



**KNOXVILLE/KNOX COUNTY METROPOLITAN PLANNING COMMISSION  
USE ON REVIEW REPORT**

▶ **FILE #:** 2-J-08-UR

**AGENDA ITEM #:** 84

**AGENDA DATE:** 2/14/2008

▶ **APPLICANT:** ODLE & YOUNG ARCHITECTS, INC.

**OWNER(S):** HOME FEDERAL BANK OF TENNESSEE

**TAX ID NUMBER:** 144 L B 003

**JURISDICTION:** County Commission District 4

▶ **LOCATION:** South side of Bexhill Dr., east side of Ebenezer Rd., north side of Gatwick Dr.

▶ **APPX. SIZE OF TRACT:** 2.51 acres

**SECTOR PLAN:** Southwest County

**GROWTH POLICY PLAN:** Planned Growth Area

**ACCESSIBILITY:** Access is via Bexhill Dr. a local street with a pavement width of 30'-42' within a 50' right-of-way and Ebenezer Rd. a minor arterial street with a five lane pavement section with a required right-of-way of 100'.

**UTILITIES:** Water Source: First Knox Utility District

Sewer Source: First Knox Utility District

**WATERSHED:** Tennessee River

▶ **ZONING:** PC (Planned Commercial) & RA (Low Density Residential)

▶ **EXISTING LAND USE:** Vacant land

▶ **PROPOSED USE:** Child Day Care Center for up to 150 children

**HISTORY OF ZONING:** Property zoned to PC (Planned Commercial) in the 1970's

**SURROUNDING LAND USE AND ZONING:** North: Residences / RA (Low Density Residential)

South: Residences / RA (Low Density Residential) & PR (Planned Residential)

East: Residences / RA (Low Density Residential)

West: Residences / A (Agricultural)

**NEIGHBORHOOD CONTEXT:** The site is located in an area along Ebenezer Rd. that has developed as low density residential subdivisions under RA, PR and A zoning.

**STAFF RECOMMENDATION:**

▶ **APPROVE the request for a day care facility for up to 150 children at this location subject to the following 8 conditions**

1. Connecting the development to sanitary sewer, as well as meeting other applicable requirements of the Knox County Health Department.
2. Meeting all applicable requirements of the Knox County Zoning Ordinance.
3. Meeting all applicable requirements and obtaining all required permits from the Tennessee Department of Human Services.
4. Installation of a sidewalk meeting American Disability Act requirements along the Bexhill Dr. street frontage

that ties into the existing sidewalk along Ebenezer Rd. The sidewalk design and installation is subject to approval by the Knox County Department of Engineering and Public Works and shall be in place prior to issuance of an occupancy permit for the center.

5. As recommended by the Traffic Impact Study, trim and/or remove the vegetation overgrowth (south side of the intersection of Bexhill Dr. and Ebenezer Rd.) that restricts the driver's line of sight of a vehicle stopped at the stop bar looking left from the Bexhill Drive approach at its intersection with Ebenezer Rd.
6. Meeting all applicable requirements of the Knox County Department of Engineering and Public Works.
7. Installing all landscaping, as shown on the landscape plan, within six months of issuance of an occupancy permit for the project, or posting a bond with the Knox County Department of Engineering and Public Works, to guarantee such installation. A Type "A" landscape screen (see attachment), between the fenced play area and the adjoining residential lots to the east, shall be installed prior to issuance of an occupancy permit. Landscaping at all intersections shall be installed so as not to interfere with the sight triangles and visibility along public streets.
8. Restrictive covenants, meeting the requirements of the PC zoning district, shall be recorded prior to the Planning Commission Staff's certification of the approved child day care center development plan for a building permit application.

With the conditions noted above, this request meets all requirements of the PC (Planned Commercial) zoning district, as well as other criteria for approval of a use-on-review.

#### **COMMENTS:**

The applicant is proposing to develop a child day care center on approximately 1.4 acres of a 2.51 acre parcel at the entrance to Bexhill Subdivision off of Ebenezer Rd. While the majority of the property was rezoned to PC (Planned Commercial) in the 1970's, a small area along the eastern side of the site is zoned RA (Low Density Residential). A child day care center can be considered through the use-on-review process in both the PC and RA zoning districts. Development of the remaining 1.1 acres is subject to a separate use-on-review application.

The proposed facility will serve an enrollment of up to 150 children with a maximum of 24 employees. The 8000 square foot building includes 5,555 square feet of indoor play area for the children. A 15,500 square foot fenced in outdoor play area is also provided. The site will have 35 parking spaces for employees and children drop-off. The proposed facility complies with the minimum standards for a child day care center in the Knox County Zoning Ordinance.

This proposed development will have a street connection to both Ebenezer Rd. and Bexhill Dr. While a traffic impact study is not required for a facility of this size, Staff requested that a study be prepared to evaluate the impact of the facility on the intersection of Bexhill Dr. and Ebenezer Rd. A copy of the report is attached. One of the main concerns was that the entrance from the site onto Bexhill Dr. would not have a negative impact on the turning movements at the intersection and the expected queue lengths. It was concluded that the proposed driveway spacing of 121 feet from the intersection was acceptable. The study also included a recommendation to trim and/or remove the vegetation overgrowth (south side of the intersection of Bexhill Dr. and Ebenezer Rd.) that restricts the driver's line of sight of a vehicle stopped at the stop bar looking left from the Bexhill Drive approach at its intersection with Ebenezer Rd.

Staff is also recommending the installation of a sidewalk meeting American Disability Act requirements along the Bexhill Dr. street frontage that ties into the existing sidewalk along Ebenezer Rd. The sidewalk will allow for safer access along this commercial site to the existing sidewalk on Ebenezer Rd. A sidewalk along Gatwick Dr. should be required with any development approval of the remaining 1.1 acres.

#### **EFFECT OF THE PROPOSAL ON THE SUBJECT PROPERTY, SURROUNDING PROPERTIES AND THE COMMUNITY AS A WHOLE**

1. Having direct access to Ebenezer Rd., a minor arterial street, and with the existing turn lanes and proposed driveway spacing on Bexhill Dr. the existing street improvements have adequate capacity for the proposed facility.
2. Public water and sewer utilities are available to serve the development.
3. The proposal will have no impact on schools.

#### **CONFORMITY OF THE PROPOSAL TO CRITERIA ESTABLISHED BY THE KNOX COUNTY ZONING ORDINANCE**

1. The proposed day care facility is consistent with the general standards for uses permitted on review: The proposed development is consistent with the adopted plans and policies of the General Plan and Sector Plan. The use is in harmony with the general purpose and intent of the Zoning Ordinance. The use is compatible with the character of the neighborhood where it is proposed. The use will not significantly injure the value of adjacent property. The use will not draw additional traffic through residential areas since it is located at the entrance of the subdivision and also has direct access to Ebenezer Rd. a minor arterial street.
2. The proposal meets all requirements for approval of a day care facility in the PC (Planned Commercial) zoning district.

#### CONFORMITY OF THE PROPOSAL TO ADOPTED MPC PLANS

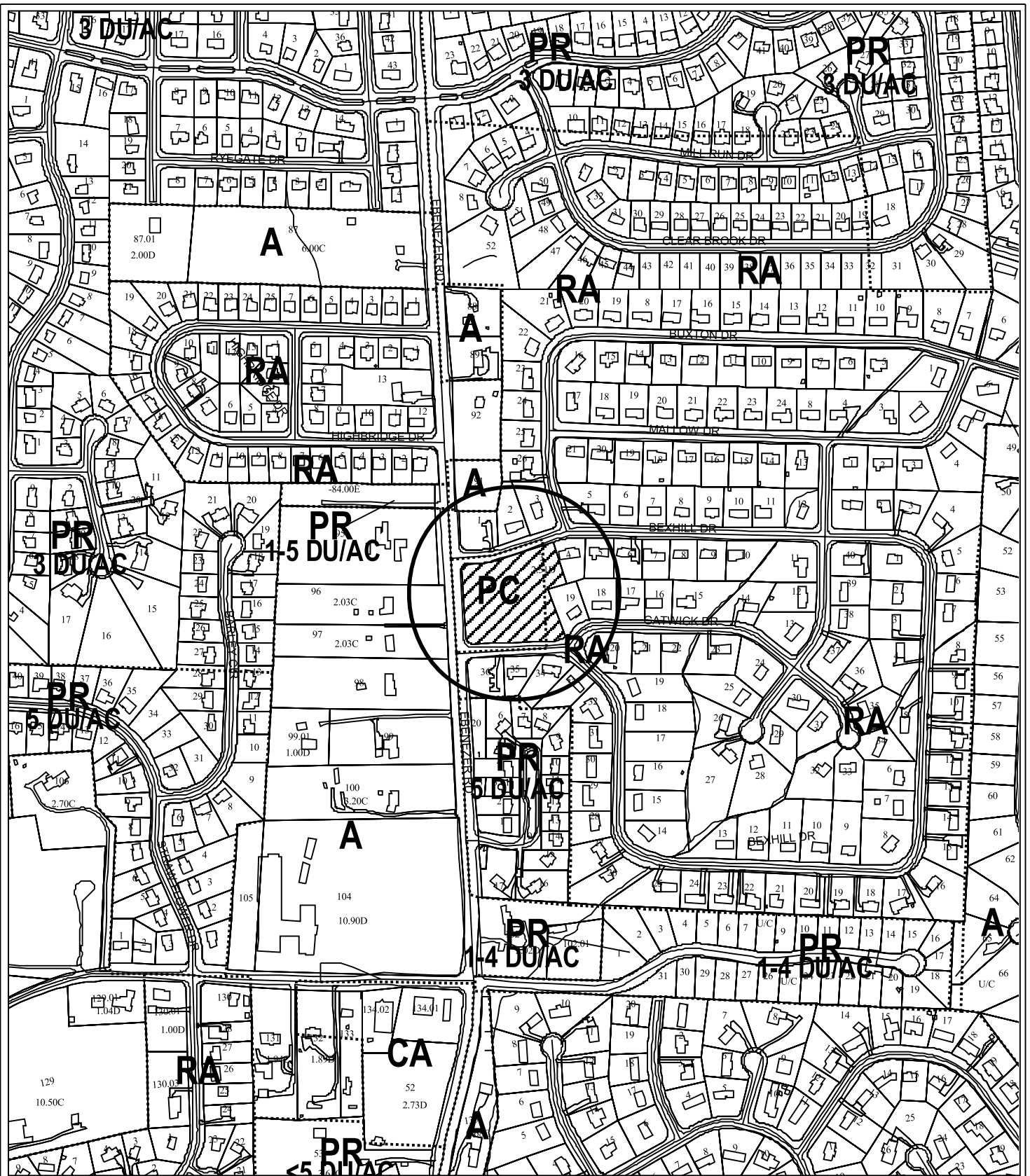
1. The Southwest County Sector Plan proposes low density residential uses for this site. While the sector plan does not recognize the PC zoning for this site, a child day care center may be allowed in residential areas through a use-on-review.
2. The site is located within the Planned Growth Area of the Knoxville-Knox County-Farragut Growth Policy Plan.

#### ESTIMATED TRAFFIC IMPACT 634 (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: Not applicable.

MPC'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 an MPC decision in the County.




2-J-08-UR  
 USE ON REVIEW

Petitioner: Odle & Young Architects, Inc.

Map No: 144

Jurisdiction: County

 Child Day Care Center for up to 150 children in PC (Planned Commercial) & RA (Low Density Residential)

Original Print Date: 01/28/08 Revised:  
 Metropolitan Planning Commission \* City / County Building \* Knoxville, TN 37902







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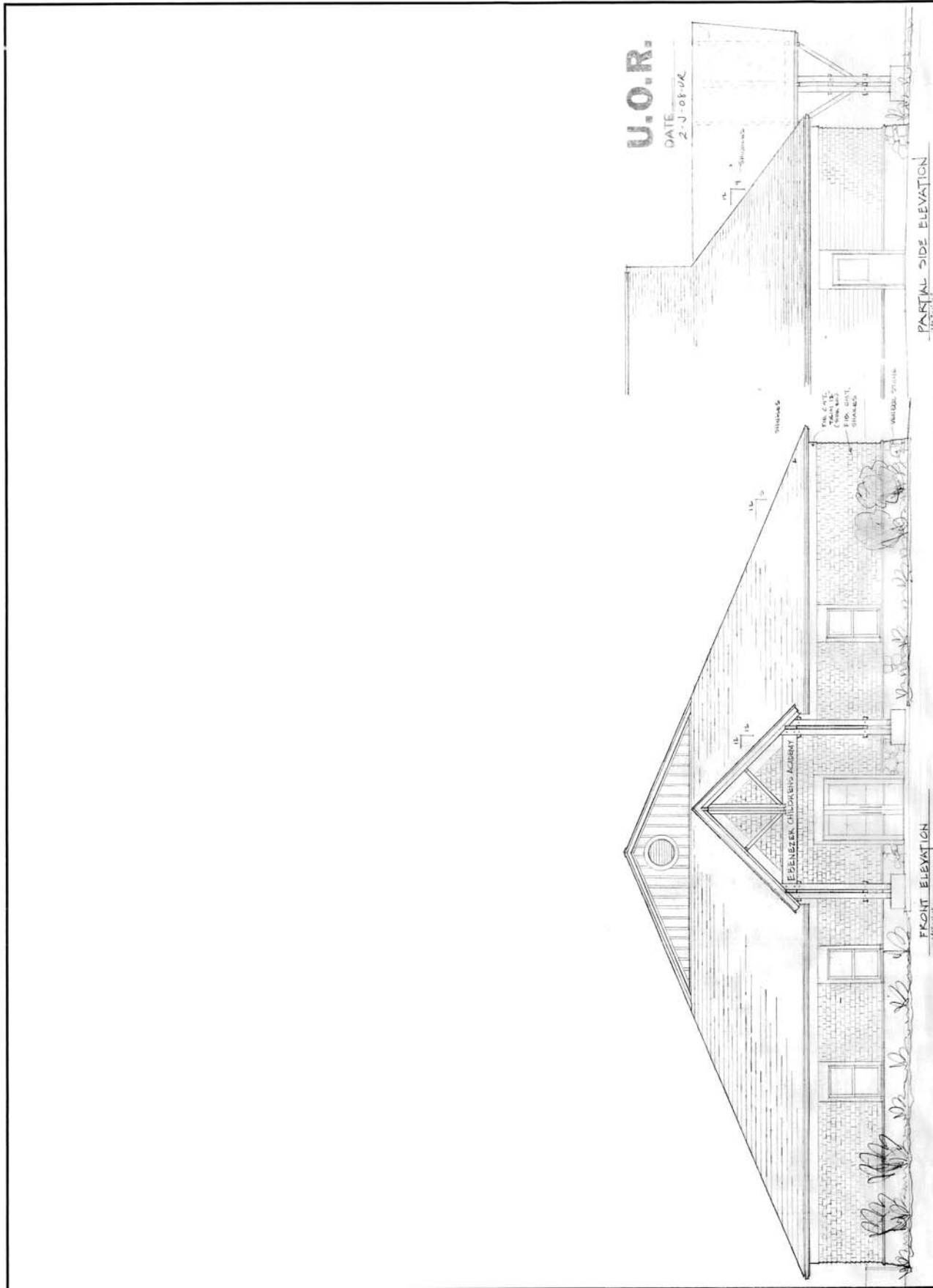
1401 Bexhill Dr

Ebenezer  
Daycare

MARK	DATE	ISSUE FOR
	12-17-03	2nd CONSTRUCTION

PROJECT #	03-000
DATE	03-03-03
SHEET	1 OF 1
Building Elevations	
SHEET	A201
PROJECT NAME	Ebenezer Daycare





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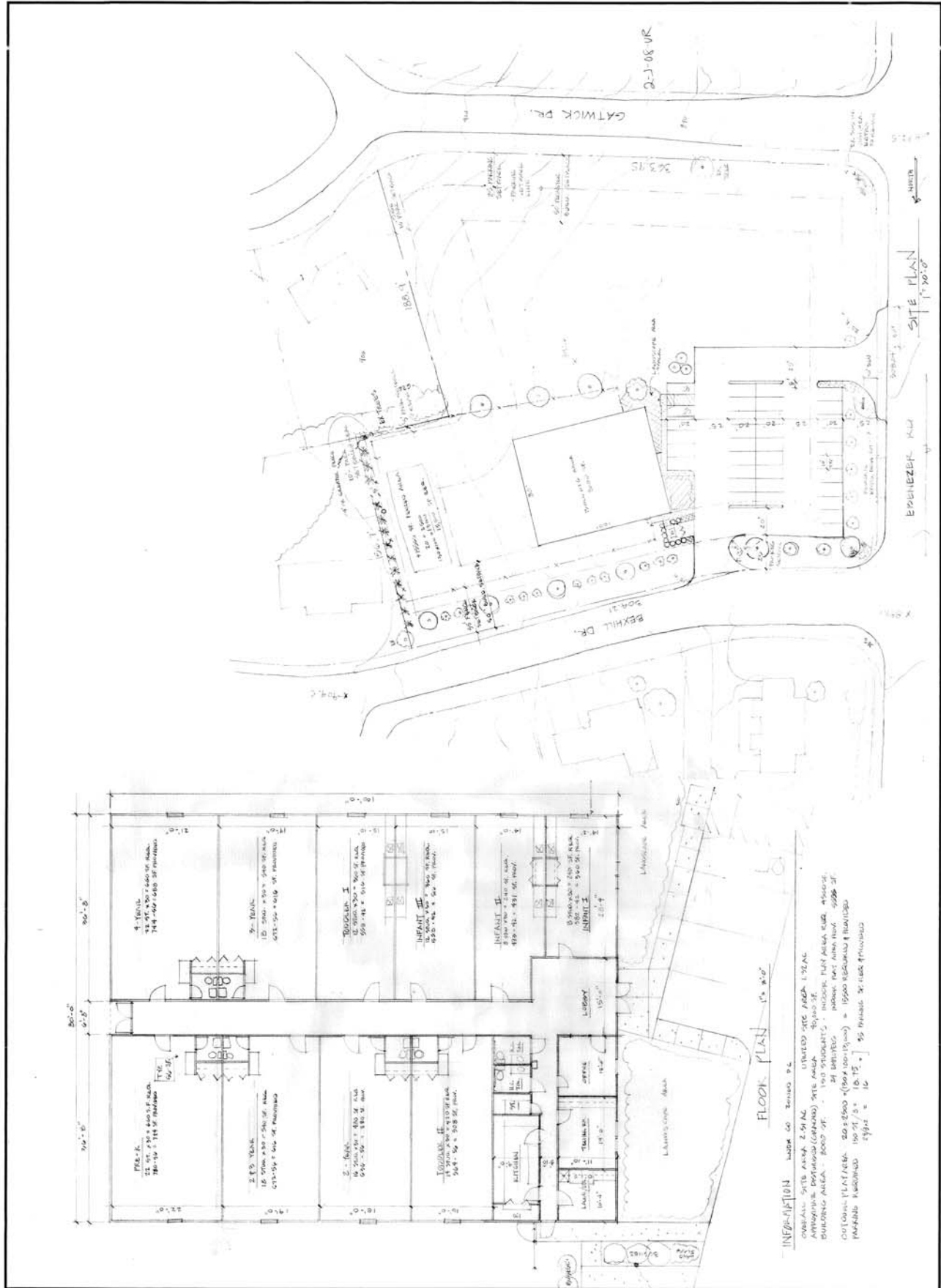
Knoxville, Tennessee 37922

Ebenezer  
 Daycare

MARK	DATE	DESCRIPTION	ISSUED FOR
1	12-20-07	FINAL DESIGN	FOR PERMITS

PROJECT NO.	07002
DATE	12-20-07
PROJECT NAME	EBENEZER DAYCARE
OWNER	EBENEZER DAYCARE
SCALE	AS SHOWN



**DAY CARE REVIEW**

Case No. 2-J-08-UR

Applicant Odle & Young Architects, Inc.

**ZONING ORDINANCE REQUIREMENTS** (Article 4, Section 4.91)

- **Minimum Lot Size**

Required: 10,000 sq. ft.

Request: 1.4 acres

- **Minimum Size for Fenced Outdoor Play Area**

Required:: 15,500 sq ft. sq. ft. (2500 sq. ft. for first 20 children; 100 sq. ft. per each additional child)

Request: 15,500 sq ft. sq. ft.

- **Minimum Building Area**

Required: 4500 sq ft. 30 square feet per child

Request: 5555 sq ft. sq. ft.

- **Minimum Off-Street Parking (Article 3, Section 3.50)**

Required: 16 teacher/employee spaces (two (2) parking spaces per three (3) teachers and employees)

19 off-street loading spaces (one (1) off-street loading space per eight (8) pupils)

Request: 16 teacher/employee spaces  
19 off-street loading spaces



2-J-08-UR



January 31, 2008

Mr. Steve Young  
Odle & Young Architects, Inc.  
1545 Western Avenue  
Knoxville, Tennessee 37921

**RE: PROFESSIONAL SERVICES PROPOSAL FOR TRAFFIC IMPACT STUDY OF PROPOSED DAY CARE ON EBENEZER ROAD KNOX COUNTY, TN**

Dear Mr. Young:

Wilbur Smith Associates (WSA) is pleased to submit this letter report pertaining to the traffic impact of the proposed Day Care located on the corner of Ebenezer Road and Bexhill Drive.

**General Site Description and Data Collection**

The Day Care development will be 8,000 square feet with 150 students. There will be two proposed driveway connections. The main entrance is to be located on Ebenezer Road approximately 150 feet from the edge of Bexhill Drive to the center of proposed driveway. An additional driveway connection is proposed to Bexhill Drive approximately 120 feet from edge of Ebenezer Road to center of proposed driveway. The site traffic will enter at the Ebenezer Road access and after dropping off the students will exit at the Bexhill Drive access. For study purposes, the analysis year is 2010 to allow for buildout and normal daily operations to occur.

Peak-hour turning movement counts (TMC) were conducted by WSA in January of 2008 for the intersection of Ebenezer Road and Bexhill Drive. Figure 1 illustrates the resulting intersection turning movements for the 2008 AM and PM peak hours. The peak hours at were found between 7:15-8:15 AM and 5:00-6:00 PM. Vehicle queues on the Bexhill Drive approach were noted during data collection. During the AM peak hour, the observed queue was typically one or two vehicles. The maximum queue that was observed for a single occurrence during the entire AM peak period was four vehicles. During the PM peak hour, the observed queues were two vehicles or less.

1100 Marion Street, Suite 200, Knoxville, Tennessee 37921  
865.963.4300 / 865.963.4301 www.WilburSmith.com

**Background Traffic Volumes**

An average growth rate was determined by reviewing the Average Daily Traffic for the previous years. Tennessee Department of Transportation Count Station 286 on Ebenezer Road had average daily traffic volume data which were used to calculate an annual percent growth of approximately 2.56-percent. Background traffic volumes on Ebenezer Road without the development were estimated by factoring the 2008 volumes to 2010 volumes. Annual traffic growth on Ebenezer Road is estimated to be 2.5-percent per year. A factor of 1.05 was applied to the 2008 AM and PM turning movements at the intersections to develop the 2010 turning movements. Figure 2 represents the resulting 2010 AM and PM peak-hour traffic volumes on Ebenezer Road, without the Day Care site traffic.

**Trip Generation and Trip Distribution of Site Traffic**

Site traffic was determined using the publication, **Trip Generation, 7th Edition**. This reference is published by the Institute of Transportation Engineers (ITE) and represents national data collected for many different land uses, including industrial, residential, and commercial uses. **Trip Generation** is an essential tool in calculating the traffic which may be generated by a proposed development. The study will generate traffic for a Day Care Facility with 150 students. From the trip generation calculations, the proposed site may generate approximately 677 daily trips. Table 1 shows the daily, AM, and PM peak-hour traffic expected to be generated by the Day Care facility. The detailed data and worksheets for the trip generation calculations are contained in the Appendix.

Table 1: Day Care Facility Trip Generation Summary

TIME PERIOD	TOTAL TRIPS	ENTERING	EXITING
Weekday (24 hours)	677	339	339
AM Peak Hour	115	61	54
PM Peak Hour	108	51	57

This traffic data reported that 65-percent of the traffic on Ebenezer Road was destined to the north toward in the AM peak hour and returning from the north in the PM peak hour. The 35-percent was measured to be destined south on Ebenezer Road and returning from the south in the PM peak hour. These directional splits were applied to the projected Day Care site traffic.

The Day Care facility site traffic was assumed to continue in the same direction of travel. The northbound Ebenezer Road driver would turn into the main entrance, drop off child, exit onto Bexhill

Drive and make a right continuing to travel northbound on Ebenezer Road. The southbound traffic would turn left into the main entrance, drop off child, exit onto Bexhill Drive and then turn left on Ebenezer continuing southbound. These trips are considered new trips that would be traffic destined to the proposed Day Care and additional traffic to existing Ebenezer Road traffic volumes. It is likely that a portion of the Day Care new trips would be included in the existing traffic volumes traveling between home and work. However, the conservative approach of this study is to account for the new trips as not part of 2008 traffic volumes.

A measure of concern is the length of queue vehicles on the Bexhill Drive approach to Ebenezer Road. Therefore, all new trips are considered as external generators which means the trips will egress the site turning left to turn either left or right on Ebenezer Road. There were no trips assumed to turn right egressing the Day Care facility. This provided the opportunity to measure the expected worst case scenario at the Ebenezer Road and Bexhill Drive intersection. Figure 3 represents the new trips generated and the assignment to the roadway network.

#### **Traffic Conditions With Development**

The 2010 background growth volumes shown in Figure 2 were combined with the new trips in Figure 3 and are represented in Figure 4. Unsignalized intersection capacity analyses were performed for the AM and PM peak hours to evaluate traffic conditions at the intersections of Ebenezer Road and Bexhill Drive and the development's site accesses.

The methodology of the *2000 Highway Capacity Manual*, as contained in the *Highway Capacity Software*, was used for the capacity analyses. One of the measures employed in such analyses is "level of service" (LOS), a qualitative statement of the acceptability of traffic conditions based on delay. The LOS index ranges from LOS A, indicating excellent traffic conditions with minimal delay, to LOS F indicating very congested conditions with excessive delay. LOS E generally is considered the minimum acceptable for unsignalized conditions in urban areas. Table 2 presents a summary of the capacity analysis results. More detailed information is provided in the computer output reports found in the Appendix.

Table 2: Summary of Highway Capacity Software Analysis

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	2008 TRAFFIC				2010 BACKGROUND TRAFFIC				2010 BACKGROUND & SITE			
			v/c Ratio	LOS	Delay (sec)	Queue Length 95th (ft)	v/c Ratio	LOS	Delay (sec)	Queue Length 95th (ft)	v/c Ratio	LOS	Delay (sec)	Queue Length 95th (ft)
Bexhill Drive & Ebenezer Road	STOP	AM	0.22/0.38	D/C	26.1/18.8	21/44	0.24/0.40	D/C	28.3/19.9	23/47	0.35/0.50	D/C	32.2/22.9	37/68
	WB-L/R	PM	0.06/0.09	C/B	16.7/11.2	5/8	0.7/0.09	C/B	17.2/11.3	5/8	0.21/0.13	C/B	19.6/11.6	19/11
Bexhill Drive & Ebenezer Road	SIGNAL	AM	-	-	-	-	-	-	-	-	0.56	A	6.9	46/80
		PM	-	-	-	-	-	-	-	-	0.40	A	4.1	30/19
Bexhill Drive & Day Care Exit	STOP	AM	-	-	-	-	-	-	-	-	0.08	B	10.3	6
		PM	-	-	-	-	-	-	-	-	0.08	B	10.1	7
Ebenezer Road & Day Care Entrance	STOP	AM	-	-	-	-	-	-	-	-	0.04	B	11.5	3
		PM	-	-	-	-	-	-	-	-	0.04	A	9.6	3

The traffic operations measured by 2008 peak hour traffic volumes indicate that the stop controlled intersection of Ebenezer Road and Bexhill Drive is at a LOS D or better for the left and right-turn movement. In 2010 with or without the proposed Day Care facility, traffic operations are projected to continue at a LOS D or better. The LOS's for these intersections with stop control and under study conditions are acceptable.

This study observed the queue on Bexhill Drive approach to Ebenezer Road to be on average approximately 1 to 2 vehicles with one occurrence of 4 vehicles. Synchro traffic analysis software estimated a current (2008) 95th percentile queue of approximately 50 feet, predicted 2010 queue without the Day Care facility to be approximately 50 feet, and predicted 2010 queue with the Day Care facility is expected to be approximately 70 feet. The available storage in the left-turn lane, as striped in 2008, is approximately 100 feet. The proposed driveway location is approximately 115 to 120 feet from edge of Ebenezer Road. The queue is not expected to extend to block the Day Care facility egress with the projected 2010 queue lengths.

Queue length measurements are typically longer at signalized intersection than unsignalized intersections. Consideration of projected traffic volumes and the potential developed of a bank or medical office adjacent to the Day Care facility, the intersection of Ebenezer Road and Bexhill Drive was analyzed under signal control. The queue length is expected to be less than the 100-foot of turn lane storage.

**Conclusions and Recommendations**

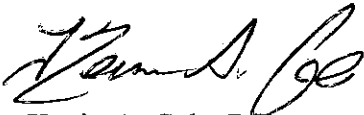
Commercial driveway spacing to an intersection is critical to the safe and efficient operation of an intersection. The optimum location is as far away from the intersection as possible. This reduces the friction between turning vehicles and through traveling vehicles. Although a greater distance between the Day Care facility driveway and Ebenezer Road is desirable, the proposed traffic turning volumes are not expected to queue longer than the 100-foot turn-lane storage or block the site egress as proposed approximately 115 to 120 feet from Ebenezer Road.

It is the recommendation of this study to trim and/or remove vegetation overgrowth that restricts the driver's line of sight of a vehicle stopped at the stop bar looking left from the Bexhill Drive approach at its intersection to Ebenezer Road.

Please find enclosed the supporting figures, data, worksheets, and computer reports cited herein. Do not hesitate to call if you have any questions or wish to discuss this report.

Sincerely,

WILBUR SMITH ASSOCIATES



Kevin A. Cole, P.E.  
Transportation Engineer

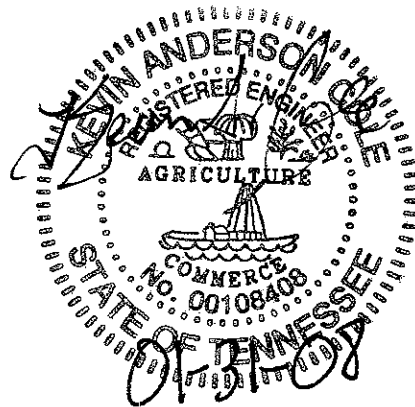
KAC/kac

Enclosures:

Figures

- Figure 1: Year 2008 Peak Hour Traffic
- Figure 2: Year 2010 Peak Hour Traffic
- Figure 3: New Project Trip Assignment
- Figure 4: Year 2010 Peak Hour Traffic with Development

Appendix



# GUIDELINES LANDSCAPE SCREENING

## DESIGN

### Type "A" Screen: Dense

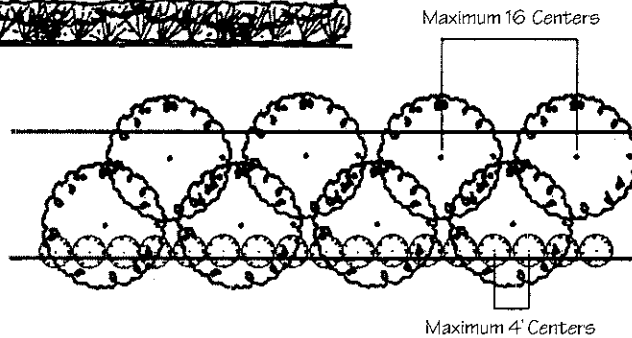
**APPROPRIATE LOCATION:** Boundaries of commercial and industrial developments adjoining residential areas

**NOTE:** Landscape buffer strips should be a minimum of 15 feet in width, and sown with grass or ground cover for their full width, allowing for mulch at the base of plantings.

- Two offset rows of deciduous or evergreen canopy trees with a 6 ft high continuous dense evergreen hedge fence, wall or earth berm

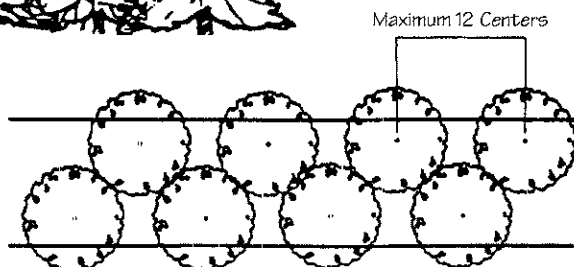
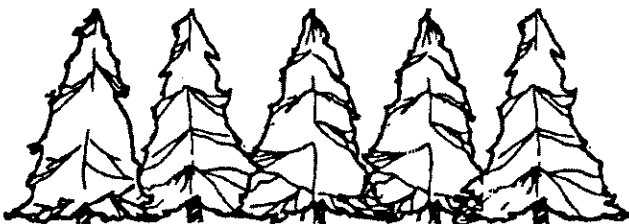
TREE HEIGHT  
Installed: 8 ft.  
Mature: 40 ft.

SHRUB HEIGHT  
Installed: 4 ft.  
Mature: 6 ft.



- Two offset rows of evergreen trees with branches touching the ground

TREE HEIGHT  
Installed: 8 ft.  
Mature: 30 ft.



#### INTRODUCTION

Landscape screening reduces the impact of intense development upon adjacent land uses by providing visual separation, reducing the transmission of glare and air pollution, and limiting access. Screening also promotes the aesthetic appeal of a neighborhood and promotes higher property values.

This series of design guidelines defines several types of landscape screen. Each type is applicable to a certain intensity of conflict between adjacent land uses. Each screen type is illustrated by several planting schemes with an equivalent height, density and opacity of landscaping.

MPC uses these guidelines to illustrate desirable levels of screening appropriate to various site planning situations. Creative alternatives which achieve a comparable effect are encouraged.

#### For more information:

MPC  
Development Services  
Suite 403  
City County Building  
400 Main Street  
Knoxville, TN 37902  
Phone: 865 215-2500  
Fax: 865 215-2068  
Web: [www.knoxmpc.org](http://www.knoxmpc.org)

The contents of these guidelines are advisory and are intended to supplement, but not replace, the requirements of the Knoxville Zoning Ordinance and the Knox County Zoning Ordinance.