



# USE ON REVIEW REPORT

► **FILE #:** 7-B-21-UR

**AGENDA ITEM #:** 29

**AGENDA DATE:** 7/8/2021

► **APPLICANT:** MBCOMMONS, LLC

OWNER(S): Karen Speegle

TAX ID NUMBER: 105 057 & 058

[View map on KGIS](#)

JURISDICTION: County Commission District 6

STREET ADDRESS: 0 Middlebrook Pk.

► **LOCATION:** Southwest side of Middlebrook Pike, northwest of N. Cedar Bluff Road

► **APPX. SIZE OF TRACT:** 5.29 acres

SECTOR PLAN: Northwest County

GROWTH POLICY PLAN: Planned Growth Area

ACCESSIBILITY: Middlebrook Pike is a major arterial with a landscaped median and 74-ft pavement width within a right-of-way that varies in width from approximately 94 ft to approximately 138 ft at this location.

UTILITIES: Water Source: West Knox Utility District

Sewer Source: West Knox Utility District

WATERSHED: Turkey Creek

► **ZONING:** OB (Office, Medical, and Related Services)

► **EXISTING LAND USE:** AgForVac (Agriculture/Forestry/Vacant Land)

► **PROPOSED USE:** Multi-family Development

23.86

HISTORY OF ZONING: The property was rezoned from A (Agricultural) to OB (Office, Medical and Related Services) in June 2021 (Cases 4-I-21-RZ and 4-B-21-SP).

SURROUNDING LAND USE AND ZONING: North: Rivers Edge West School - A (Agricultural) and OA (Office Park)

South: Single family residence and cell phone tower - A (Agricultural)

East: Dollar General Market - CA (General Business)

West: Vacant land - A (Agricultural)

NEIGHBORHOOD CONTEXT: The subject property is in a neighborhood with several low density residential subdivisions in the PR zone. In addition, this neighborhood has a mix of agriculture, and commercial uses in the A and CA zones.

## STAFF RECOMMENDATION:

► **Approve the development plan for a multi-family development with up to 120 dwelling units and a maximum height of approximately 52 feet, subject to 8 conditions.**

1) Connecting the development to sanitary sewer, as well as meeting other applicable requirements of the Knox County Health Department.

2) Implementation of the street and intersection improvements and driveway recommendations outlined in the

Middlebrook Commons Transportation Impact Study prepared by AJAX Engineering, as last revised on June 15, 2021, and approved by the Tennessee Department of Transportation, Knox County Department of Engineering and Public Works, and Planning Commission staff.

3) Obtaining all necessary approvals from the Tennessee Department of Transportation (TDOT) for the location of the driveway and the required improvements to Middlebrook Pike.

4) Installation of all sidewalks as shown on the revised development plan and providing a pedestrian connection from the apartment complex to Middlebrook Pike as reviewed and approved by Knox County Engineering and Public Works staff. Sidewalks shall meet all applicable requirements of the Americans with Disabilities Act (ADA) and the Knox County Department of Engineering and Public Works. A bond shall be provided to the Knox County Department of Engineering and Public Works by the developer in an amount sufficient to guarantee the installation of the sidewalks.

5) Installation of all landscaping and privacy fencing as shown on the landscape plan within six months of issuance of the first occupancy permit for the project, or posting a bond with the Knox County Department of Engineering and Public Works, to guarantee such installation.

6) Meeting all applicable requirements of the Knox County Department of Engineering and Public Works.

7) If security gates are proposed, obtaining approval from the Knox County Fire Marshal and Knox County Engineering and Public Works.

8) Meeting all applicable requirements of the Knox County Zoning Ordinance, including but not limited to Section 3.90 (Signs, billboards, and other advertising structures).

With the conditions noted above, this request meets all requirements for approval in the OB (Office, Medical, and Related Services) zoning district, as well as the criteria for approval of a use on review.

#### **COMMENTS:**

This proposal is for a 120-unit multi-family apartment complex on 5.29 acres and a density of 23.86 du/ac. The development will include three 4-story buildings and a 1-story amenity building with a pool. The property was recently rezoned from A (Agricultural) to OB (Office, Medical and Related), and the Northwest County Sector Plan was amended from LDR (Low Density Residential) to O (Office). The O land use designation does not have a maximum residential density and the OB zone allows consideration of up to 24 du/ac.

Access to the site is from Middlebrook Pike and is a shared driveway with the Dollar General Market store. The applicant proposes three different options (scenarios) for improvements to Middlebrook Pike to improve access to the site (see sheet C3.3). Options 1 and 2 propose a new median opening, with option 1 providing full access and option 2 providing left-in only access. Option 3 does not include a new median opening but does include an eastbound right turn lane. Middlebrook Pike is a TDOT facility so any improvements to the road must meet their standards and obtain their approval for permitting. To date, TDOT has only agreed to allow Option #3 because the new median opening does not meet the minimum separation standard between median openings.

#### **DEVELOPMENT STANDARDS FOR USES PERMITTED ON REVIEW (ARTICLE 4.10 – SECTION 2)**

The planning commission, in the exercise of its administrative judgment, shall be guided by adopted plans and policies, including the general plan and the following general standards:

##### **1) THE PROPOSED USE IS CONSISTENT WITH THE ADOPTED PLANS AND POLICIES, INCLUDING THE GENERAL PLAN AND SECTOR PLAN.**

A. The Northwest County Sector Plan designates this property as O (Office), which does not specifically address residential densities. The proposed apartment development at a density of 23.86 du/ac is consistent with the O land use classification.

B. The site is located within the Planned Growth Area of the Knoxville-Knox County-Farragut Growth Policy Plan map.

##### **2) THE USE IS IN HARMONY WITH THE GENERAL PURPOSE AND INTENT OF THE ZONING ORDINANCE.**

A. The OB (Office, Medical and Related Services) zone is intended to provide areas for professional and business offices and related activities that require separate buildings and building groups surrounded by landscaped yards and open areas. The intent herein is to provide centralized, compact locations for business offices, clinics, medical, and dental offices near residential neighborhoods.

B. The OB zone allows consideration of the residential uses per the requirements of the RB (General Residential) zone. The RB zone allows consideration of densities up to 24 du/ac, however, developments over 12 du/ac must obtain Use on Review approval.

C. The RB zone only provides a maximum height for houses and duplexes, not for other uses such as

apartment buildings. The height of multi-dwelling structures approved as a Use on Review shall be determined by the planning commission. The proposed 4-story structures with a height of 52-FT to the midpoint of the roof are appropriate for this location.

D. For buildings more than 3-stories in height, 1-FT of additional side yard must be provided on each side of the main building for each additional 2-FT in excess of 36-FT in height. For this proposal, the side setback has been increased from 12-FT to 20-FT for the 4-story structures.

3) THE USE IS COMPATIBLE WITH THE CHARACTER OF THE NEIGHBORHOOD WHERE IT IS PROPOSED, AND WITH THE SIZE AND LOCATION OF BUILDINGS IN THE VICINITY.

A. The surrounding uses include a church to the north, Dollar General Market to the east, a residential house and telecommunication tower on a large lot to the south, and a vacant lot between the subject site and a residential neighborhood to the west.

B. There is no specific character to the area where this development is located. The subject site is located at a higher elevation than the adjacent church and Dollar General Market that are located between it and Middlebrook Pike. The structures will only be partially visible from the public road.

C. The 4-story building height is only a concern for the residential structure to the south. The existing house will be approximately 105-FT away from the nearest structure. The ground floor of the building is approximately 10-FT lower than the residential lot and the applicant has proposed an 8-FT tall privacy fence on top of the retaining wall to provide additional screening (see that landscape plan, sheet C8.1). as shown on the landscape plan adjacent to the residential lot for additional screening. The residential lot also has some trees between the house and the proposed development. The other apartment building that is also adjacent to the residential lot will have evergreen trees along the property line. This structure is closer to the 170-FT monopole telecommunication tower.

4) THE USE WILL NOT SIGNIFICANTLY INJURE THE VALUE OF ADJACENT PROPERTY.

A. With the inclusion of landscape screening and privacy fencing, there is no indication that a multi-family apartment complex will significantly injure the value of adjacent properties.

5) THE USE WILL NOT DRAW ADDITIONAL TRAFFIC THROUGH RESIDENTIAL AREAS.

A. The property has direct access to Middlebrook Pike and will not draw additional traffic through residential areas.

6) THE NATURE OF DEVELOPMENT IN THE SURROUNDING AREA IS NOT SUCH AS TO POSE A POTENTIAL HAZARD TO THE PROPOSED USE OR TO CREATE AN UNDESIRABLE ENVIRONMENT FOR THE PROPOSED USE.

A. There are no known uses in the area that could be a potential hazard or create an undesirable environment for the proposed apartment complex.

ESTIMATED TRAFFIC IMPACT: 1124 (average daily vehicle trips)

Average Daily Vehicle Trips are computed using national average trip rates reported in the latest edition of "Trip Generation," published by the Institute of Transportation Engineers. Average Daily Vehicle Trips represent the total number of trips that a particular land use can be expected to generate during a 24-hour day (Monday through Friday), with a "trip" counted each time a vehicle enters or exits a proposed development.

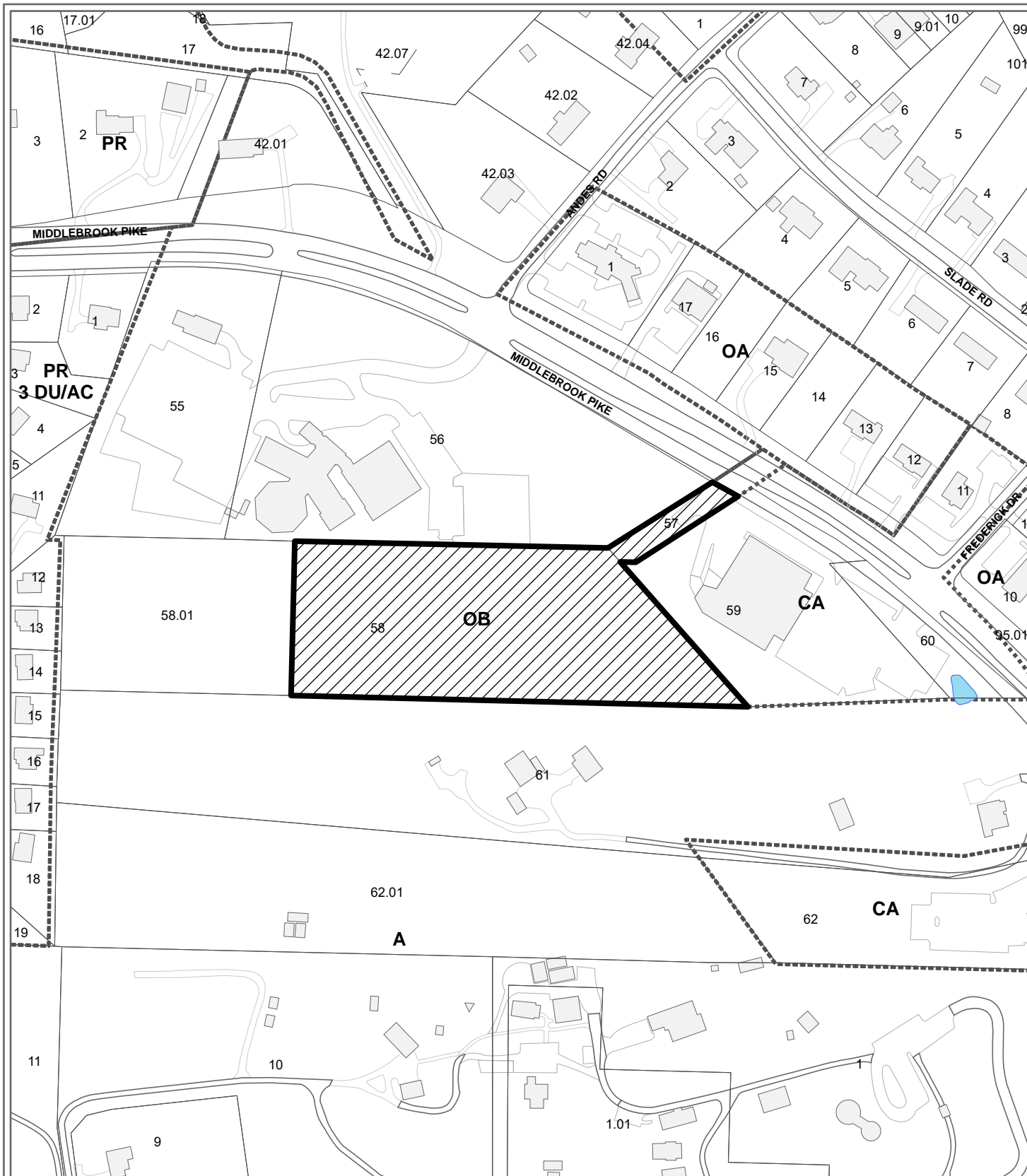
ESTIMATED STUDENT YIELD: 11 (public school children, grades K-12)

Schools affected by this proposal: Cedar Bluff Elementary, Cedar Bluff Middle, and Hardin Valley Academy.

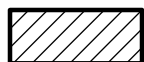
- Potential new school population is estimated using locally-derived data on public school student yield generated by new housing.
- Students are assigned to schools based on current attendance zones as determined by Knox County Schools. Students may request transfers to different zones, and zone boundaries are subject to change.
- Estimates presume full build-out of the proposed development. Build-out is subject to market forces, and timing varies widely from proposal to proposal.
- Student yields from new development do not reflect a net addition of children in schools. Additions occur incrementally over the build-out period. New students may replace current population that ages through the system or moves from the attendance zone.

The Planning Commission's approval or denial of this request is final, unless the action is appealed to the Knox County Board of Zoning Appeals. The date of the Knox County Board of Zoning Appeals hearing will depend on when the appeal application is filed. Appellants have 30 days to appeal a Planning Commission decision in the County.





**7-B-21-UR  
USE ON REVIEW**



Multi-family Development in OB (Office, Medical, and Related Services)

Original Print Date: 6/9/2021  
Knoxville - Knoxville Planning Commission \* City / County Building \* Knoxville, TN 37902

Revised:

Petitioner: MBCOMMONS, LLC

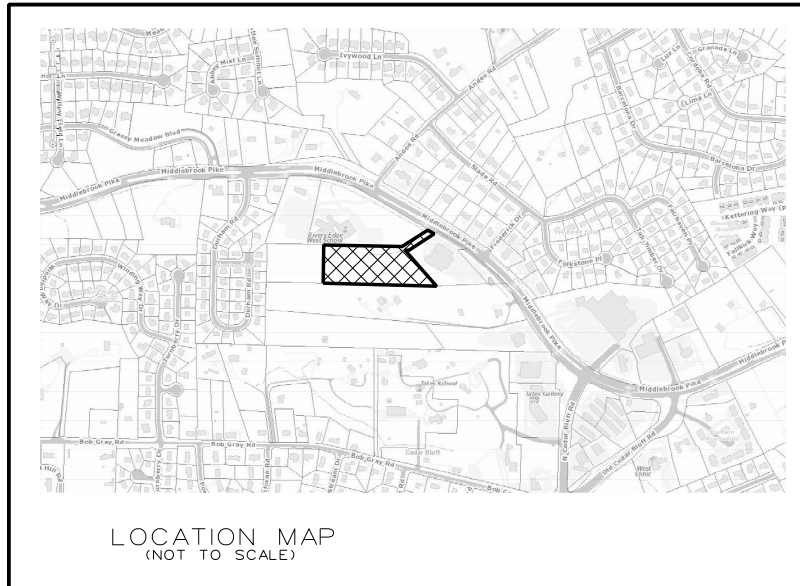
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Jurisdiction: County

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Feet



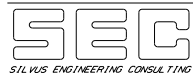
# CONCEPT PLAN FOR MIDDLEBROOK COMMONS 7-B-21-UR



CONTENTS	
SCALE	TITLE
--	C0.0 COVER
50	C1.1 PROJECT OVERVIEW
30	C3.1 LAYOUT
30	C3.2 ADDRESSING
--	C3.3 LAYOUT - MIDDLEBROOK DETAIL
30	C4.1 GRADING OVERVIEW
30	C8.1 LANDSCAPING
10	C8.2 ENTRY SIGN
--	C9.1 DETAILS
--	A1.1 CLUBHOUSE/OFFICE ELEVATION
--	A1.2 RESIDENTIAL BUILDING ELEVATION

**MB COMMONS, LLC**

PREPARED BY:



1815 NANTASKET ROAD  
KNOXVILLE, TN 37922  
NATHAN SILVUS, P.E.  
(865) 414-0524

LOCATION MAP  
(NOT TO SCALE)

PARCEL IDS: 105-058 105-057 DIST: 6 AREA: 5.03 ACRES  
MIDDLEBROOK PIKE, KNOXVILLE, TN 37931  
GOVERNED BY KNOX COUNTY TENNESSEE  
(NOT WITHIN LIMITS OF CITY OF KNOXVILLE OR TOWN OF FARRAGUT)

PRINTED: 05-24-2021

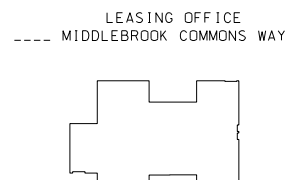
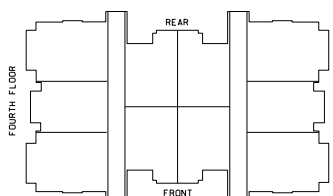
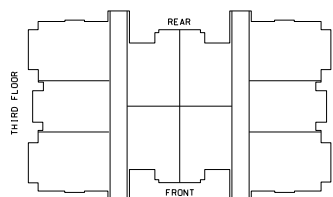
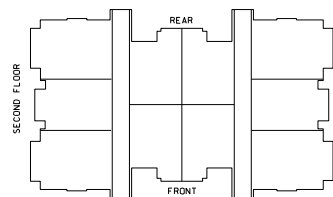
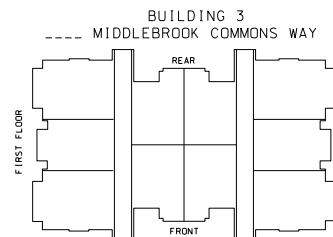
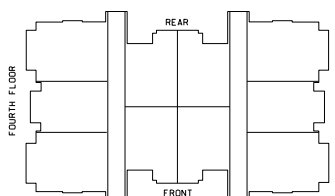
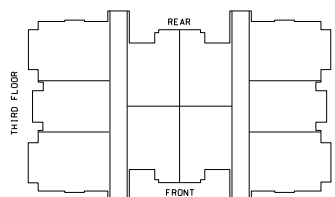
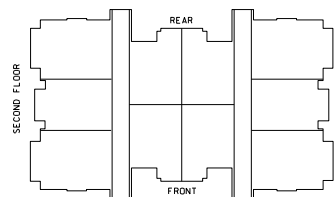
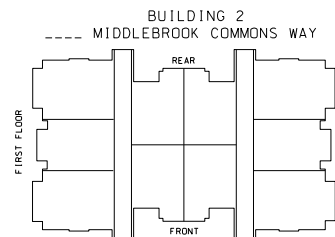
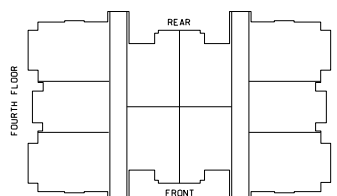
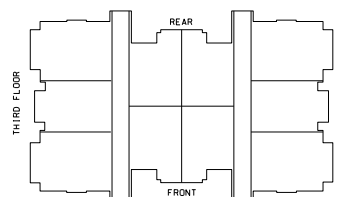
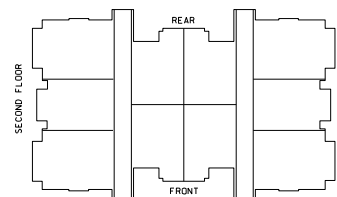
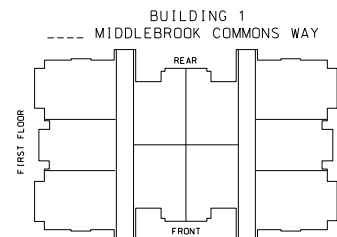
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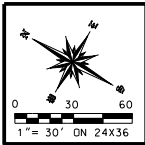




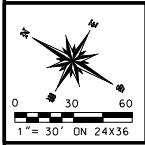
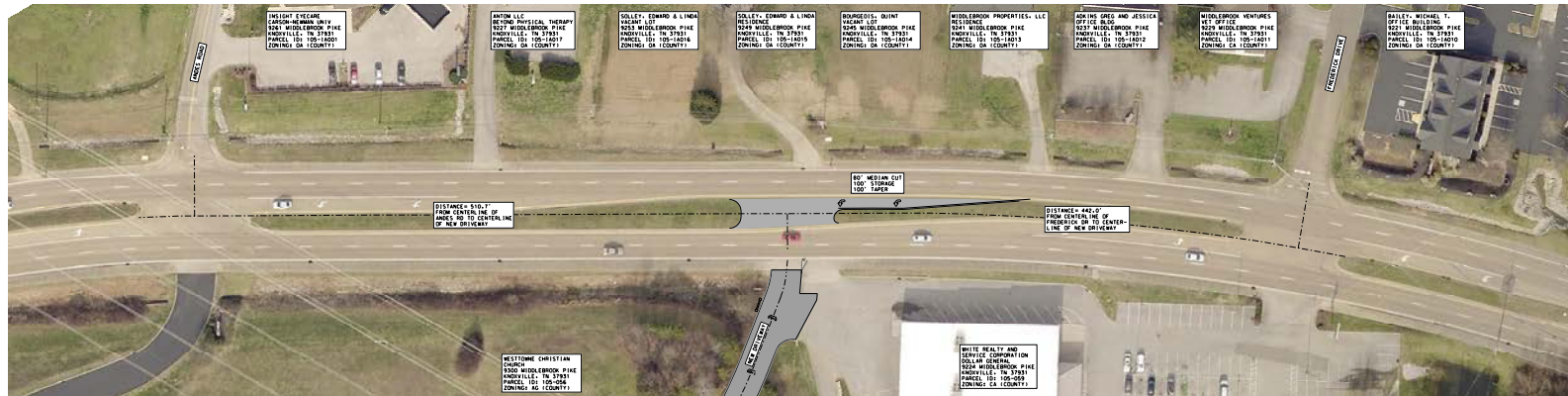


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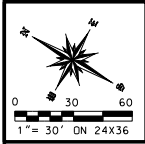
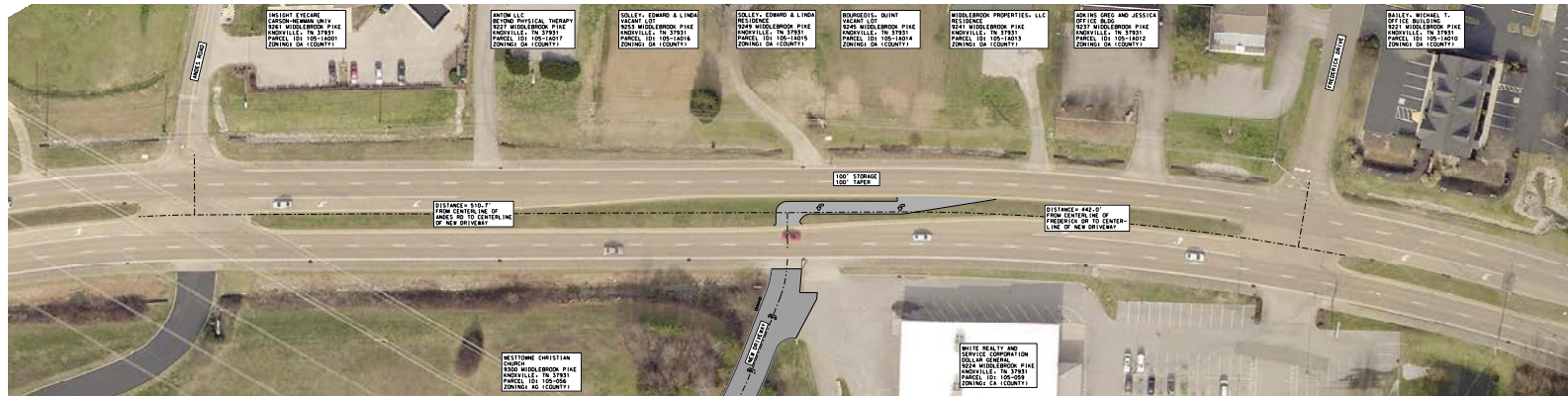
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		COPYRIGHT 2021, EQUUS ENGINEERING CONSULTANTS, LLC					
<b>MB COMMONS, LLC</b> 1815 NANTUCKET ROAD KNOXVILLE, TN 37922 865-414-0524		<b>MB COMMONS, LLC</b> 1815 NANTUCKET ROAD KNOXVILLE, TN 37922 865-414-0524					
<b>ENGINEER:</b>  S&C ALL-USE ENGINEERING CONSULTANTS NATHAN SELVIE, P.E. 1815 NANTUCKET ROAD KNOXVILLE, TN 37922 865-414-0524		<b>DATE:</b> 05-24-2021					
<b>DRY:</b> 05-24-2021		<b>DATE:</b> 05-24-2021					
<b>ADDRESSING</b> <b>C3.2</b>							



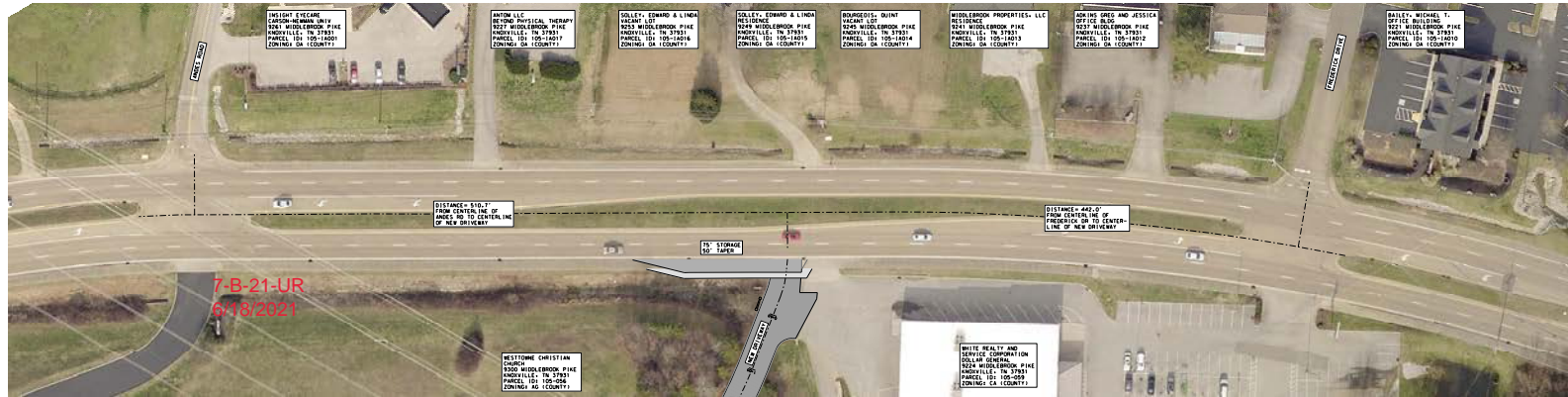
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FULL ACCESS WITH  
LEFT TURN DECEL  
PREFERRED



SCENARIO #2  
LEFT TURN DECEL  
IN J-CUT



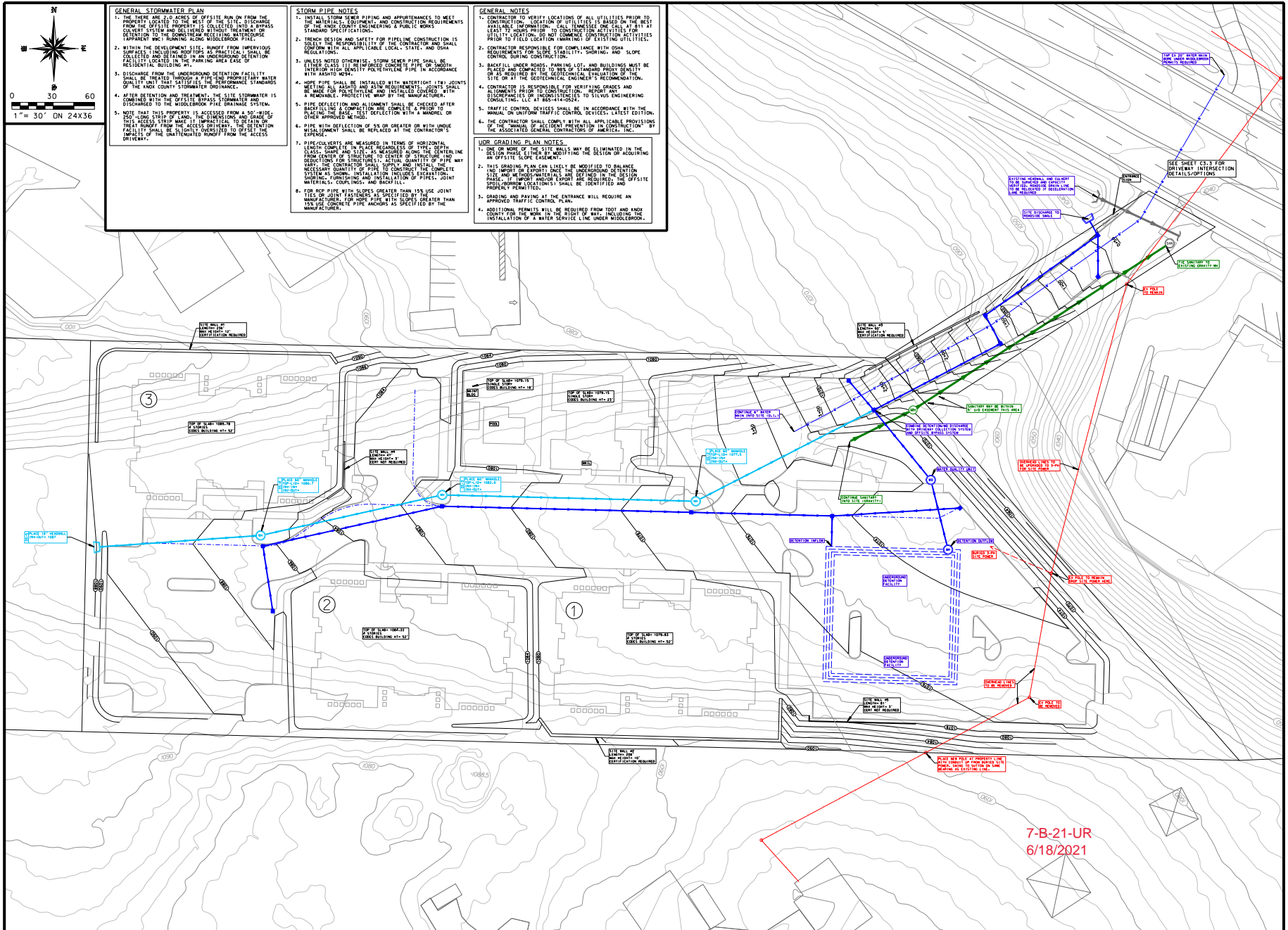
SCENARIO #3  
RIGHT-IN RIGHT-OUT  
WITH DECEL LANE



NO.	REVISIONS	DATE

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421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 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### GENERAL STORMWATER PLAN

- THE FLOW AND VOLUME OF OFFSITE RUNOFF FROM THE PROPERTY LOCATED TO THE WEST OF THE SITE, DISCHARGE FROM THE OFFSITE PROPERTY IS COLLECTED INTO A PERMANENT CONCRETE DRAINAGE DITCH, WITHOUT THE NECESSITY OF DETENTION TO THE DOWNSTREAM RECEIVING WATERBODY (STORMWATER AND SURFING ALONG MIDDLEBROOK PIKE).
- WITHIN THE DEVELOPMENT SITE, RUNOFF FROM IMPERVIOUS COLLECTOR AND DETAINED IN AN UNDERGROUND DETENTION FACILITY LOCATED IN THE PARKING AREA NEAR BUILDING 1.
- DISCHARGE FROM THE UNDERGROUND DETENTION FACILITY SHALL BE TREATED THROUGH A PIPE THE PROPRIETARY WATER QUALITY ONLY THAT SATISFIES THE PERFORMANCE STANDARDS OF THE KNOX COUNTY STORMWATER ORDINANCE.
- WATER DETENTION AND TREATMENT, THE EXISTING STORMWATER IS CONVEYED BY THE OFFSITE BYPASS STORMWATER AND DISCHARGED TO THE MIDDLEBROOK PIKE DRAINAGE SYSTEM.
- NOTE THAT THIS PROPERTY IS ACCESSED FROM A 50'-WIDE, 200'-LONG STRIP OF LAND, THE STORMWATER AND GRADE OF THIS ACCESS STRIP MAKE IT IMPRACTICAL TO GRADE OR PAVED RUNOFF FROM THE ACCESS STRIP, THE DETENTION IMPACTS OF THE UNATTENDED RUNOFF FROM THE ACCESS DRIVEWAY.

### STORM PIPE NOTES

- INSTALL STORM SEWER PIPING AND APPURTENANCES TO MEET THE MATERIALS, EQUIPMENT, AND CONSTRUCTION REQUIREMENTS OF THE KNOX COUNTY ENGINEERING & PUBLIC WORKS STANDARD SPECIFICATIONS.
- TRENCH DESIGN AND SAFETY FOR PIPING CONSTRUCTION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND FEMA REGULATIONS.
- UNLESS NOTED OTHERWISE, STORM SEWER PIPE SHALL BE EITHER CLASS III REINFORCED CONCRETE PIPE OR SANDWICH WITH LOW-DENSITY POLYETHYLENE PIPE, IN ACCORDANCE WITH THE KNOX COUNTY ENGINEERING & PUBLIC WORKS STANDARD SPECIFICATIONS.
- PIPE SHALL BE INSTALLED WITH WATER TIGHT (TWO) JOINTS BEING USED FOR EACH TRENCH. JOINTS SHALL BE REMOVABLE, PROTECTIVE, AND IN THE MANUFACTURER'S RECOMMENDED LOCATION.
- PIPE DEFLECTION AND ALIGNMENT SHALL BE CHECKED AFTER BACKFILLING. THE BASIC TEST DEFLECTION WITH A MANDREL ON OTHER APPROVED METHODS.
- PIPE WITH DEFLECTION OF 5% OR GREATER OR WITH UNIFORM DEFLECTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- PIPE/CULVERTS ARE MEASURED IN TERMS OF HORIZONTAL LENGTH. CONVEYANCE IS BASED ON THE CENTERLINE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE. THE CONTRACTOR SHALL SUPPLY AND INSTALL THE NECESSARY QUANTITY OF PIPE TO CONSTRUCT THE COMPLETE SYSTEM AS SHOWN. INSTALLATION INCLUDES EXCAVATION, SHORING, FURNISHING AND INSTALLATION OF PIPES, JOINT MATERIALS, COUPLINGS, AND BACKFILL.
- FOR RCP PIPE WITH SLOPES GREATER THAN 1% USE JOINT TIES OR JOINT FASTENERS AS SPECIFIED BY THE MANUFACTURER. FOR HDPE PIPE WITH SLOPES GREATER THAN 1% USE CONCRETE PIPE JACKING AS SPECIFIED BY THE MANUFACTURER.

### GENERAL NOTES

- CONTRACTOR TO VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. LOCATION OF UTILITIES IS BASED ON THE BEST AVAILABLE INFORMATION. CALL TOWNSHIP ONE CALL AT 811 AT LEAST 14 DAYS PRIOR TO ANY CONSTRUCTION ACTIVITIES FOR PRIOR TO FIELD LOCATION AND/OR EXISTING UTILITIES.
- CONTRACTOR RESPONSIBLE FOR COMPLIANCE WITH OSHA REQUIREMENTS FOR SLOPE STABILITY, SHIELDING, AND SLOPE CONTROL DURING CONSTRUCTION.
- BACKFILL UNDER ROADS, PARKING LOT, AND BUILDINGS MUST BE PLACED AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY WITH LOW-DENSITY POLYETHYLENE PIPE, IN ACCORDANCE WITH THE KNOX COUNTY ENGINEERING & PUBLIC WORKS STANDARD SPECIFICATIONS.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING GRADES AND ALIGNMENT PRIOR TO CONSTRUCTION. SEE CIVIL ENGINEERING CONSULTING, LLC AT 865-414-0524.
- TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE MANUAL OF PRACTICE PRESENTED IN CONSTRUCTION BY THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.

### TOP GRADING PLAN NOTES

- ONE OR MORE OF THE SITE WALLS MAY BE ELIMINATED IN THE DESIGN PHASE. EROSION MODIFYING THE DESIGN OR ACQUIRING AN OFFSITE SLOPE EASEMENT.
- THIS GRADING PLAN CAN LARGELY BE MODIFIED TO BALANCE THE IMPACT OF EXISTING UTILITIES AND THE DESIGN OF THE SITE. IF IMPROVEMENTS ARE REQUIRED, THE OFFSITE SLOPE EASEMENT LOCATION(S) SHALL BE IDENTIFIED AND PROPERTY PERMITTED.
- GRADING AND PAVING AT THE ENTRANCE WILL REQUIRE AN APPROVED TRAFFIC CONTROL PLAN.
- ADDITIONAL PERMITS WILL BE REQUIRED FROM TOWNSHIP AND KNOX COUNTY FOR THE WORK IN THE RIGHT OF WAY, INCLUDING THE INSTALLATION OF A WATER SERVICE LINE UNDER MIDDLEBROOK PIKE.

NO.	REVISIONS:	BY	DATE

THIS DRAWING IS PART OF A CONCEPTUAL DESIGN AND SHOULD BE USED IN CONJUNCTION WITH THE WRITTEN TEXT. COPYRIGHT 2021, STANLEY ENGINEERING CONSULTING, LLC.

**MIDDLEBROOK COMMONS**

**MB COMMONS, LLC**

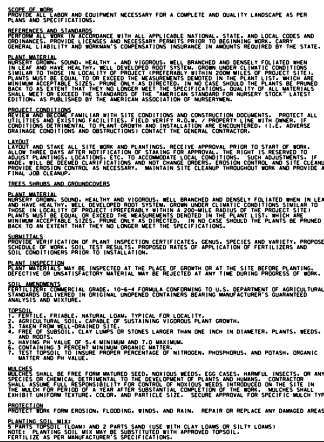
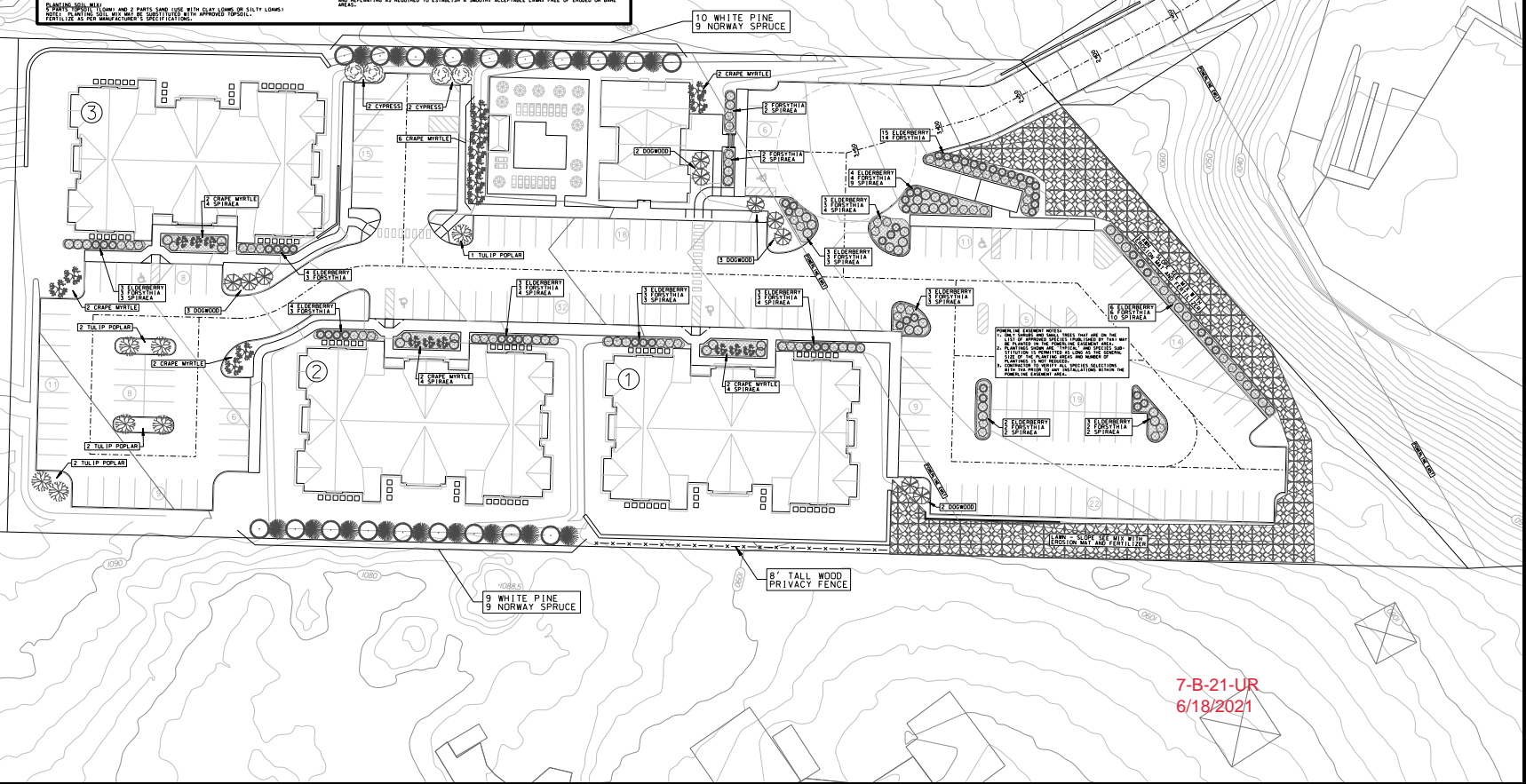
1815 NANTUCKET ROAD  
KNOXVILLE, TN 37922  
865.414.0524

**SEC**

STANLEY ENGINEERING CONSULTING  
NATHAN SILVER P.E.  
JIM NANTUCKET ROAD  
KNOXVILLE, TN 37922  
865.414.0524

**APC USE ON REVIEW**  
**7-B-21-UR**

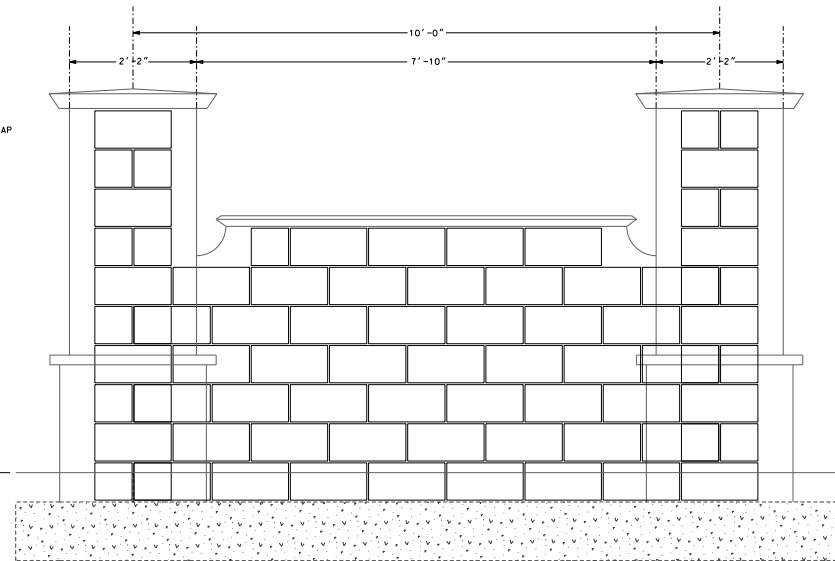
DATE: 05-24-2021  
SHEET: **C4.1**  
GRADING  
STORM  
UTILITIES

[illegible][illegible][illegible]

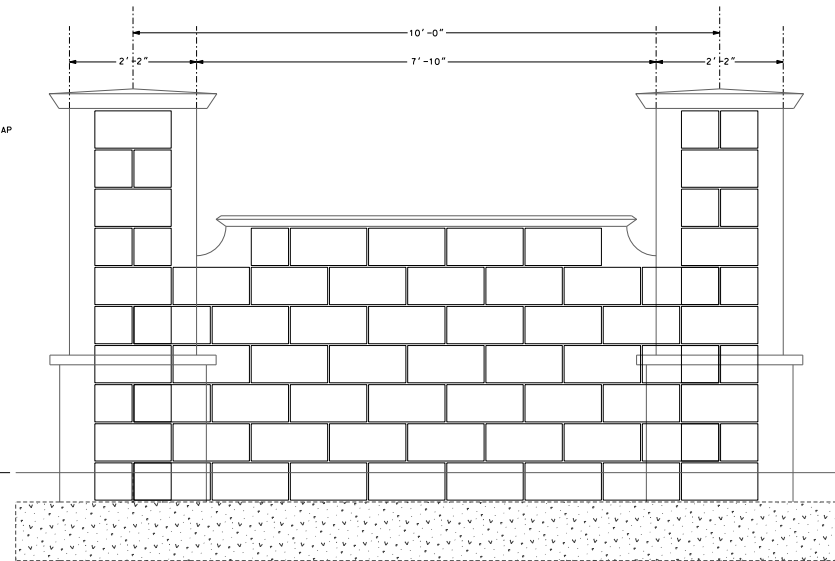
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6/18/2021



### BLOCK PATTERN



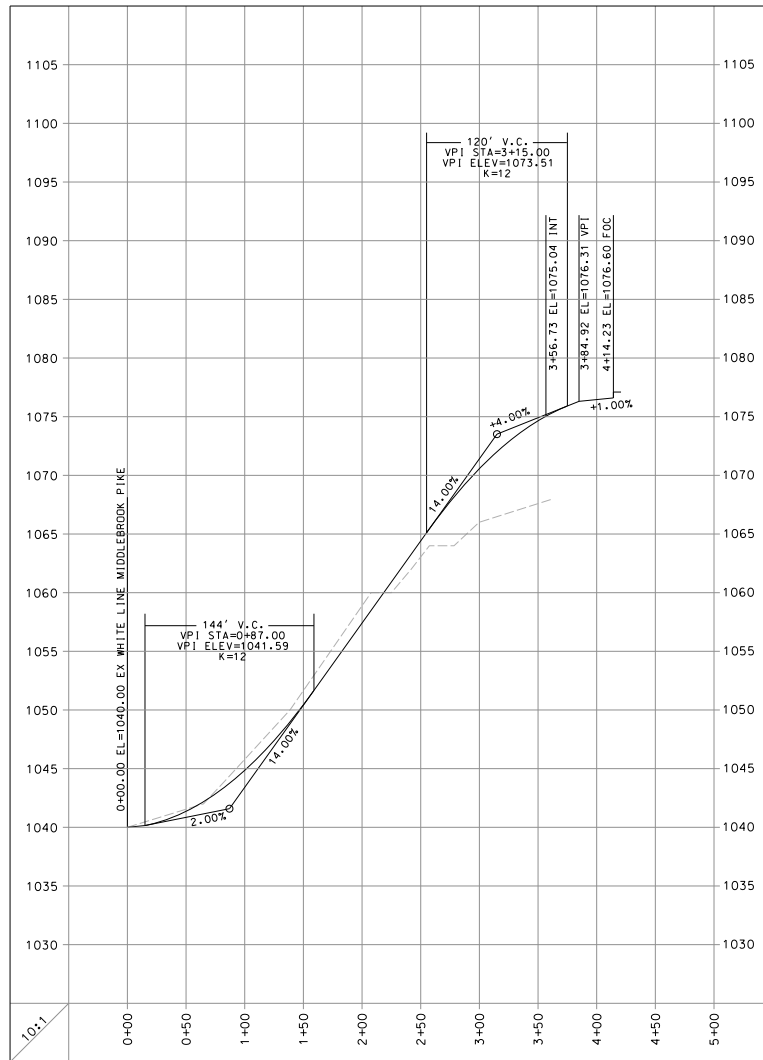
### BLOCK PATTERN



**1" = 1.0'**

[illegible]

# ACCESS DRIVEWAY



7-B-21-UR  
6/18/2021

NO.	REVISIONS	BY	DATE

<b>MIDDLEBROOK COMMONS</b> 0 MIDDLEBROOK PINE, KNOXVILLE, TN 37921 PARCEL 101, 102-051, 105-058 AREA 3.0 AC	<b>PROJECT:</b> <b>MB COMMONS, LLC</b> 1815 HANTSSET ROAD KNOXVILLE, TN 37922 865.414.0524
---	--

<b>ENGINEER:</b> <b>SEC</b> SALVUS ENGINEERING CONSULTING NATHAN SILVER P.E. 1815 HANTSSET ROAD KNOXVILLE, TN 37922 865.414.0524	<b>DATE:</b> 05-24-2021
--	----------------------------

<b>APPROVED FOR CONSTRUCTION:</b> 7-B-21-UR	<b>DATE:</b> 05-24-2021
--	----------------------------

<b>C9.1</b> DETAILS
------------------------



1 NORTH ELEVATION- CLUB HOUSE  
A4.3 NOT TO SCALE



2 SOUTH ELEVATION - CLUB HOUSE  
A4.3 NOT TO SCALE

7-B-21-UR  
6/18/2021

NO.	REVISIONS	BY	DATE

## MIDDLEBROOK COMMONS

THIS DRAWING IS PART OF A CONSTRUCTION SET.  
IT SHOULD BE USED IN CONJUNCTION WITH THE WRITTEN TEXT.  
COPYRIGHT 2021, SILVER ENGINEERING CONSULTING, LLC  
AREA 3.1.0 AC

PROJECT:

OWNER:

**MB COMMONS, LLC**  
1315 HANYSSET ROAD  
KNOXVILLE, TN 37922  
865.414.0524

ENGINEER:

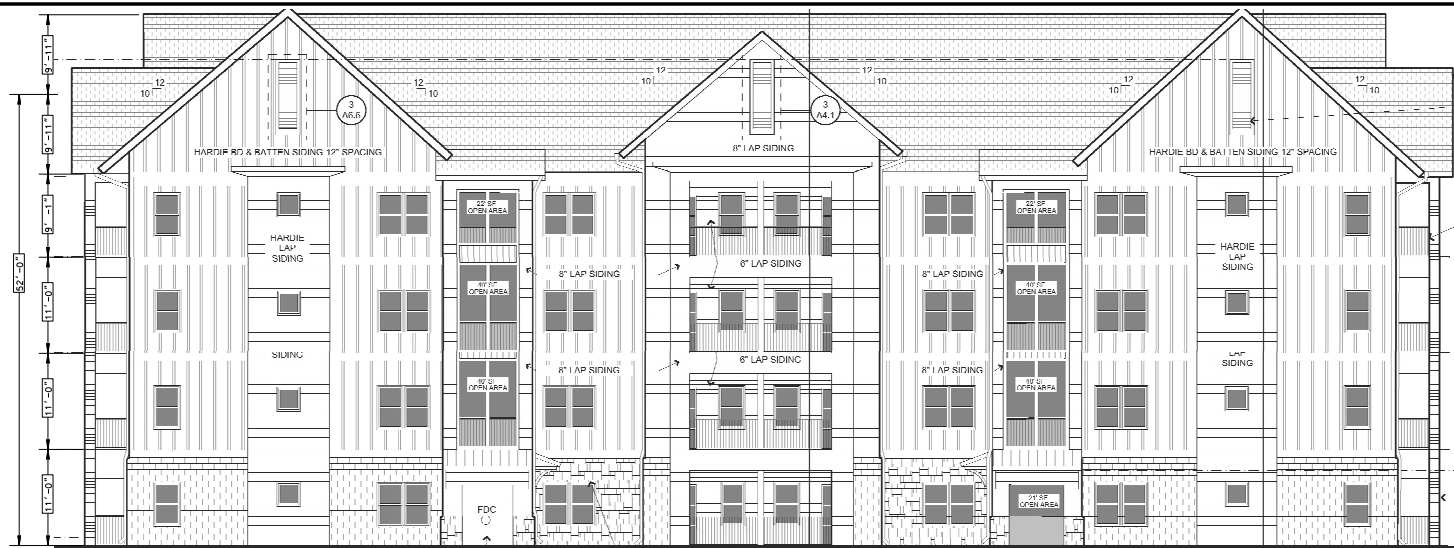
**SEEC**  
SILVER ENGINEERING CONSULTING  
NATHAN SILVER P.E.  
100 HANYSSET ROAD  
KNOXVILLE, TN 37922  
614.624.1234

**7-B-21-UR**  
APC USE ON REVIEW

DATE: 05-24-2021

SHEET:

**A1.1**  
CLUBHOUSE/  
OFFICE  
ELEVATION



FRONT ELEVATION - RESIDENTIAL BUILDING  
NOT TO SCALE

SIDE ELEVATION - RESIDENTIAL BUILDING  
NOT TO SCALE



7-B-21-UR  
6/18/2021

NO.	REVISIONS	BY	DATE

**MIDDLEBROOK COMMONS**  
THIS DRAWING IS PART OF A CONSTRUCTION SET  
AND SHOULD BE USED IN CONJUNCTION WITH THE WRITTEN TEXT  
COPYRIGHT 2021, SALVO ENGINEERING CONSULTING, LLC

**PROJECT:**  
**OWNER:**  
**MB COMMONS, LLC**  
4315 HANTSETT ROAD  
KNOXVILLE, TN 37922  
865.414.0524

**ENGINEER:**  
**SEEC**  
SALVO ENGINEERING CONSULTING  
NATHAN SILVER P.E.  
100 HANTSETT ROAD  
KNOXVILLE, TN 37922  
865.414.0524

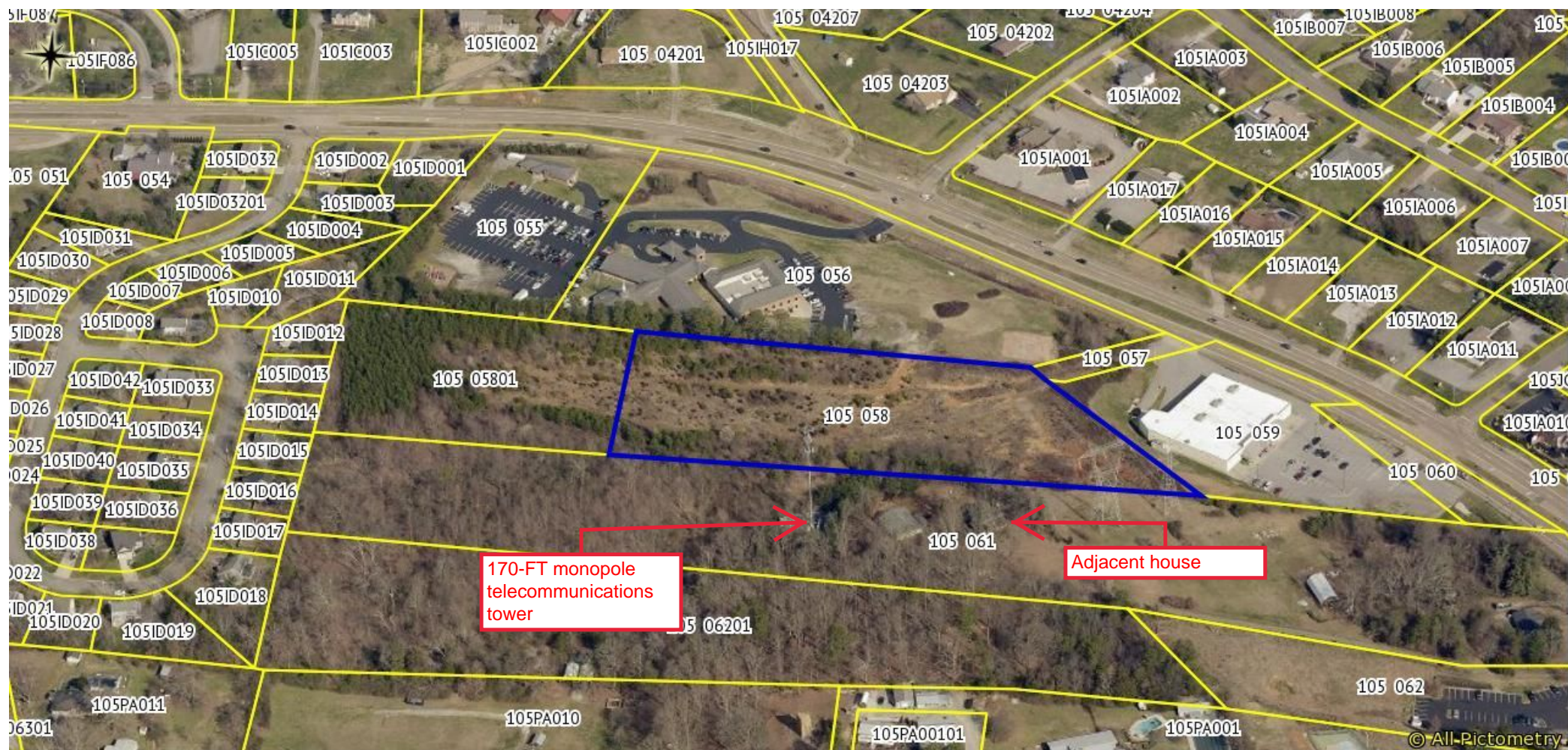
**APC USE ON REVIEW**  
**7-B-21-UR**

**DATE:** 05-24-2021

**Sheet:**  
**A1.2**  
RESIDENTIAL  
BUILDING  
ELEVATION



**7-B-21-UR**





# 7-B-21-UR



02/15/2020

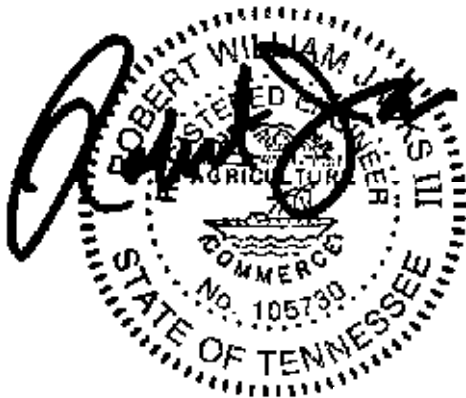


# Transportation Impact Study Middlebrook Commons Knox County, Tennessee



Revised June 2021

Prepared for:  
MB Commons, LLC  
1815 Nantasket Road  
Knoxville, TN 37922



6/15/2021

7-B-21-UR  
Revised: 6/15/2021



## EXECUTIVE SUMMARY

### **Preface:**

MB Commons, LLC is proposing a multi-family residential development on the south side of Middlebrook Pike between Frederick Drive and Andes Road in West Knox County, TN. This proposed residential development is “Middlebrook Commons” and will consist of either a minimum of 90 or a maximum of 120 multi-family apartments on 5.03± acres. This development is anticipated to be fully built-out and occupied by 2023 and will have one entrance on the south side of Middlebrook Pike. This study's primary purpose is to determine and evaluate the potential impacts of the development on the adjacent transportation system with two analyses: the development constructed with 90 and 120 apartments. The study includes a review of the primary access roads and intersections and is a Level 2 study established by Knoxville/Knox County Planning. Recommendations and mitigation measures will be offered if transportation operations have been projected to be below recognized engineering standards.

### **Study Results:**

The findings of this study include the following:

- Middlebrook Commons with 90 multi-family apartment units is calculated to generate 868 trips on an average weekday at full build-out and occupancy. Of these trips, 49 will occur during the AM peak hour and 71 trips in the PM peak hour in the year 2023. With 120 multi-family apartment units, the development is calculated to generate 1,125 trips on an average weekday. Of these trips, 64 will occur during the AM peak hour and 91 trips in the PM peak hour in the year 2023.
- This development will have one entrance on Middlebrook Pike, a 4-lane divided highway. The entrance will be on the south side of Middlebrook Pike, adjacent and shared with an existing rear entrance for a Dollar General Market. The entrance is calculated in the 2023 projected conditions to operate with minimal vehicle delays. TDOT has stated that this proposed development would not be allowed to have a center median opening on Middlebrook Pike, requiring a right-turn-in/right-turn-out-only entrance and thus requiring entering and exiting traffic to make U-turns at existing upstream and downstream intersections. These existing intersections are currently unsignalized and operate with high vehicle delays on the minor approaches in the AM and PM peak hours. One of these intersections, Middlebrook Pike at Andes Road/Church Driveway, currently meets Warrant #2 and #3 for a traffic signal, and the other intersection,



Middlebrook Pike at Frederick Drive/Dollar General Driveway (Main), currently meets Warrant #3 for a traffic signal. The Middlebrook Pike at Andes Road/Church Driveway is deemed more critical in this study to be considered for traffic signalization due to its higher northbound and southbound traffic volumes, vehicle delays, and vehicle queues.

- The addition of Middlebrook Commons with either 90 or 120 apartment units will not appreciably increase vehicle delays at the adjacent existing upstream and downstream unsignalized intersections. The difference in projected vehicle delays between constructing 90 or 120 apartment units at the adjacent existing unsignalized intersections is negligible.
- As discussed in the report, it is recommended that TDOT re-examine and allow a center median opening for the proposed entrance on Middlebrook Pike. The potential median opening location is feasible based on the minimum spacing required, available median width, sight distance and offers several operational benefits. At a minimum, it is recommended that TDOT allow a center median opening to allow westbound left-turns into the development.

#### **Recommendations:**

The following recommendations are offered based on the study analyses. The recommendations are offered to minimize the traffic impacts of the proposed development on the adjacent road system while attempting to achieve an acceptable traffic flow and safety level. The recommendations marked with an asterisk indicate an existing transportation need and are not associated with the proposed development's projected impacts.

- \* • It is recommended that traffic counts be conducted again at the intersection of Middlebrook Pike at Andes Road/Church Driveway when either the current pandemic has ended and overall traffic volumes return closer to pre-pandemic levels, or when it is surmised that overall traffic volumes have reached a “new normal” to ensure the traffic signal warrant evaluations are valid and reasonable. This will allow for a re-comparison of the Traffic Signal Warrants and establish a timeframe of if and when this intersection could be signalized. Traffic crash data should also be included in the examination. Serious consideration should be given to transitioning this intersection to a traffic signal due to the existing large vehicle delays and queues on the northbound and southbound minor approaches of Andes Road and the Church Driveway.

- Without a center median opening, some apartment residents will be required to perform a westbound u-turn at the intersection of Middlebrook Pike at Andes Road/Church Driveway. A visual examination of the sight distance available for westbound U-turns at this intersection was conducted and estimated to exceed the recommended sight distance. Due to the horizontal curvature of Middlebrook Pike to the west, the sight distance at this location could be reduced if vegetation is not maintained on the south side of Middlebrook Pike. This vegetation will need to be maintained in the future.
- \* • It is recommended that traffic counts be conducted again at the intersection of Middlebrook Pike at Frederick Drive/Dollar General Driveway (Main) when either the current pandemic has ended and overall traffic volumes return closer to pre-pandemic levels, or when it is surmised that overall traffic volumes have reached a “new normal” to ensure these traffic signal warrant evaluations are valid and reasonable. This will allow for a re-comparison of the Traffic Signal Warrants and establish a timeframe of if and when this intersection could be signalized. Traffic crash data should also be included in the examination.
- If a center median opening on Middlebrook Pike is not allowed, it is recommended that a 75-foot eastbound right-turn lane be constructed on Middlebrook Pike at the Dollar General Driveway (Rear)/Proposed Apartment Driveway with a taper length of 60 feet (5:1). The right-turn lane should be marked with the appropriate right-turn pavement marking symbols.
- It is recommended that the Dollar General Driveway (Rear) and Proposed Apartment Driveway entrances be separated as much as possible. Separating the entrances as the properties are currently configured will be impossible since they share a single access point at Middlebrook Pike with limited property availability. The concern is that detrimental operational issues could occur if the entrance location remains as is. The driveways should have 40 feet minimum edge clearance spacing as shown in TDOT’s Manual for Constructing Driveway Entrances on State Highways in urban locations. This spacing is not possible based on the existing configuration and the property lines and limits as proposed. Obtaining additional property to the west would facilitate separating the entrances. The details and layout for this entrance should be clarified further during the detailed design phase with Knox County and TDOT.
- It is recommended that a Stop Sign (R1-1) and a 24” white stop bar be applied to the Proposed Apartment Driveway approach pavement at Middlebrook Pike.

According to the MUTCD, Stop Signs (R1-1) can be installed up to a maximum of 50 feet from the edge of the intersecting street. The stop bar should be applied at a minimum of 4 feet away from the extended edge of the proposed right-turn lane on Middlebrook Pike and should be placed at the desired stopping point that maximizes the sight distance.

- Intersection sight distance at Dollar General Driveway (Rear)/Proposed Apartment Driveway must not be impacted by future landscaping or signage. Based on a posted speed limit of 40-mph on Middlebrook Pike, the required intersection sight distance is 475 feet looking to the west. Based on an existing grade of 3% on Middlebrook Pike and a posted speed limit of 40-mph, the stopping sight distance is calculated to be 315 feet for eastbound vehicles on Middlebrook Pike. The site designer must verify that these distances will be available.
- It is recommended that a 15-mph Speed Limit Sign (R2-1) be posted near the beginning of the apartment driveway off Middlebrook Pike.
- Stop Signs (R1-1) and 24" white stop bars should be installed on the new internal aiseways and locations, as shown in the report.
- Sight distance at the new internal intersections in the development must not be impacted by new signage or future landscaping. With a speed limit of 15-mph in the development, the internal intersection sight distance requirement is 170 feet. The stopping sight distance required is 80 feet for a level road grade. The site designer should ensure that internal sight distance lengths are met.
- Due to the long, straight internal east-west parking lot aisleway to the north of Buildings 1 and 2, it is recommended that speed humps or tables be considered to reduce internal traffic speeds in the development. Alternatively, parking lot islands could be extended toward the aisleway.
- Due to the vast expanse of pavement in front of the access gate, it is recommended this pavement area be marked to show the predominant travel pattern expected for entering vehicles. These pavement markings should include a single yellow centerline from Middlebrook Pike south to the access gate and a painted island with white transverse crosshatch markings on the pavement.
- All drainage grates and covers for the residential development need to be pedestrian and bicycle safe.
- It would be beneficial for the internal sidewalk system to tie to the sidewalk system on Middlebrook Pike. However, due to the narrow width of the entrance access property and the steep grade, it is most likely not feasible.

- All road grade and intersection elements internally and externally should be designed to AASHTO, TDOT, and Knox County specifications and guidelines to ensure proper operation.
- It is recommended that TDOT re-examine the decision of not allowing a center median opening at the Proposed Apartment Driveway location. Allowing a center median opening would allow left-turns-in and out or, at a minimum, allow for westbound left-turns-in. Allowing left-turns-in would eliminate U-turns from the apartment residents at the intersection of Middlebrook Pike at Andes Road/Church Driveway, would facilitate the majority of entering generated traffic, and eliminate the need for the exclusive eastbound right-turn lane. If a center median opening is not allowed on Middlebrook Pike, the possibility of cut-thru traffic by the apartment residents occurring on the Dollar General Market property will remain high.
- If a center median opening is not allowed for the apartment development, it is recommended that Do Not Enter Signs (R5-1) and speed humps be installed on the north side of the Dollar General Market property at the existing one-way parking lot aisle. These installations will require cooperation between the two entities and may require Knox County's assistance to facilitate the installation to reduce cut-thru traffic.



# Development Request

## DEVELOPMENT

- ☐ Development Plan  
☐ Planned Development  
☒ Use on Review / Special Use  
☐ Hillside Protection COA

## SUBDIVISION

- ☐ Concept Plan  
☐ Final Plat

## ZONING

- ☐ Plan Amendment  
☐ SP ☐ OYP  
☐ Rezoning

MBCOMMONS, LLC

Applicant Name

Affiliation

5-24-2021

July 8, 2021

Date Filed

Meeting Date (if applicable)

File Number(s)

7-B-21-UR

## CORRESPONDENCE

All correspondence related to this application should be directed to the approved contact listed below.

- ☐ Applicant ☐ Owner ☐ Option Holder ☐ Project Surveyor ☒ Engineer ☐ Architect/Landscape Architect

NATHAN W. SILVUS, PE

SEC LLC

Name

Company

1815 NANTASKET ROAD

KNOXVILLE

TN

37922

Address

City

State

ZIP

865.414.0524

NATHAN@SILVUS.US

Phone

Email

## CURRENT PROPERTY INFO

SPEEGLE, KAREN

4105 BAJO LANE

865.661.1460

Owner Name (if different)

Owner Address

Owner Phone

0 MIDDLEBROOK PIKE

105-057 AND 105-058

Property Address

Parcel ID

WEST KNOX

WEST KNOX

NO

Sewer Provider

Water Provider

Septic (Y/N)

## STAFF USE ONLY

Southwest side of Middlebrook Pike, Northwest of Cedar Bluff Rd

5.29  
~~5.03~~ acres

General Location

Tract Size

☐ City ☒ County

6th

A (OB pending)

Vacant land

AgForVac

District

Zoning District

Existing Land Use

Northwest County

O (Office) / HP (Hillside Protection) pending ; LDR & HP Planned Growth

Planning Sector

Sector Plan Land Use Classification

Growth Policy Plan Designation

## DEVELOPMENT REQUEST

- ☐ Development Plan ☒ Use on Review / Special Use ☐ Hillside Protection COA  
☒ Residential ☐ Non-Residential

Home Occupation (specify) \_\_\_\_\_

**Multi-family development**

Other (specify) \_\_\_\_\_

Related City Permit Number(s)

## SUBDIVISION REQUEST

Proposed Subdivision Name \_\_\_\_\_

Unit / Phase Number ☐ Combine Parcels ☐ Divide Parcel

Total Number of Lots Created \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

☐ Attachments / Additional Requirements

Related Rezoning File Number

## ZONING REQUEST

☐ Zoning Change

Proposed Zoning \_\_\_\_\_

☐ Plan Amendment Change

Proposed Plan Designation(s) \_\_\_\_\_

Pending Plat File Number

Proposed Density (units/acre) \_\_\_\_\_

Previous Rezoning Requests \_\_\_\_\_

☐ Other (specify) \_\_\_\_\_

## STAFF USE ONLY

### PLAT TYPE

- ☐ Staff Review ☐ Planning Commission

### ATTACHMENTS

- ☐ Property Owners / Option Holders ☐ Variance Request

### ADDITIONAL REQUIREMENTS

- ☐ Design Plan Certification (*Final Plat*)  
☐ Use on Review / Special Use (*Concept Plan*)  
☒ Traffic Impact Study  
☐ COA Checklist (*Hillside Protection*)

Fee 1

0401

Fee 2

Fee 3

Total

**\$1,500**

## AUTHORIZATION

By signing below, I certify I am the property owner, applicant or the owners authorized representative.

**Nathan Silvus**

Digitally signed by Nathan Silvus  
DN: cn=Nathan Silvus, o=SEC, LLC, ou, email=nathan@silvus.us, c=US  
Date: 2021.05.24 10:38:59 -04'00'

**MBCOMMONS, LLC**

**5-24-21**

Applicant Signature

Please Print

Date

**865.414.0524**

**nathan@silvus.us**

Phone Number

Email

**Michael Reynolds**

Digitally signed by Michael Reynolds  
Date: 2021.05.24 11:14:49 -04'00'

**Michael Reynolds**

**5/24/2021 (mp)**

Staff Signature

Please Print

Date