							1
7:15-7:30		9	1		1							
7:30-7:45		2	1		1							2
7:45-8:00		5	1		3							4
8:00-8:15		3		1	4							
8:15-8:30		2		3	4					1		1
8:30-8:45		5	2	2	3							1
8:45-9:00		7	2	1	5					1		
9:00-9:15												
9:15-9:30												
9:30-9:45												
9:45-10:00												
10:00-10:15												
10:15-10:30												
10:30-10:45												
10:45-11:00												
11:00-11:15												
11:15-11:30												
11:30-11:45												
11:45-12:00												
12:00-12:15												
12:15-12:30												
12:30-12:45												
12:45-1:00												
1:00-1:15												
1:15-1:30												
1:30-1:45												
1:45-2:00												
2:00-2:15												
2:15-2:30												
2:30-2:45												
2:45-3:00												
3:00-3:15												
3:15-3:30												
3:30-3:45												
3:45-4:00												
4:00-4:15		4		1	2					1		2
4:15-4:30		3		2	11					1		1
4:30-4:45		10	1	1	6							3
4:45-5:00		3		1	4							1
5:00-5:15		4		2	7					2		2
5:15-5:30		10	1	3	14							1
5:30-5:45		1	1	2	7					1		
5:45-6:00		4	2	3	8							2
6:00-6:15		3	1	3	8							2
6:15-6:30		4			4							2
6:30-6:45		2			5							
6:45-7:00			1		8							1
TOTAL		97	19	28	110					7		31
AM PK HR		17	4	7	16					2		2
PM PK HR		19	4	10	36					3		5

22
 35 7
 39 6
 39 9
 43 13
 38 11
 38 6
 45 13
 48 8
 11
 13
 16

10
 28
 49
 58 10
 65 18
 76 21
 67 9
 77 17
 77 29
 58 12
 53 19
 44 17
 10
 7
 10
 8:00-9:00 0.75
 5:00-6:00 0.66