USE ON REVIEW REPORT

▸ **FILE #:**	**3-C-21-UR**	**AGENDA ITEM #:** **27**
		AGENDA DATE: **3/11/2021**
▸ **APPLICANT:**	**875 CORNERSTONE MULTIFAMILY DEVELOPMENT**	
OWNER(S):	USCC Real Estate Corp.	
TAX ID NUMBER:	131 069 (PART OF)	**View map on KGIS**
JURISDICTION:	County Commission District 6	
STREET ADDRESS:	875 Cornerstone Dr.	
▸ **LOCATION:**	**East side of Cornerstone Dr., north side of Murdock Dr., southeast of Lovell Rd.**	
▸ **APPX. SIZE OF TRACT:**	**12.35 acres**	
SECTOR PLAN:	Northwest County	
GROWTH POLICY PLAN:	Planned Growth Area	
ACCESSIBILITY:	Access will be off of Murdock Dr., a minor arterial with a pavement width of 43.5 feet within a right-of-way width of 88 feet, and off of Cornerstone Dr., a local street with a pavement width of 39.2 feet within a right-of-way width of 50 feet.	
UTILITIES:	Water Source: First Knox Utility District	
	Sewer Source: First Knox Utility District	
WATERSHED:	Turkey Creek	
▸ **ZONING:**	**OB (Office, Medical, and Related Services) / TO (Technology Overlay)**	
▸ **EXISTING LAND USE:**	**PP (Public Parks)**	
▸ **PROPOSED USE:**	**Multi-dwelling development**	
HISTORY OF ZONING:	Rezoning request from CB/TO to I/TO in 1996 (11-M-96-RZ) was withdrawn before Planning Commission took action; rezoned from CB/TO to OB/TO in November 2020 (11-E-20-RZ).	
SURROUNDING LAND USE AND ZONING:	North: PP (Public Parks) - OB (Office, Medical, and Related Services) / TO (Technology Overlay)	
	South: Agriculture/forestry/vacant - CB (Business and Manufacturing) / TO (Technology Overlay)	
	East: Office - PC (Planned Commercial) / TO (Technology Overlay)	
	West: Office - CB (Business and Manufacturing) / TO (Technology Overlay)	
NEIGHBORHOOD CONTEXT:	The area is largely a mix of office, industrial, and commercial uses, though there is some single family residential in the area as well.	

STAFF RECOMMENDATION:

▸ **APPROVE the request for a multifamily development with 216 dwelling units as shown on the site**

development plan, subject to 9 conditions.

1) Obtaining approval from the Tennessee Technology Corridor Development Authority (TTCDA) for the proposed development.
2) Connecting the development to sanitary sewer, as well as meeting other applicable requirements of the Knox County Health Department.
3) Provision of street names which are consistent with the Uniform Street Naming and Addressing system Ordinance (Ord. 91-1-102).
4) Installing all landscaping, as shown on the landscape plan, within six months of issuance of occupancy permits for the project, or posting a bond with the Knox County Department of Engineering and Public Works, to guarantee such installation.
5) Implementation of the street and intersection improvements and recommendations outlined in the Traffic Impact Study prepared by Canon & Canon and approved by the Knox County Department of Engineering and Public Works and Planning staff. The design details and timing of the installation of the improvements shall be worked out with the Knox County Department of Engineering and Public Works during the design plan stage for the development.
6) Installation of all sidewalks as identified on the concept plan. Sidewalks shall meet all applicable requirements of the Americans with Disabilities Act (ADA) and the Knox County Department of Engineering and Public Works, or posting a bond with the Knox County Department of Engineering and Public Works in an amount sufficient to guarantee the installation of the sidewalks.
7) Meeting all applicable requirements of the Knox County Department of Engineering and Public Works.
8) Meeting all applicable requirements of the Knox County Zoning Ordinance.
9) Review and approval by the Knox County Fire Marshal's Office.

COMMENTS:

The applicant is requesting approval of a multi-family development on 12.35 acres of an approximately 23-acre tract located on the north side of Cornerstone Drive between Lovell Road and Murdock Drive, generally west of Pellissippi Parkway. The site is currently home to US Cellular soccer fields, but the apartment complex is proposed for the southeast half of the site.

The development consists of 216 dwelling units distributed between 9 buildings. 216 dwelling units over 12.35 acres yields a density of 17.49 du/ac.

Apartment buildings are to be three stories and will contain 72 one-bedroom units and 144 two- or three-bedroom units. An amenity area including a clubhouse and pool area is centrally located within the complex. A dog park is proposed for the northwest corner of the site next to the soccer fields. A dumpster enclosure is proposed on the west side of the site.

The development will also require review and approval by the TN Technology Corridor Development Authority (TTCDA), and is scheduled to be heard on the March 8, 2021 TTCDA agenda.

The property was rezoned to OB (Office, Medical, and Related Services) / TO (Technology Overlay) by the Knox County Commission on December 21, 2020. The OB zoning district allows multi-dwelling development as a use on review with a density less than 24 du/ac.

The property has frontage on Cornerstone Drive and Murdock Drive, and has access from both roads. Murdock Drive is a minor arterial that becomes Dutchtown Road and has direct access to Pellissippi Parkway approximately ¾ mile to the northeast.

Canon & Canon prepared a Traffic Impact Study (TIS) for Cornerstone Apartments, the last revision of which was on February 24, 2021. The following improvements are recommended to be implemented with the construction of this project:

1. Install stop signs on site at the access approaches to Cornerstone Drive and Murdock Drive.
2. At the intersection of Cornerstone Drive at Murdock Drive, shorten the existing westbound right-turn lane storage from 250' to 150' and shorten the existing right-turn lane taper from 200' to 150' to allow for the proposed site access along Murdock Drive to be installed outside of the existing right-turn lane taper.
3. Maintain intersection corner sight distances on the site driveways by ensuring that new site signage and landscaping is appropriately located.

The proposed parking for the development falls within the minimum and maximum number of spaces allowed by the Design Guidelines and those required by Knox County. The parking contains 329 surface parking

spaces including 21 garage spaces.

Sidewalks are provided throughout the site and will connect with the existing sidewalk along Cornerstone Drive. The existing sidewalk along Murdock Drive will be replaced with a new sidewalk that parallels the street and allows the curb cut at the entry.

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

1. The development will be served by First Knox Utility District.
2. The proposed apartment complex will have a minimal impact on the existing street system.
3. The proposed apartment complex should have a minimal impact on traffic since it can be accessed from Murdock Drive and Lovell Road, both of which are minor arterials.
4. The proposed facility is compatible with the scale and intensity of the surrounding development and zoning pattern.

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

1) With the recommended conditions, the proposed facility meets all requirements of the OB zoning district and the criteria for approval of a use on review.
2) The proposed facility is consistent with the general standards for uses permitted on review:
   a) The proposal is consistent with the adopted plans and policies of the General Plan and Sector Plan.
   b) The use is in harmony with the general purpose and intent of the Zoning Ordinance.
   c) The use is compatible with the character of the neighborhood where it is proposed.
   d) The use will not significantly injure the value of adjacent property.
   e) The use will not draw additional traffic through residential areas since the site is located on a minor arterial street.
   f) No surrounding land uses will pose a hazard or create an unsuitable environment for the proposed use.

CONFORMITY OF THE PROPOSAL TO ADOPTED PLANS

1. The Northwest County Sector Plan designates the property as Office land use. The Office land use allows the OB zone in the county, which allows multifamily use as a use on review.
2. The site is identified as being within the Planned Growth Area on the Knoxville-Knox County-Farragut Growth Policy Plan.

ESTIMATED TRAFFIC IMPACT: 1907 (average daily vehicle trips)

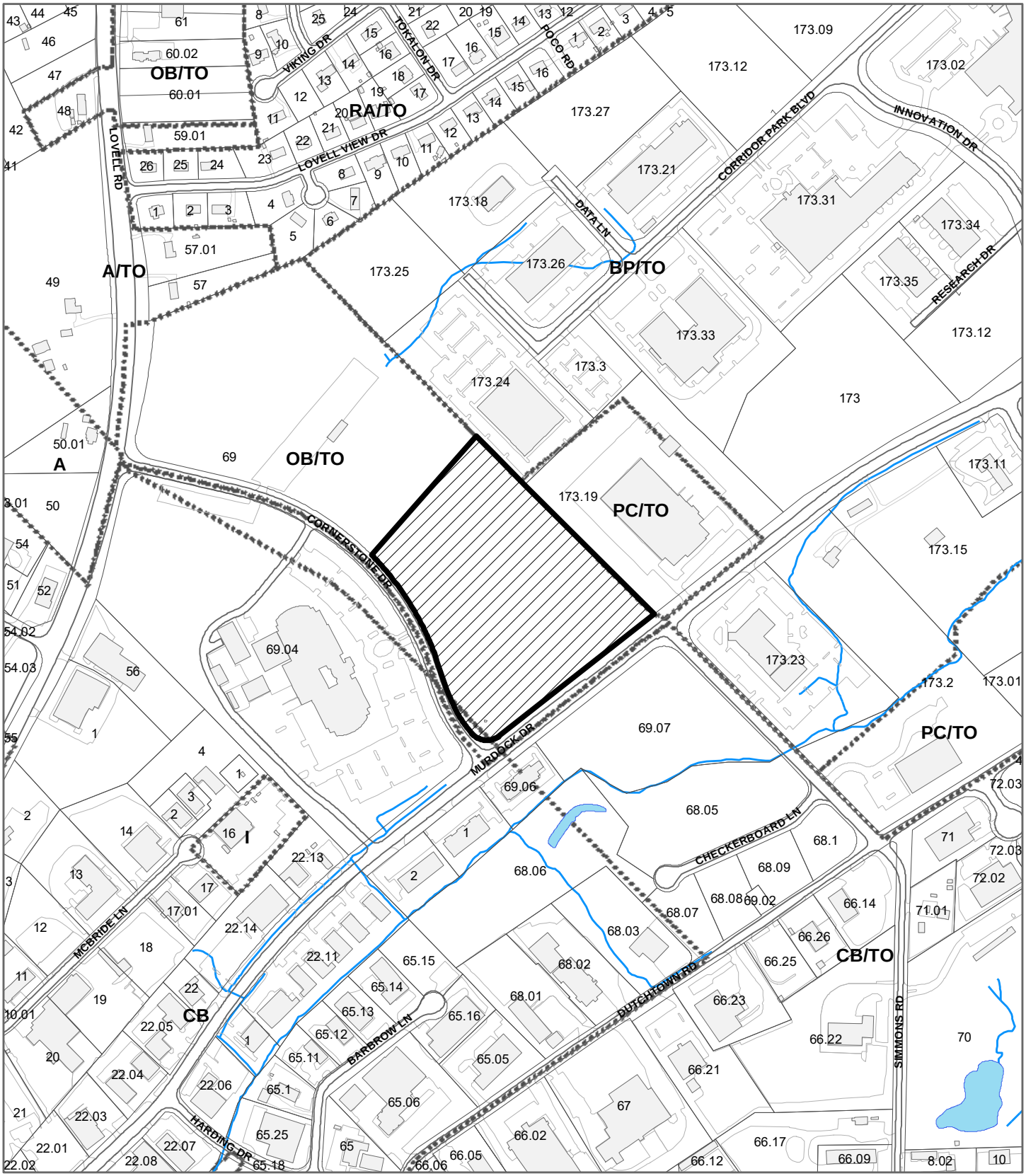
Average Daily Vehicle Trips are computed using national average trip rates reported in the latest edition of "Trip Generation," published by the Institute of Transportation Engineers. Average Daily Vehicle Trips represent the total number of trips that a particular land use can be expected to generate 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: 16 (public school children, grades K-12)

Schools affected by this proposal: Farragut Primary/Intermediate, Hardin Valley 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.



3-C-21-UR
USE ON REVIEW

Petitioner: 875 Cornerstone Multifamily Development

Multi-dwelling development in OB (Office, Medical, and Related Services) / TO (Technology Overlay)

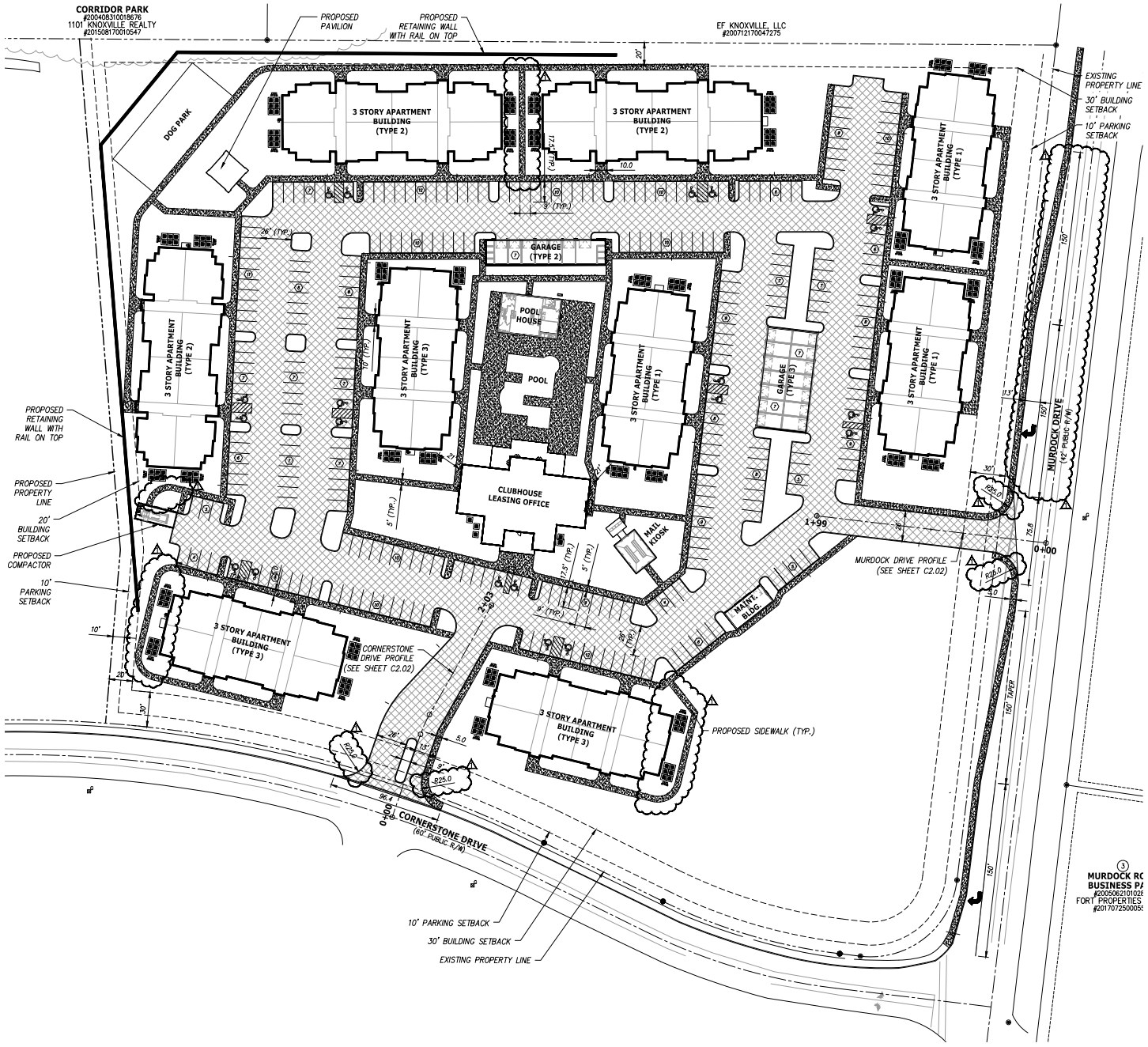
Map No: 131
Jurisdiction: County

0 500
Feet

N

Original Print Date: 2/9/2021 Revised:

*Knoxville - Knox County Planning Commission * City / County Building * Knoxville, TN 37902*



GRID NORTH
NAD 83 (1995)
NAVD 88

0 40 80
SCALE: 1" = 40'

COORDINATES HAVE BEEN DATUM ADJUSTED BY A SCALE FACTOR 1.0001

PROPOSED DEVELOPMENT

MULTI-FAMILY RESIDENTAIL:	
TOTAL UNITS	216 UNITS
TOTAL ACREAGE	12.35 AC.
UNITS PER ACRE	17.5 UNITS/AC.

PARKING TABLE

REQUIRED:

1½ SPACES/UNIT FOR THE FIRST 20 UNITS

1 BEDROOM UNITS: 72 UNITS

1½ SPACES/UNIT FOR THE FIRST 20 UNITS
1 ½ x 20 UNITS = 30 SPACES
PLUS 1 SPACE/UNIT IN EXCESS OF 20 UNITS
1 x 52 UNITS = 52 SPACES

2 OR MORE BEDROOM UNITS: 144 UNITS

1½ SPACES/UNIT IN EXCESS OF 20 UNITS
1 ½ x 144 = 216 SPACES

TOTAL SPACES REQUIRED: 298 SPACES
30 + 52 + 216 = 298

TOTAL SPACES PROVIDED: 329 SPACES

TOTAL STANDARD SPACES	288 SPACES
TOTAL ACCESSIBLE SPACES	20 SPACES
REQUIRED (301–400) 6 STANDARD +2 VAN =8 TOTAL	
GARAGE SPACES	21 SPACES

TTCDA MAXIMUM SPACES ALLOWED: 521 SPACES

175% MINIMUM REQUIRED SPACES

TTCDA DEVELOPMENT INTENSITY GUIDELINES

GROUND AREA COVERAGE (GAC): 20%
GAC=GROSS BUILDING AREA /GROSS LOT AREA
2.48 AC/12.35 AC=0.20
REQUIRED: GAC NOT TO EXCEED 25%

FLOOR AREA RATIO (FAR): 55%
FAR=GROSS FLOOR AREA/GROSS LOT AREA
6.81 AC/12.35 AC=0.56
REQUIRED: FAR NOT TO EXCEED 30%

IMPERVIOUS AREA RATIO (IAR): 52%
IAR=GROSS IMPERVIOUS AREA/GROSS LOT AREA
6.41 AC/12.35 AC=0.52
REQUIRED: IAR NOT TO EXCEED 70%

PROPOSED TRAFFIC IMPROVEMENTS

1. INSTALL STOP SIGNS AT THE SITE ACCESS LOCATIONS ON THE SITE ACCESS APPROACHES TO CORNERSTONE DRIVE AND MURDOCK DRIVE.
2. AT THE INTERSECTION OF CORNERSTONE DRIVE AT MURDOCK DRIVE, SHORTEN THE EXISTING WESTBOUND RIGHT–TURN LANE STORAGE FROM 250' TO 150' AND SHORTEN THE EXISTING RIGHT–TURN LANE TAPER FROM 200' TO 150' TO ALLOW FOR THE PROPOSED SITE ACCESS ALONG MURDOCK DRIVE TO BE INSTALLED OUTSIDE OF THE EXISTING RIGHT–TURN LANE TAPER.
3. AT THE PROPOSED SITE ACCESS INTERSECTION ALONG MURDOCK DRIVE, INSTALL A WESTBOUND RIGHT–TURN LANE WITH 150 FEET OF STORAGE AND A 150–FOOT TAPER.

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC DATA SHOWN WAS PROVIDED BY CANNON & CANNON, INC. DATED 10/26/2020.
2. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TAKEN FROM OUTSIDE FACE OF BUILDING AND/OR FACE OF CURB.
3. THE MINERAL AGGREGATE BASE AND ASPHALTIC SURFACE COURSES SHALL MEET THE MATERIALS, EQUIPMENT, CONSTRUCTION, AND TESTING REQUIREMENTS OF THESE DRAWINGS, AND KNOX COUNTY STANDARD SPECIFICATIONS.
4. PROPERTY CONCERNED REFLECTS PARCEL 69 AS SHOWN ON KNOX COUNTY CLT TAX MAP NO. 131. ZONING FOR THE PROPERTY IS OB/TO "OFFICE, MEDICAL, AND RELATED SERVICES ZONE/TECHNOLOGY OVERLAY ZONE". TOTAL AREA IS 12.35± ACRES. THE TOTAL DISTURBED AREA IS APPROXIMATELY 12± ACRES.
5. TRAFFIC CONTROL DEVICES AND PAVEMENT MARKING SHALL CONFORM TO THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
6. ALL SETBACKS SHALL BE IN ACCORDANCE WITH THE KNOX COUNTY ZONING ORDINANCE.
7. OWNER: USCC REAL ESTATE CORP. – UNITED STATES CELLULAR CORPORATION, ATTN: DAVID BRIGGS P.O. BOX 31369, CHICAGO, IL 60631
8. PERIMETER SLOPES SHALL BE LANDSCAPED AND ARE NOT TO EXCEED 2:1 (H:V) UNLESS PROPER STABILIZATION IS PROPOSED BY A GEOTECHNICAL ENGINEER.
9. PROPOSED LANDSCAPE WILL COMPLY WITH KNOX COUNTY STANDARDS.

LEGEND

- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- EXIST. R.O.W.
- BUILDING SETBACK LINE
- EXIST. EASEMENT LINE
- 1 / C3.01 — DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- 22 — NUMBER OF PARKING SPACES
- 1 — COORDINATE POINT
- ACCESSIBLE PARKING
- ACCESSIBLE RAMP

3-C-21-UR
3-A-21-TOB

NOT FOR CONSTRUCTION

REVISIONS	DATE
UOR AND TTCDA COMMENTS	02-22-2021

CANNON+CANNON

CLIENT:
BERKLEY HALL COMPANIES
500 D STREET
GREENSBORO, NORTH CAROLINA 27405
(336)451 9413

PROJECT:
875 CORNERSTONE MULTI-FAMILY
875 CORNERSTONE DRIVE
KNOXVILLE, TENNESSEE 37932

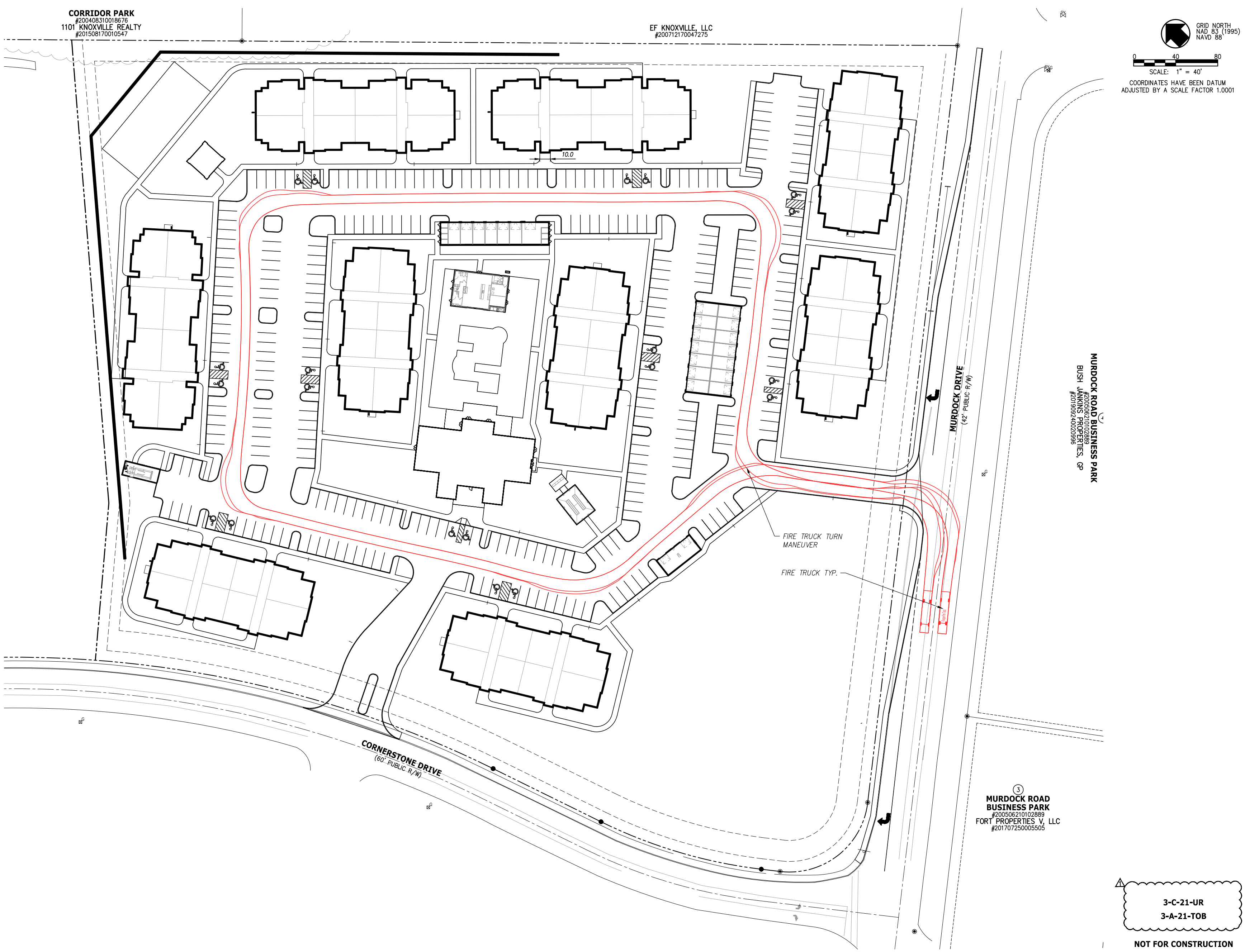
SITE LAYOUT PLAN

ANN W. GRISSOM — REGISTERED LANDSCAPE ARCHITECT — STATE OF TENNESSEE

C&I PROJECT NO.	01554-0000		
DRAWING DATE	FEBRUARY 22, 2021		
PM	AWG	PIC	-
DRAWN	DKN	CHECKED	-

02-22-2021

UOR1.01



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3. THE MINERAL AGGREGATE BASE AND ASPHALTIC SURFACE COURSES SHALL MEET THE MATERIALS, EQUIPMENT, CONSTRUCTION, AND TESTING REQUIREMENTS OF THESE DRAWINGS, AND KNOX COUNTY STANDARD SPECIFICATIONS.
4. PROPERTY CONCERNED REFLECTS PARCEL 69 AS SHOWN ON KNOX COUNTY CLT TAX MAP NO. 131. ZONING FOR THE PROPERTY IS OB/TO "OFFICE, MEDICAL, AND RELATED SERVICES ZONE/TECHNOLOGY OVERLAY ZONE". TOTAL AREA IS 12.35± ACRES. THE TOTAL DISTURBED AREA IS APPROXIMATELY 12± ACRES.
5. TRAFFIC CONTROL DEVICES AND PAVEMENT MARKING SHALL CONFORM TO THE FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES."
6. ALL SETBACKS SHALL BE IN ACCORDANCE WITH THE KNOX COUNTY ZONING ORDINANCE.
7. OWNER: USCC REAL ESTATE CORP. – UNITED STATES CELLULAR CORPORATION, ATTN: DAVID BRIGGS P.O. BOX 31369, CHICAGO, IL 60631
8. PERIMETER SLOPES SHALL BE LANDSCAPED AND ARE NOT TO EXCEED 2:1 (H:V) UNLESS PROPER STABILIZATION IS PROPOSED BY A GEOTECHNICAL ENGINEER.
9. PROPOSED LANDSCAPE WILL COMPLY WITH KNOX COUNTY STANDARDS.
10. REFER TO SHEET C0.02 FOR HORIZONTAL CONTROL INFORMATION.

LEGEND

- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- PROPOSED LIGHT DUTY ASPHALT PAVEMENT
- EXIST. R.O.W.
- BUILDING SETBACK LINE
- EXIST. EASEMENT LINE
- 1 / C3.01 — DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- 22 — NUMBER OF PARKING SPACES
- 1 — COORDINATE POINT
- ACCESSIBLE PARKING
- ACCESSIBLE RAMP

REVISIONS	DATE
1 UOR AND TTCDA COMMENTS	02-22-2021

CLIENT:
BERKLEY HALL COMPANIES
500 D STREET
GREENSBORO, NORTH CAROLINA 27405
(336)451 9413

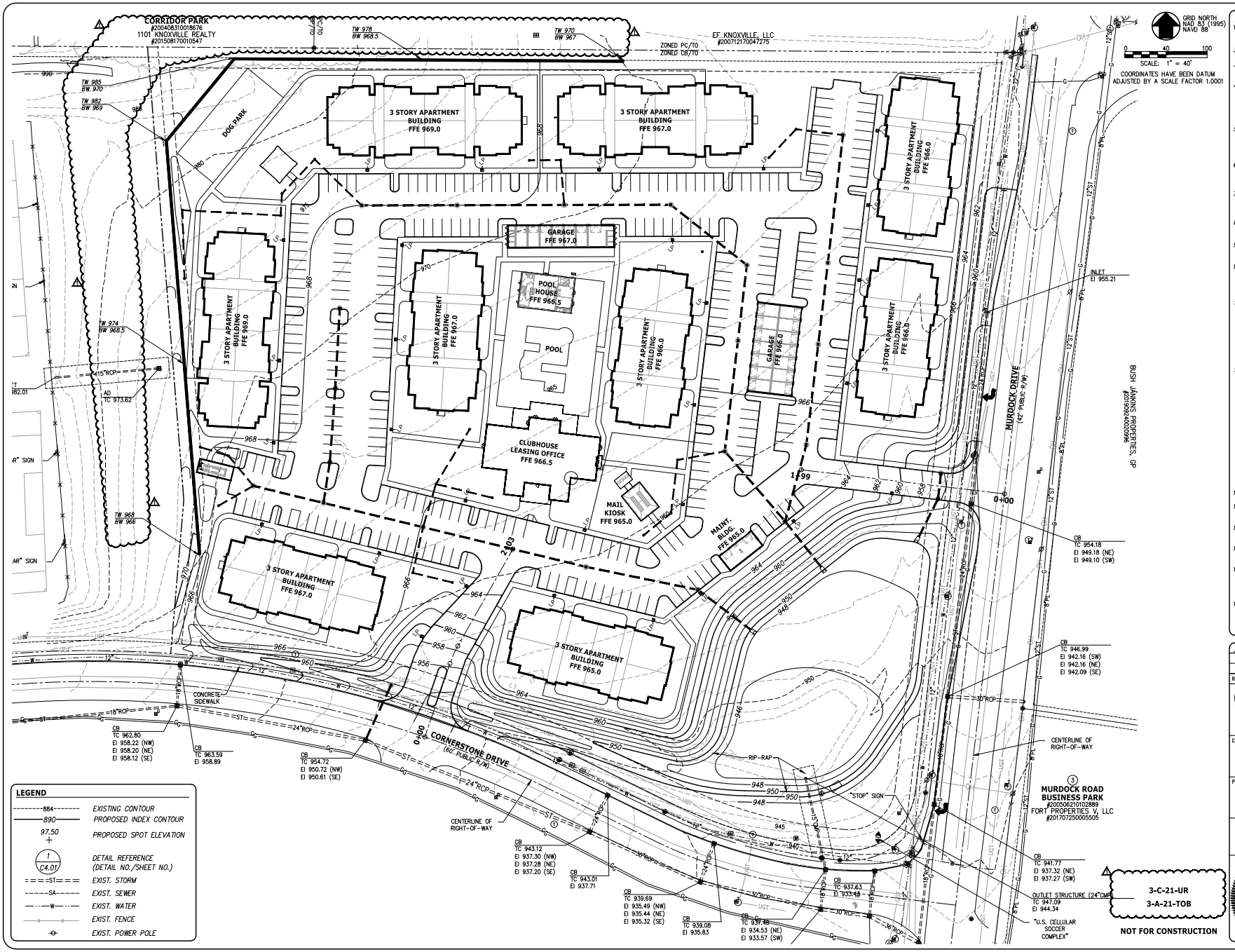
PROJECT:
875 CORNERSTONE MULTI-FAMILY
875 CORNERSTONE DRIVE
KNOXVILLE, TENNESSEE 37932

TRUCK TURN PLAN

ALAN W. GRISSOM REGISTERED ENGINEER AGRICULTURE COMMERCE No. 117399 STATE OF TENNESSEE 02-22-2021

CCI PROJECT NO.	01554-0000		
DRAWING DATE	FEBRUARY 22, 2021		
PM	AWG	PIC	-
DRAWN	DKN	CHECKED	-

UOR1.02



LEGEND

884	EXISTING CONTOUR
890	PROPOSED INDEX CONTOUR
97.50 +	PROPOSED SPOT ELEVATION
1 / C4.01	DETAIL REFERENCE (DETAIL NO./SHEET NO.)
ST	EXIST. STORM
SA	EXIST. SEWER
W	EXIST. WATER
	EXIST. FENCE
	EXIST. POWER POLE

NOTES:

1. THE BOUNDARY AND TOPOGRAPHIC DATA SHOWN WAS PROVIDED BY CANNON AND CANNON, INC. DATED 10/26/2020.
2. THE DISTURBED AREA IS APPROXIMATELY 12± ACRES. THE TOTAL SITE AREA IS APPROXIMATELY 12.35± ACRES.
3. UNLESS NOTED OTHERWISE, THE PROPOSED GRADES SHOWN ON THESE DRAWINGS ARE FINISH GRADE. EXISTING AND PROPOSED CONTOURS ARE SHOWN AT 2 FT. INTERVALS.
4. EROSION CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK. THE DEVICES SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES AS NEEDED.
5. THE SITE SHALL BE CLEARED AND GRUBBED WITHIN THE LIMITS OF EXCAVATION. COMPLETELY DISPOSE OF ALL MATERIALS RESULTING FROM CLEARING AND GRUBBING OFF-SITE OR ON-SITE AT A LOCATION DETERMINED BY THE OWNER.
6. ALL TREE STUMPS, BOULDERS, AND OTHER OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF 2 FT BELOW THE SUBGRADE. ROCK SHALL BE SCARIFIED TO A DEPTH OF 1 FT BELOW SUBGRADE.
7. STRIP TOPSOIL TO A MINIMUM DEPTH OF 8-IN. AND TEMPORARILY STOCKPILE EXCAVATED MATERIALS. INSTALL SILT FENCE OR OTHER APPROPRIATE EROSION CONTROL STRUCTURES ON THE DOWN HILL SIDE OF THE STOCKPILE.
8. PROOF ROLL AREAS TO RECEIVE FILL AND PLACE FILL IN ACCORDANCE WITH THE SITE SPECIFIC REPORT OF GEOTECHNICAL EXPLORATION PREPARED BY GeoServices.
9. A 4 IN. (MIN) LAYER OF TOPSOIL SHALL BE PLACED OVER THE AREAS TO BE SEEDED AND TO THE FINISH GRADE ELEVATIONS AS SHOWN ON THE DRAWINGS.
10. ALL NEWLY GRADED EARTHEN AREAS THAT ARE NOT TO BE PAVED, STABILIZED, OR SODDED SHALL BE SEEDED, FERTILIZED, AND MULCHED WITHIN 30 DAYS OF ATTAINMENT OF FINAL GRADE.
11. TEMPORARY SEEDING MIXTURES SHALL BE AS FOLLOWS:

SEEDING DATES	GRASS SEED	PERCENTAGES
1/1 TO 5/1	ITALIAN RYE	33%
	KOREAN LESPEDEZA	33%
	SUMMER OATS	34%
5/1 TO 7/15	SUDAN - SORGHUM	100%
5/1 TO 7/15	STAR MILLET	100%
7/15 TO 1/1	BALBOA RYE	67%
	ITALIAN RYE	33%

12. PERMANENT SEEDING MIXTURES SHALL BE AS FOLLOWS:

SEEDING DATES	GRASS SEED	PERCENTAGES
2/1 TO 7/1	KENTUCKY 31 FESCUE	80%
	KOREAN LESPEDEZA	15%
	ENGLISH RYE	5%
6/1 TO 8/15	KENTUCKY 31 FESCUE	55%
	ENGLISH RYE	20%
	KOREAN LESPEDEZA	15%
	GERMAN MILLET	10%
4/15 TO 8/15	BERMUDAGRASS (HULLED)	70%
	ANNUAL LESPEDEZA	30%
8/1 TO 12/1	KENTUCKY 31 FESCUE	70%
	ENGLISH RYE	20%
	WHITE CLOVER	10%
2/1 TO 12/1	KENTUCKY 31 FESCUE	70%
	CROWN VETCH	25%
	ENGLISH RYE	5%

13. MULCH WITH STRAW AT A RATE OF 100 LBS./1000 S.F. OVER THE SEEDED AREAS.
14. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS OR POND ON-SITE. PROVIDE NECESSARY MEASURES TO KEEP THE SITE FREE-DRAINING.
15. NO SLOPE SHALL EXCEED 2:1 (H:V). ALL SLOPES STEEPER THAN 3:1 TO RECEIVE EXTENDED TERM EROSION CONTROL BLANKET.
16. TO PREVENT EROSION, ALL SLOPES 2:1 OR GREATER ARE TO BE TRACKED WITH A DOZER TO FORM CLEAT MARKS PARALLEL TO THE CONTOUR.
17. APPLY TEMPORARY SEEDING WHENEVER GRADING OPERATIONS ARE HALTED FOR OVER 14 DAYS AND FINAL GRADING OF EXPOSED SURFACE IS TO BE COMPLETED WITHIN ONE YEAR. APPLY TEMPORARY SEEDING TO ALL SOIL STOCKPILES.
18. APPLY PERMANENT SEEDING WHENEVER GRADING OPERATIONS ARE COMPLETED AND ALL CONSTRUCTION OPERATIONS WILL NOT IMPACT THE DISTURBED AREA. APPLY PERMANENT SEEDING TO ALL NON-CONSTRUCTION AREAS WHICH SHOW SIGNS OF EXCESSIVE EROSION.

REVISIONS	DATE
UOR AND TTCDA COMMENTS	02-22-2021

CANNON & CANNON INC
CONSULTING ENGINEERS · FIELD SURVEYORS
TEL 865.670.8555 | 8550 Kingston Pike Knoxville, TN 37919
WWW.CANNON-CANNON.COM

CLIENT:
BERKLEY HALL COMPANIES
500 D STREET
GREENSBORO, NORTH CAROLINA 27405
(336)451 9413

PROJECT:
875 CORNERSTONE MULTI-FAMILY
875 CORNERSTONE DRIVE
KNOXVILLE, TENNESSEE 37932

SITE GRADING AND DRAINAGE PLAN

3-C-21-UR
3-A-21-TOB

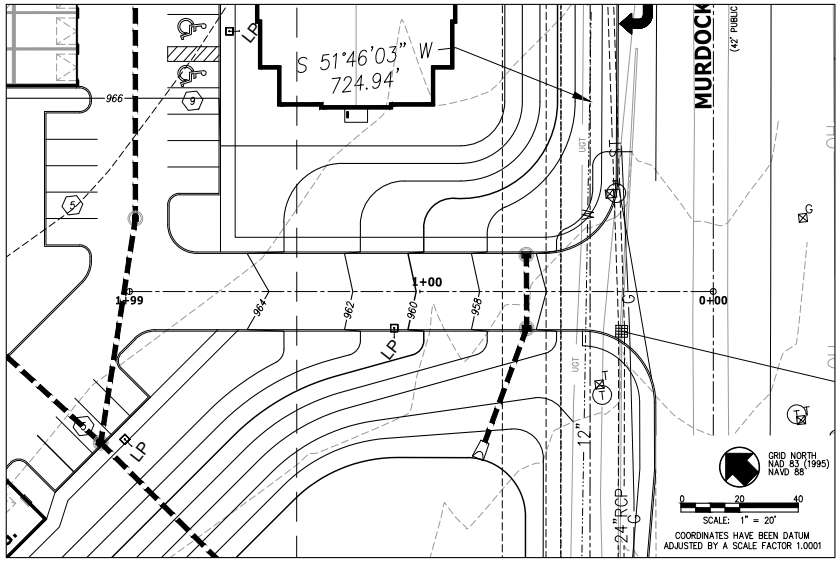
NOT FOR CONSTRUCTION

C&C PROJECT NO.	01554-0000
DRAWING DATE	FEBRUARY 22, 2021
PM AWG	PIC -
DRAWN DKN	CHECKED -

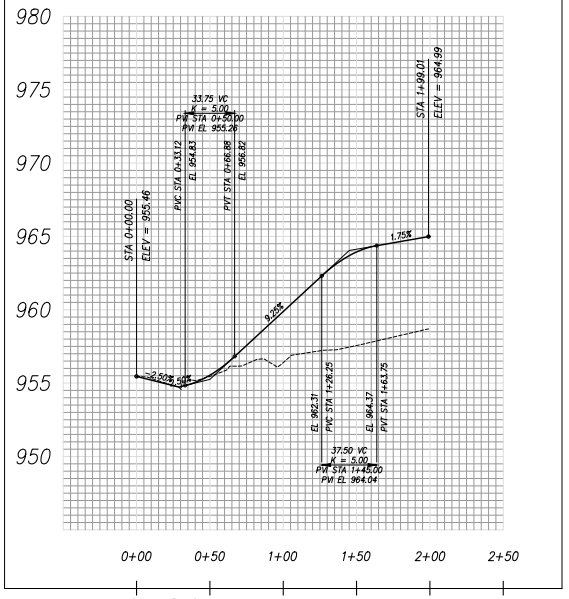
UOR2.01

02-22-2021

DRIVEWAY OFF MURDOCK DRIVE

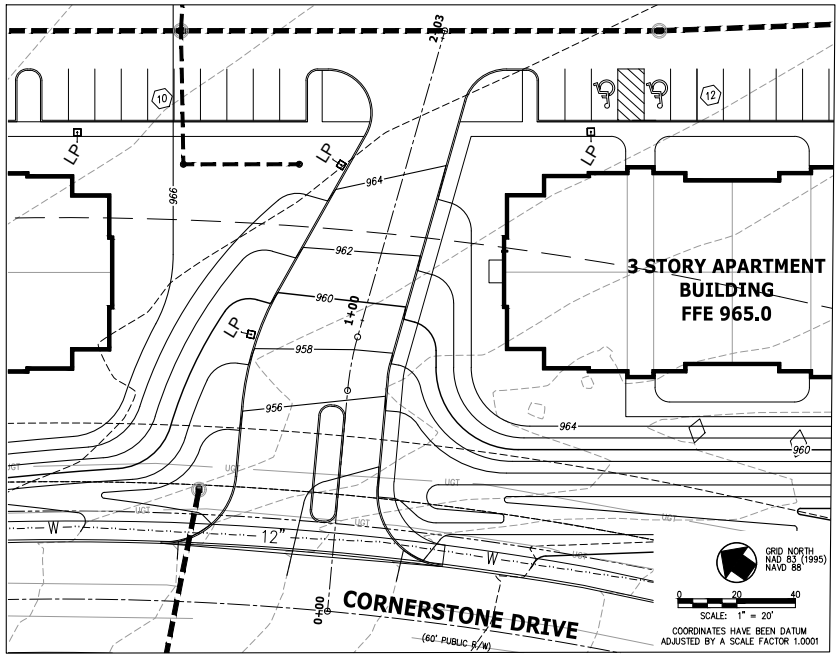


MURDOCK DRIVE CONNECTOR PROFILE

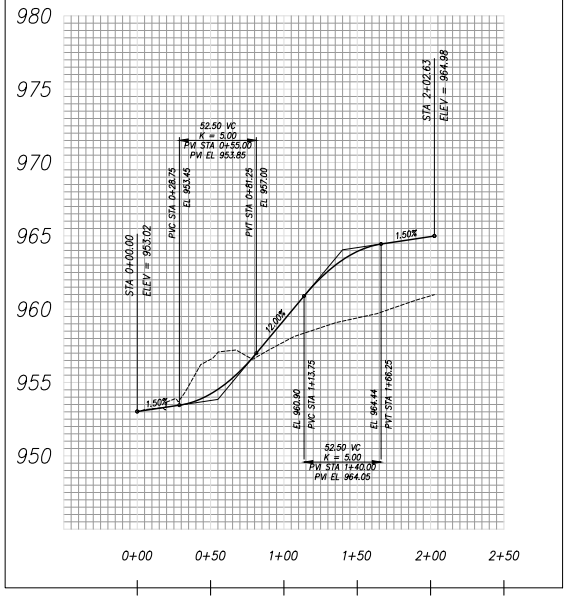


SCALE HORIZ: 1=40' VERT: 1"=10'

DRIVEWAY OFF CORNERSTONE DRIVE



CORNERSTONE DRIVE CONNECTOR PROFILE



SCALE HORIZ: 1=40' VERT: 1"=10'

NOTES:

1. REFER TO SHEET C2.01 FOR GENERAL NOTES AND GRADING PLAN.

3-C-21-UR
3-A-21-TOB

NOT FOR CONSTRUCTION

REVISIONS	DATE
UOR AND TTCDA COMMENTS	02-22-2021

CANNON+CANNON

CLIENT:
BERKLEY HALL COMPANIES
500 D STREET
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(336)451 9413

PROJECT:
875 CORNERSTONE MULTI-FAMILY
875 CORNERSTONE DRIVE
KNOXVILLE, TENNESSEE 37932

DRIVEWAY PROFILES

JAMES W. GAITSON
REGISTERED ENGINEER
AGRICULTURE
CONNECTICUT
STATE OF TENNESSEE
02-22-2021

CCI PROJECT NO.	01554-0000
DRAWING DATE	FEBRUARY 22, 2021
PM AWG	PIC -
DRAWN DKN	CHECKED -

UOR3.01

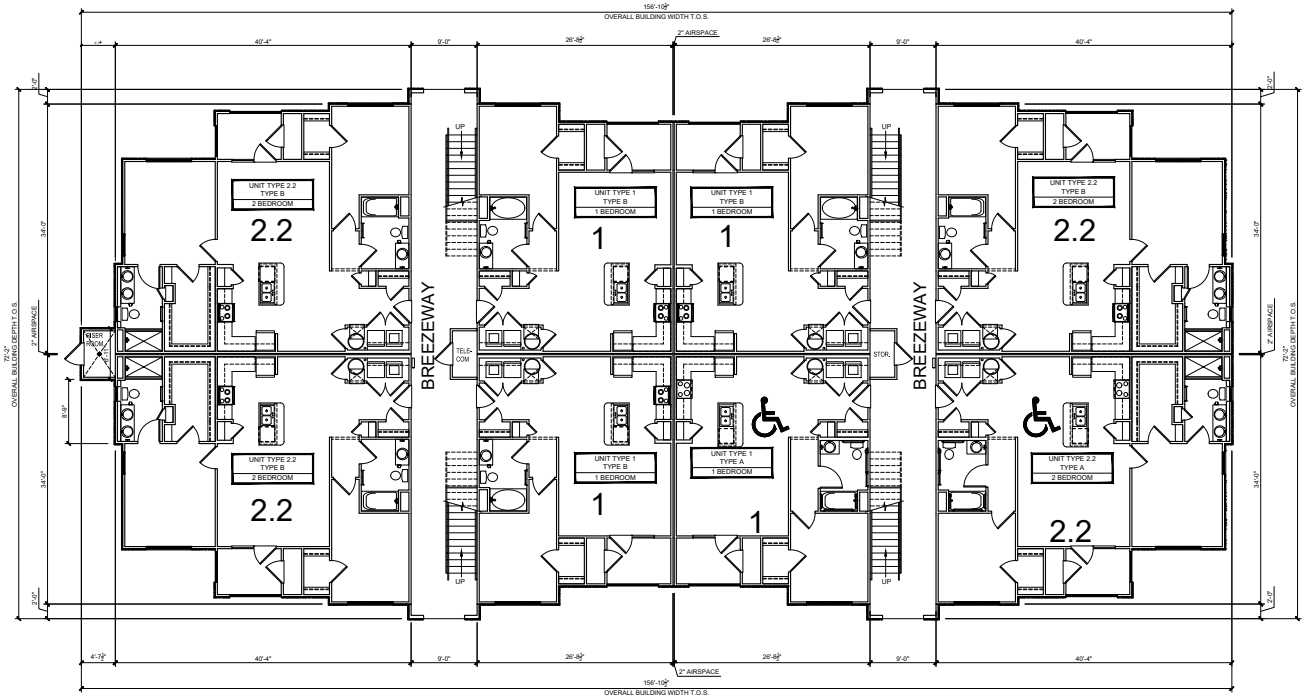
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE

= FULLY ACCESSIBLE
TYPE A DWELLING UNIT

REAR



FRONT

SHEET TITLE:	
	Building Type 1 - First Floor Plan
SHEET NUMBER:	
	A1.10

1 BUILDING TYPE 1 - FIRST FLOOR PLAN

Scale: 1/8" = 1'-0"

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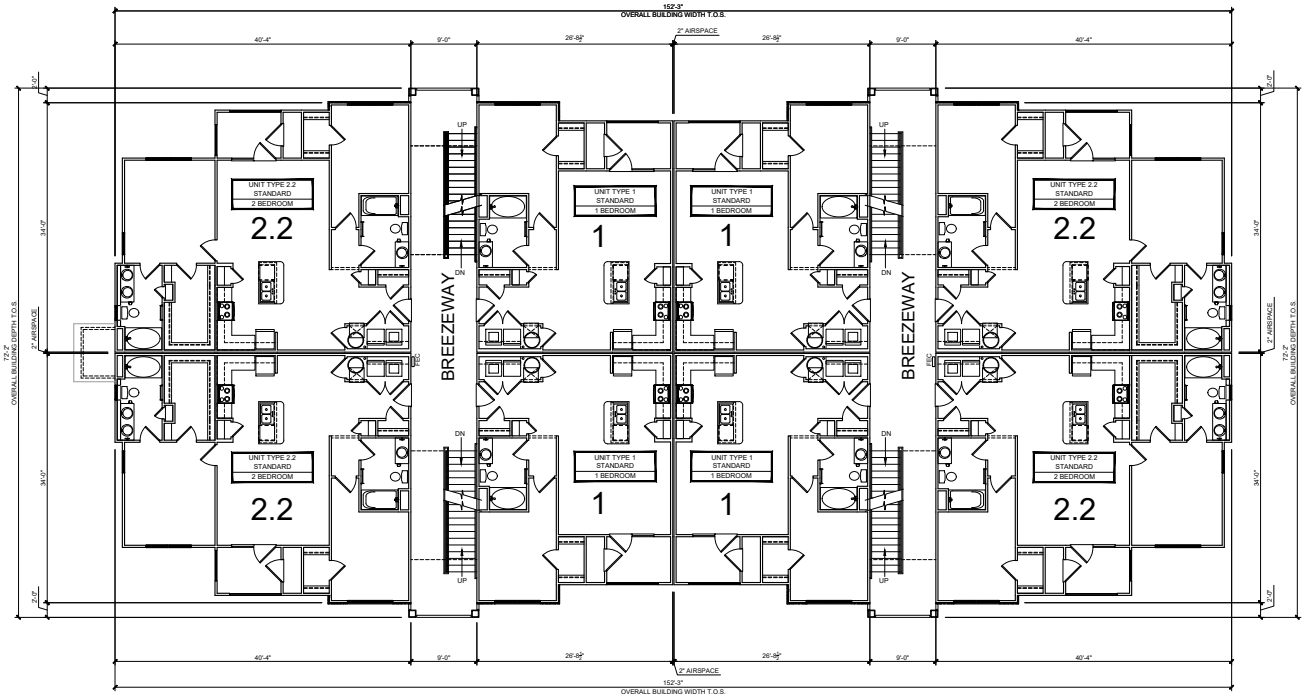
Knoxville, Tennessee

PLANWORX
ARCHITECTURE

REAR



FRONT

1	BUILDING TYPE 1 - SECOND FLOOR PLAN
	Scale: 1/8" = 1'-0"

SHEET TITLE: Building Type 1 - Second Floor Plan

SHEET NUMBER: A1.11

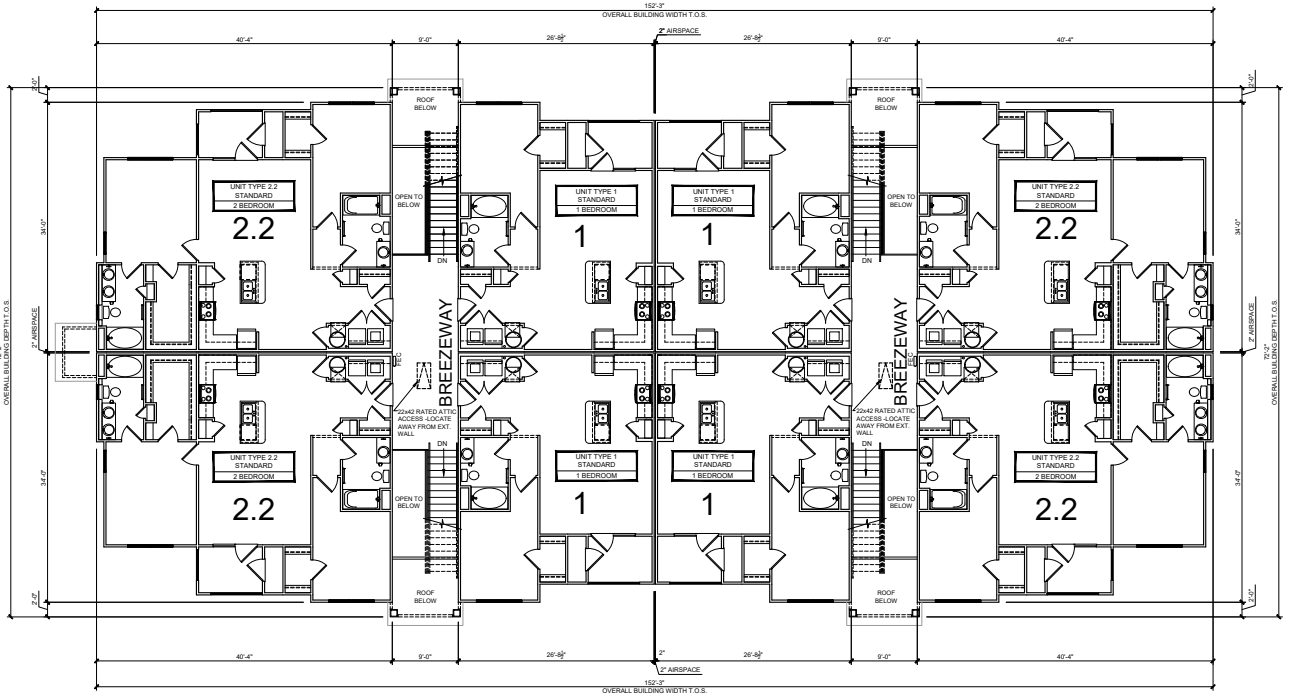
1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 2. Contractor is to notify architect immediately of conditions or items varying from depicted information. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 4. Planworx Architecture, P.A. will not assume any liability for expenses associated with errors and omissions on these drawings unless offset by verified construction savings as a result of Planworx Architecture, P.A. Design. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein. 6. Planworx Architecture, P.A. is not responsible for estimating, maintaining, or regulating construction costs associated with these plans.

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE

REAR



FRONT

1	BUILDING TYPE 1 - THIRD FLOOR PLAN
	Scale: 1/8" = 1'-0"

SHEET TITLE: Building Type 1 - Third Floor Plan

SHEET NUMBER: A1.12

1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein.
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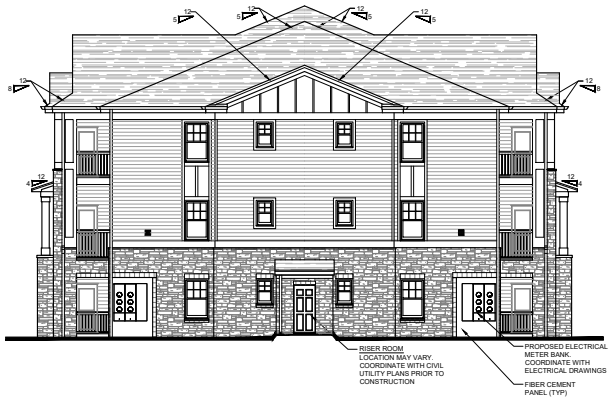
PLANWORX ARCHITECTURE

1 BUILDING TYPE 1 - FRONT/REAR ELEVATION
Scale: 1/8" = 1'-0"



2 BUILDING TYPE 1 - LEFT SIDE ELEVATION
Scale: 1/8" = 1'-0"

3 BUILDING TYPE 1 - RIGHT SIDE ELEVATION
Scale: 1/8" = 1'-0"

ARCHITECTURAL PLANS
EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

SHEET TITLE:
Building Type 1 - Exterior Elevations

SHEET NUMBER:
A1.15

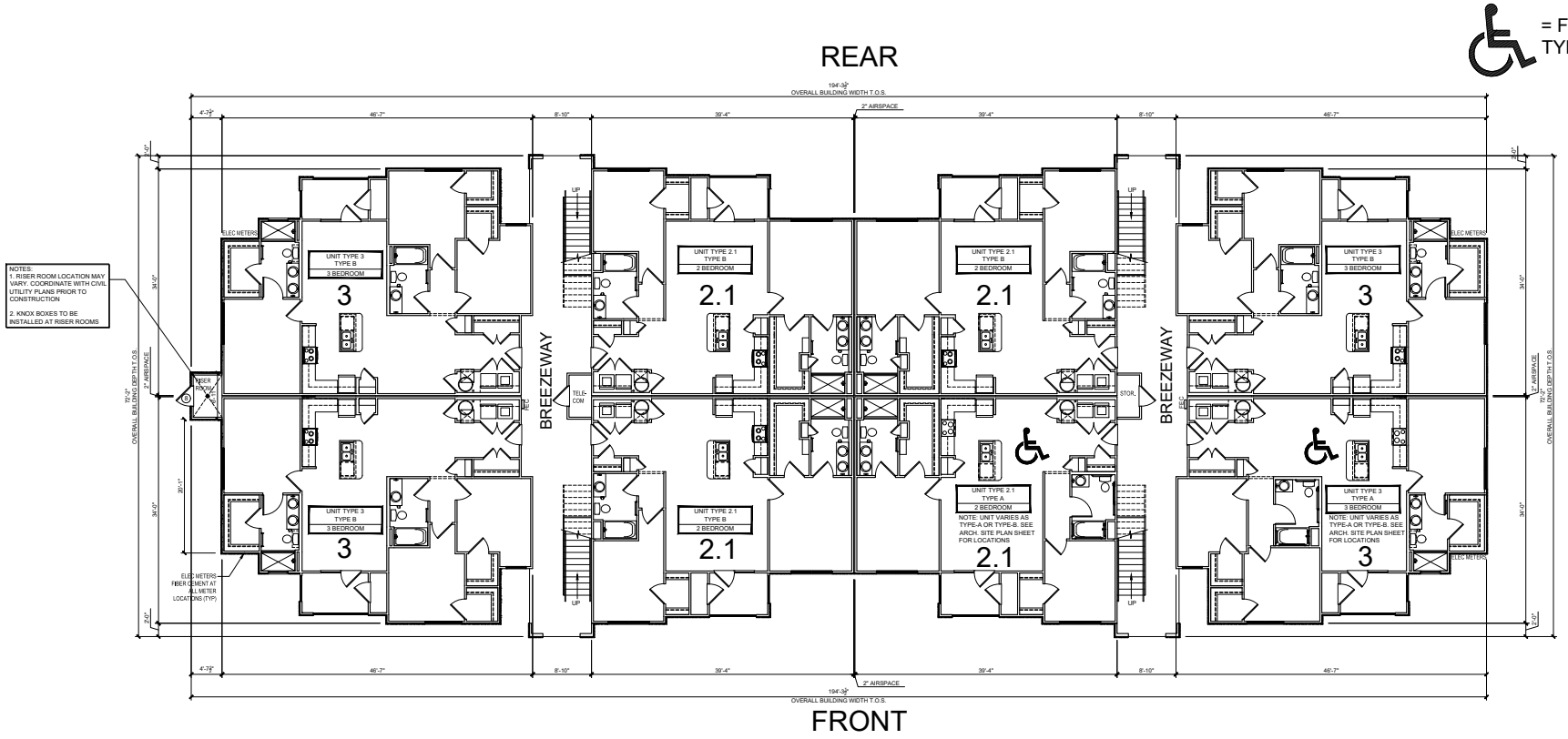
1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 2. Contractor is to notify architect immediately of conditions or items varying from depicted information. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 4. Planworx Architecture, P.A. will not assume any liability for expenses associated with errors and omissions on these drawings unless offset by verified construction savings as a result of Planworx Architecture, P.A. Design. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein. 6. Planworx Architecture, P.A. is not responsible for estimating, maintaining, or regulating construction costs associated with these plans.

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE

= FULLY ACCESSIBLE
TYPE A DWELLING UNIT



1	BUILDING TYPE 2 - FIRST FLOOR PLAN
	Scale: 1/8" = 1'-0"

SHEET TITLE:
Building Type 2 - First Floor Plan

SHEET NUMBER:
A1.20

1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein.
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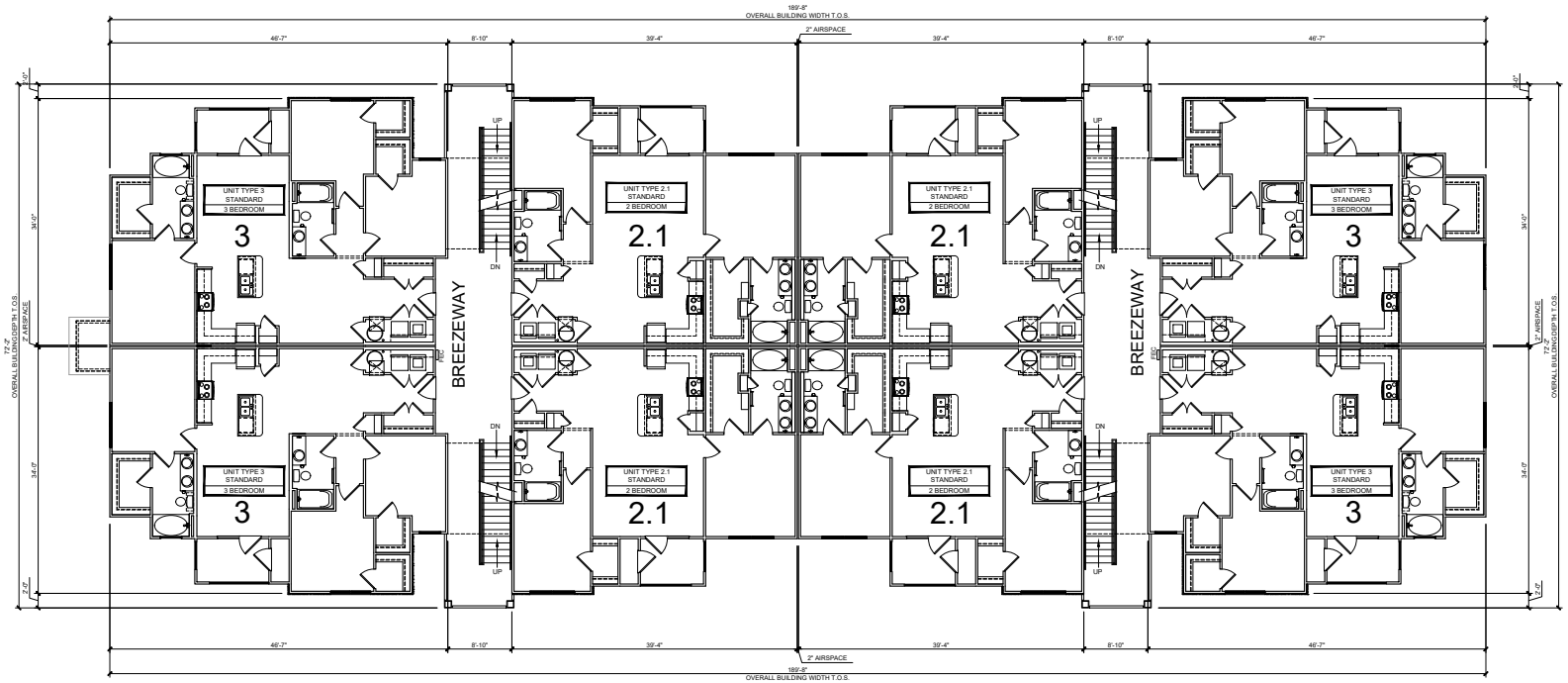
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE

REAR



FRONT

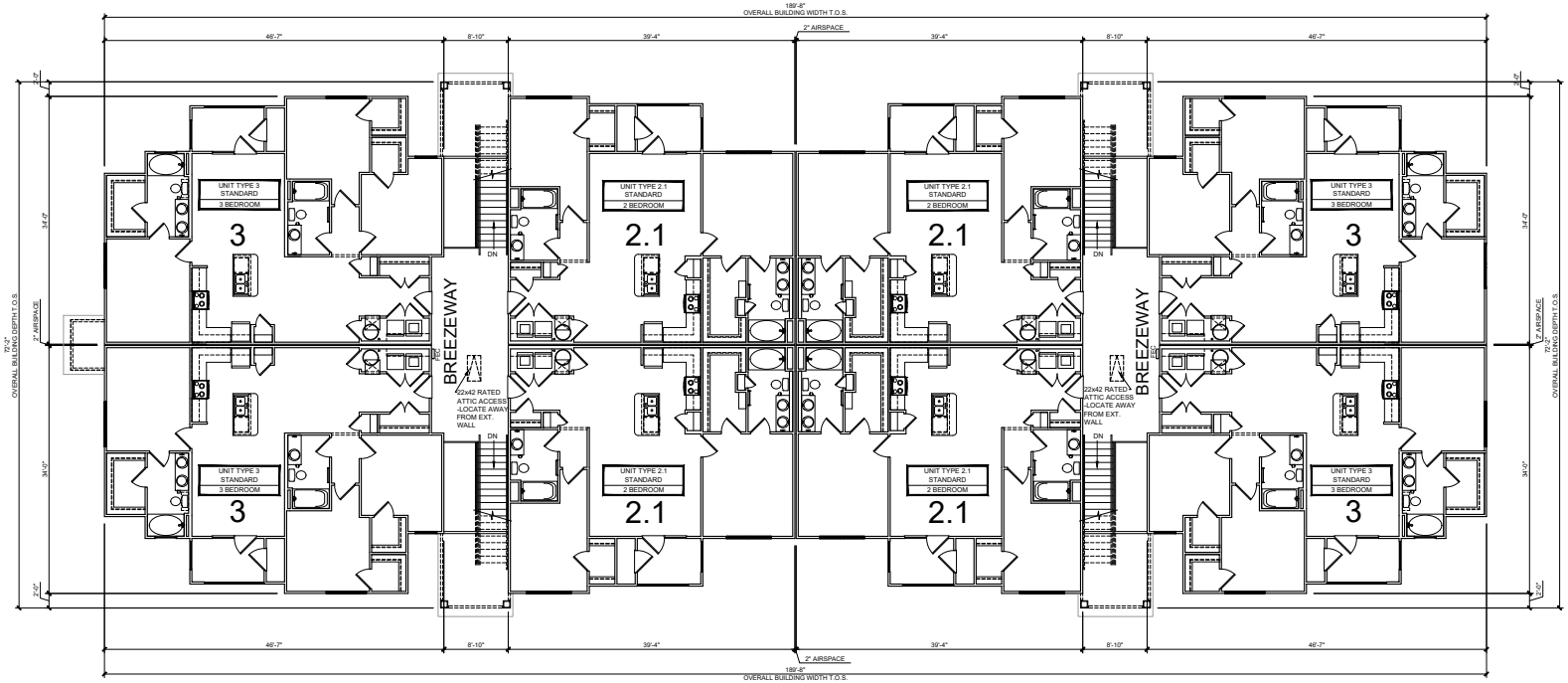
1	BUILDING TYPE 2 - SECOND FLOOR PLAN Scale: 1/8" = 1'-0"	SHEET TITLE: Building Type 2 - Second Floor Plan SHEET NUMBER: A1.21

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE

REAR



FRONT

1	BUILDING TYPE 2 - THIRD FLOOR PLAN
	Scale: 1/8" = 1'-0"

SHEET TITLE: Building Type 2 - Third Floor Plan

SHEET NUMBER: A1.22

1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein.
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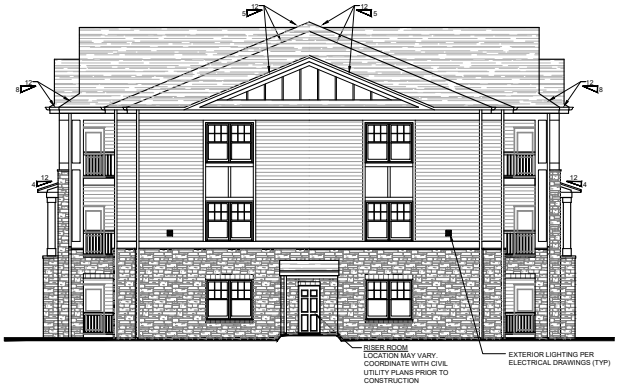
MURDOCK DR APARTMENTS

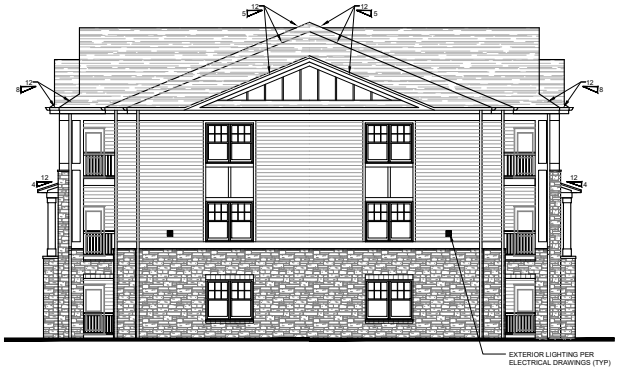
Knoxville, Tennessee

PLANWORX ARCHITECTURE

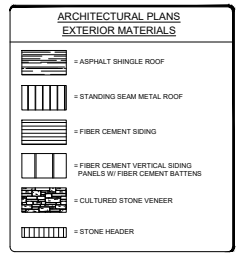
1	BUILDING TYPE 2 - FRONT/REAR ELEVATION
	Scale: 1/8" = 1'-0"



2	BUILDING TYPE 2 - LEFT ELEVATION
	Scale: 1/8" = 1'-0"



3	BUILDING TYPE 2 - RIGHT SIDE ELEVATION
	Scale: 1/8" = 1'-0"



SHEET TITLE: Building Type 2 - Exterior Elevations

SHEET NUMBER: A1.25

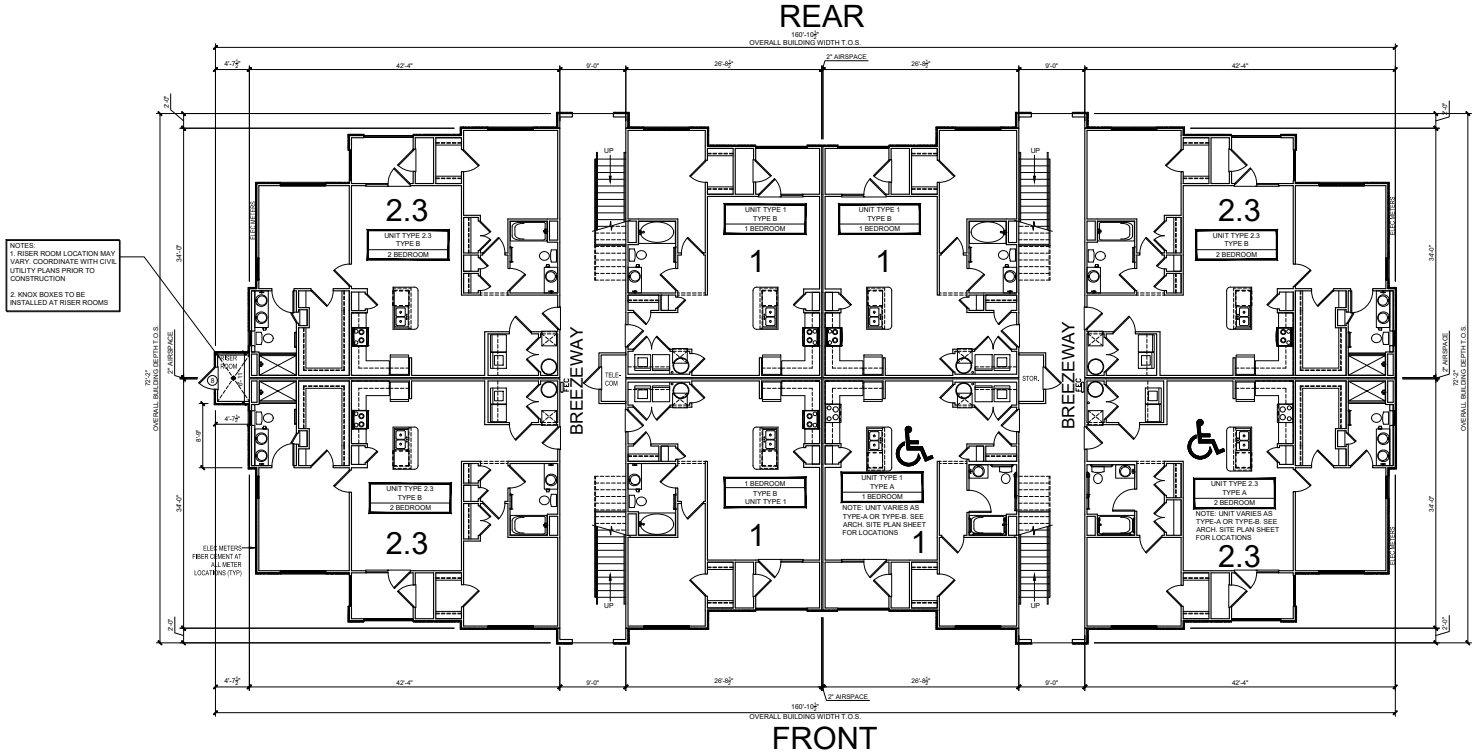
1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 2. Contractor is to notify architect immediately of conditions or items varying from depicted information. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 4. Planworx Architecture, P.A. will not assume any liability for expenses associated with errors and omissions on these drawings unless offset by verified construction savings as a result of Planworx Architecture, P.A. Design. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein. 6. Planworx Architecture, P.A. is not responsible for estimating, maintaining, or regulating construction costs associated with these plans.

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE

= FULLY ACCESSIBLE TYPE A DWELLING UNIT



1	BUILDING TYPE 3 - FIRST FLOOR PLAN
	Scale: 1/8" = 1'-0"

SHEET TITLE: Building Type 3 - First Floor Plan

SHEET NUMBER: A1.30

1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein.
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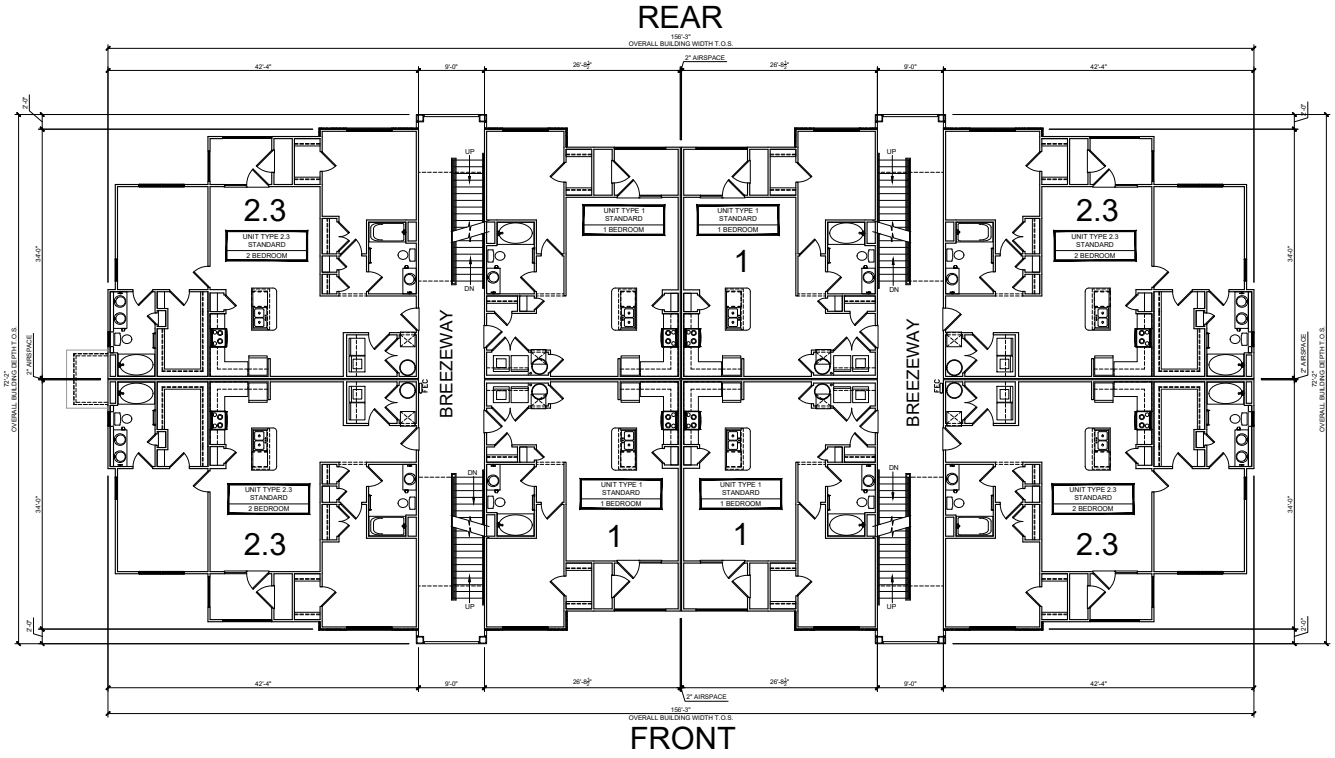
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE



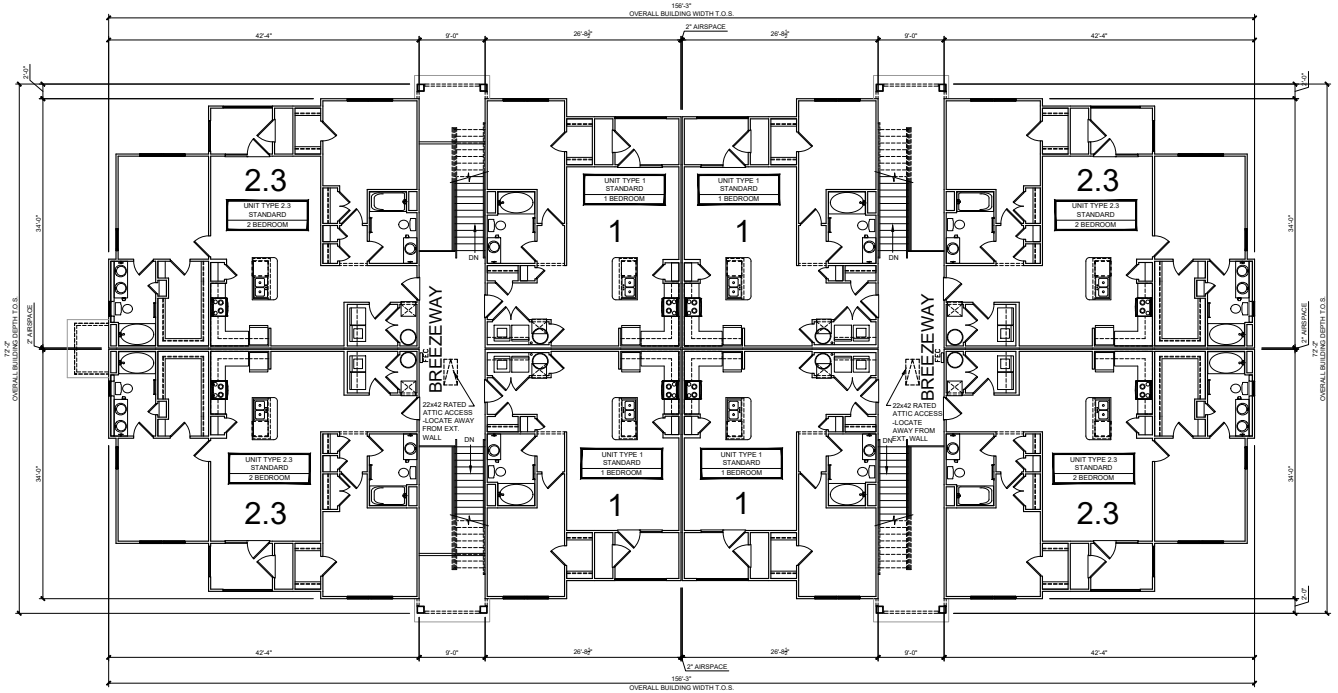
		SHEET TITLE:
1	BUILDING TYPE 3 - SECOND FLOOR PLAN	Building Type 3 - Second Floor Plan
	Scale: 1/8" = 1'-0"	SHEET NUMBER: A1.31

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE

REAR



1	BUILDING TYPE 3 - THIRD FLOOR PLAN Scale: 1/8" = 1'-0"	SHEET TITLE: Building Type 3 - Third Floor Plan SHEET NUMBER: A1.32

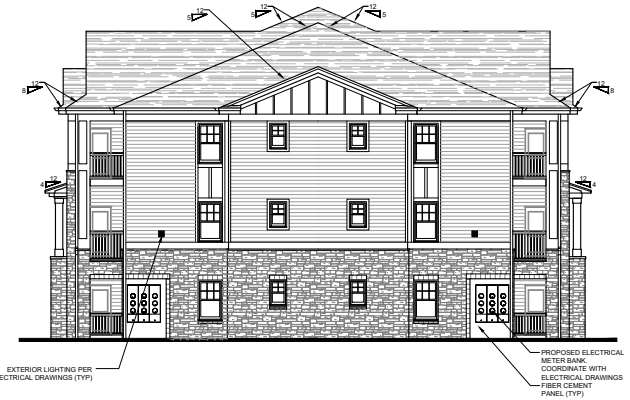
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE

1	BUILDING TYPE 3 - FRONT/REAR ELEVATION
	Scale: 1/8" = 1'-0"

2	BUILDING TYPE 3 - LEFT SIDE ELEVATION
	Scale: 1/8" = 1'-0"



3	BUILDING TYPE 3 - RIGHT SIDE ELEVATION
	Scale: 1/8" = 1'-0"

ARCHITECTURAL PLANS
EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

SHEET TITLE: Building Type 3 - Exterior Elevations

SHEET NUMBER: A1.35

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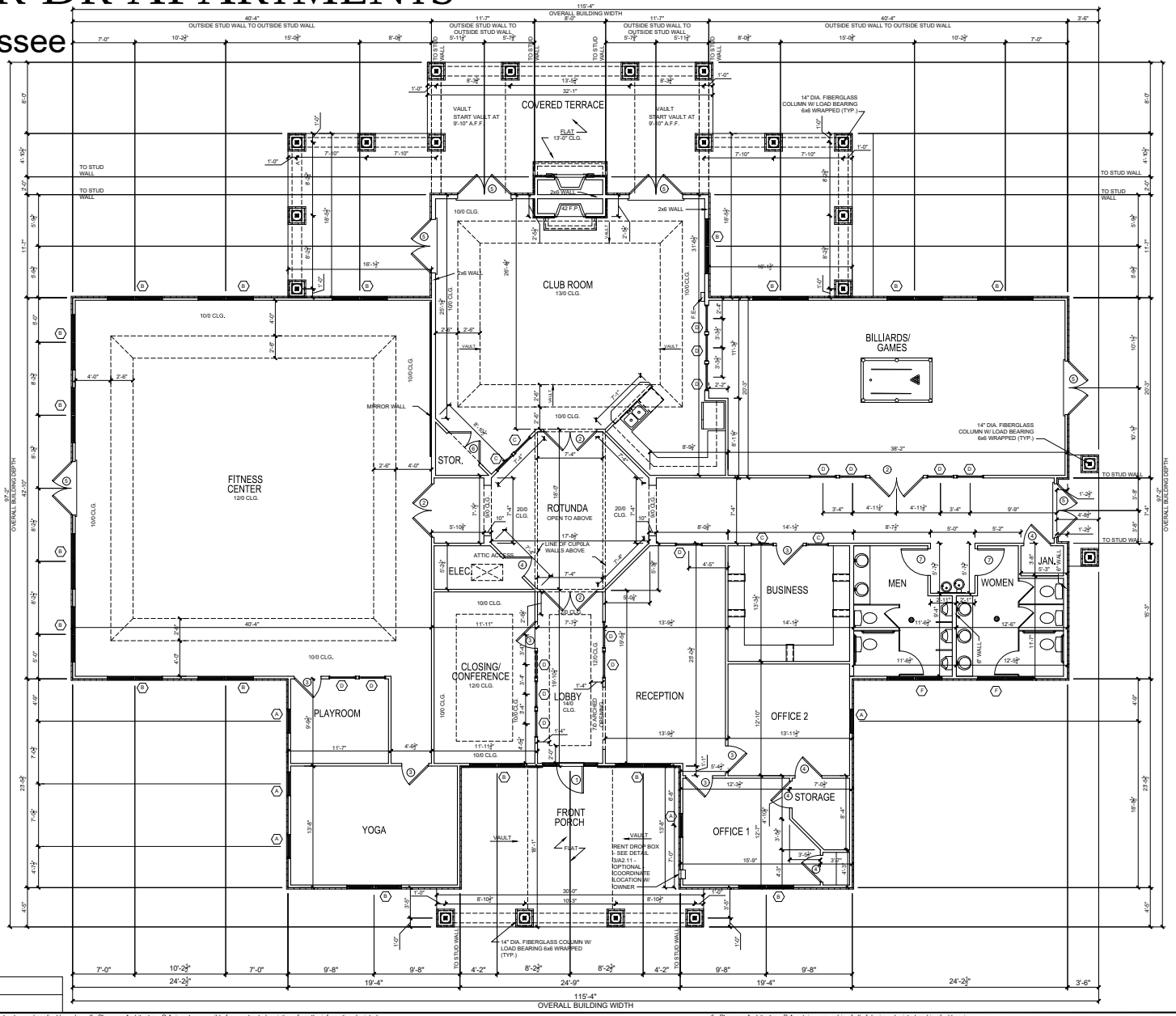
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



SQUARE FOOTAGE	
HEATED (PAINT TO PAINT)=	6,161
HEATED (GROSS)=	6,292
PORCHES=	1,747
BUILDING TOTAL (MINUS BRICK)=	8,039

1 CLUBHOUSE FLOOR PLAN

Scale: 3/16" = 1'-0"

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SHEET TITLE: Clubhouse Floor Plan

A2.10

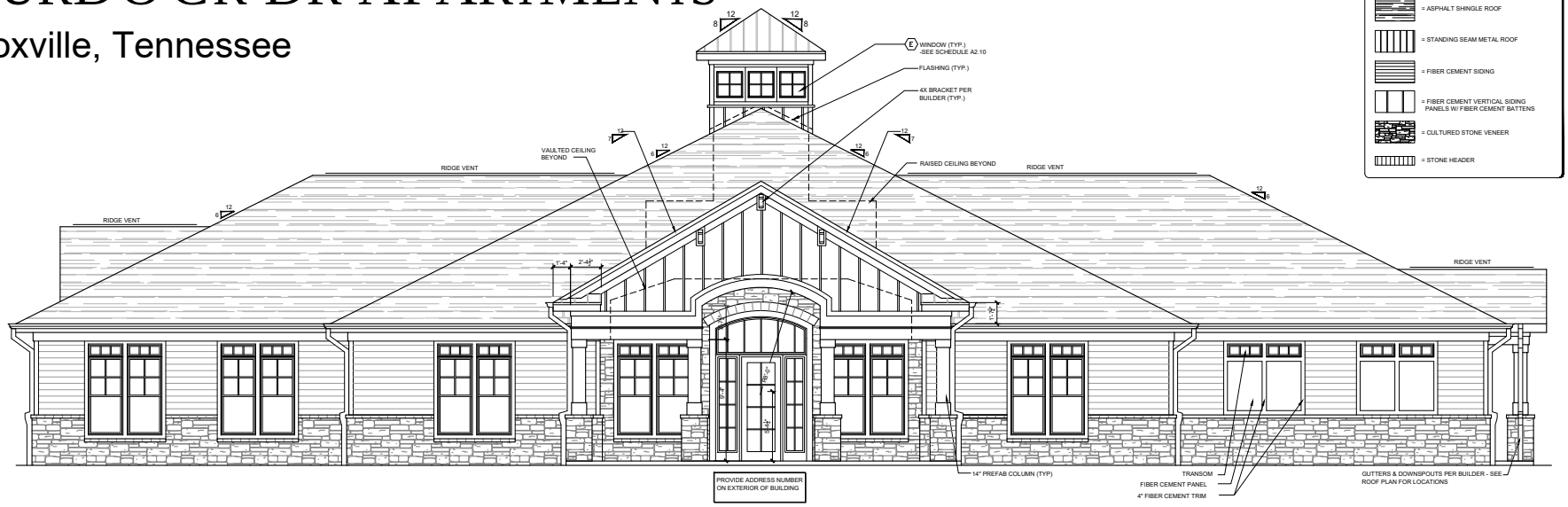
MURDOCK DR APARTMENTS

Knoxville, Tennessee

ARCHITECTURAL PLANS
EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

PLANWORX ARCHITECTURE



1 FRONT ELEVATION - CLUBHOUSE

Scale: 1/4" = 1'-0"

2 LEFT SIDE ELEVATION - CLUBHOUSE

Scale: 1/4" = 1'-0"

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SHEET TITLE: Clubhouse Elevations

SHEET NUMBER: A2.14

MURDOCK DR APARTMENTS

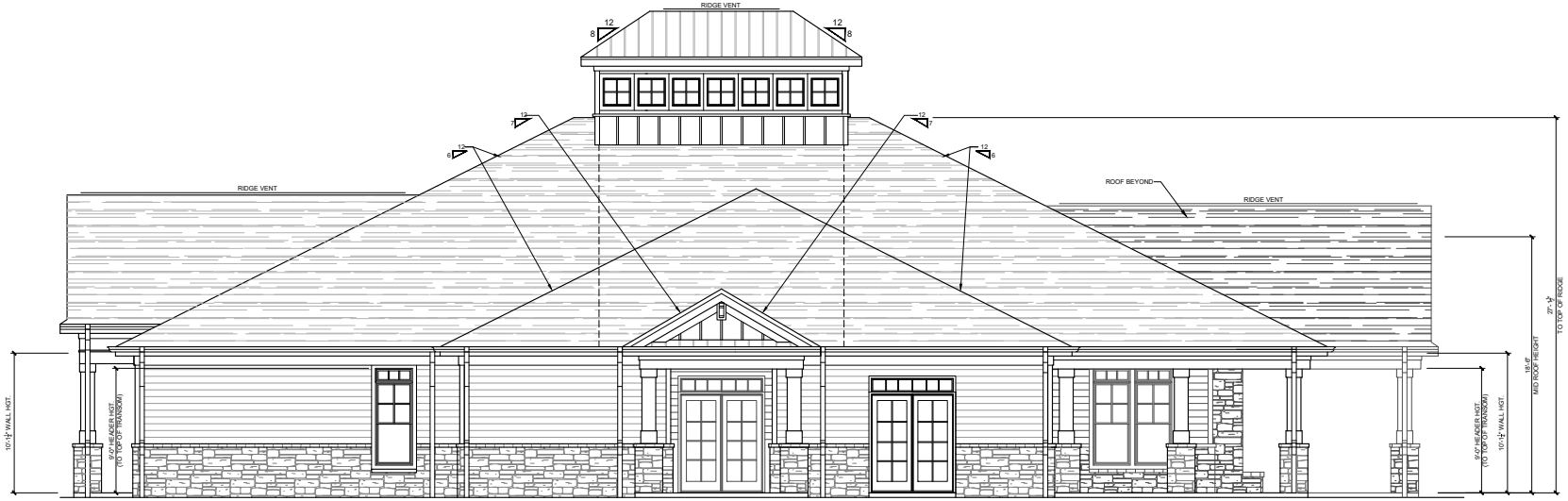
Knoxville, Tennessee

ARCHITECTURAL PLANS
EXTERIOR MATERIALS

= ASPHALT SHINGLE ROOF
= STANDING SEAM METAL ROOF
= FIBER CEMENT SIDING
= FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
= CULTURED STONE VENEER
= STONE HEADER

PLANWORX ARCHITECTURE

1 REAR ELEVATION - CLUBHOUSE
Scale: 1/4" = 1'-0"



2 RIGHT SIDE ELEVATION - CLUBHOUSE
Scale: 1/4" = 1'-0"

SHEET TITLE:
Clubhouse Elevations

SHEET NUMBER:
A2.15

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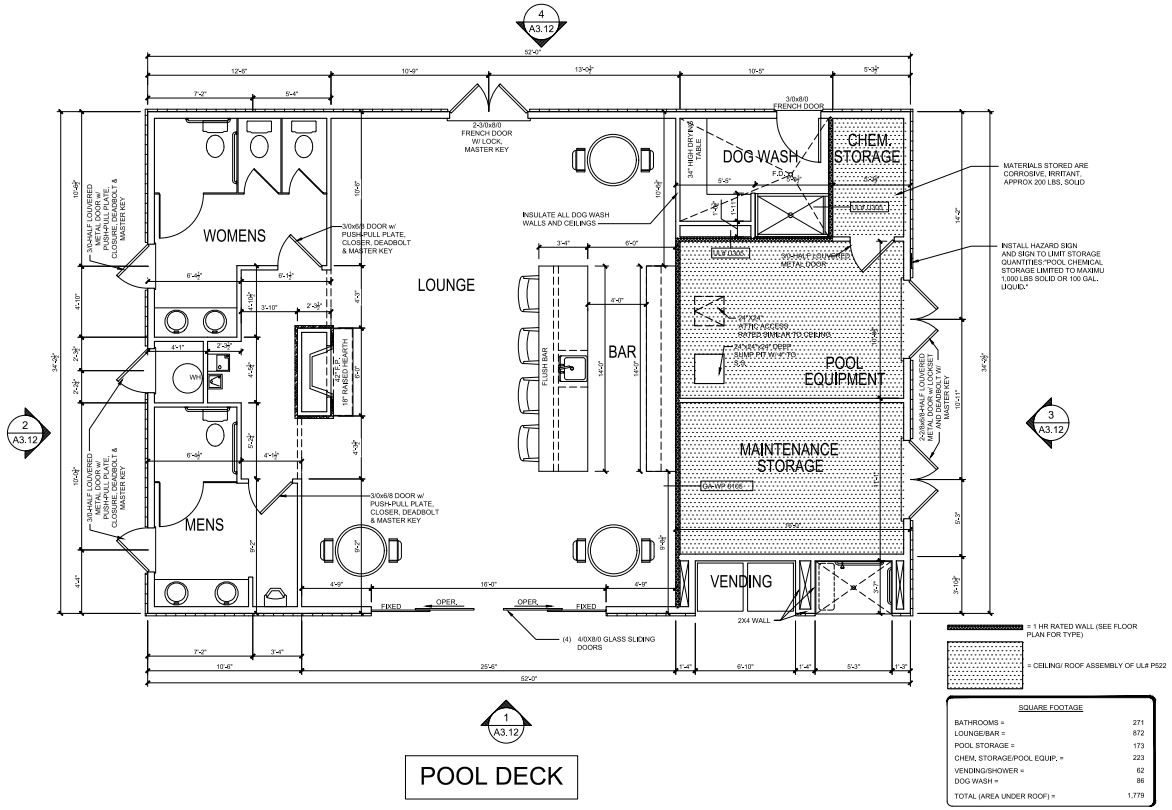
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



SQUARE FOOTAGE	
BATHROOMS =	271
LOUNGE/BAR =	872
POOL STORAGE =	173
CHEM. STORAGE/POOL EQUIP. =	223
VENDING/SHOWER =	62
DOG WASH =	86
TOTAL (AREA UNDER ROOF) =	1,779

1 POOLHOUSE FLOOR PLAN

Scale: 1/4" = 1'-0"

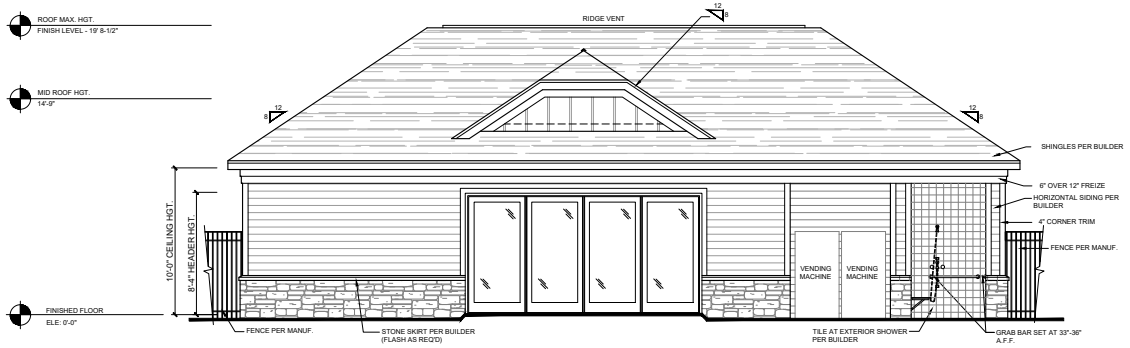
SHEET TITLE: Pool House Floor Plan

A3.10

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



ARCHITECTURAL PLANS
EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

ELEVATION GENERAL NOTES

ROOFS

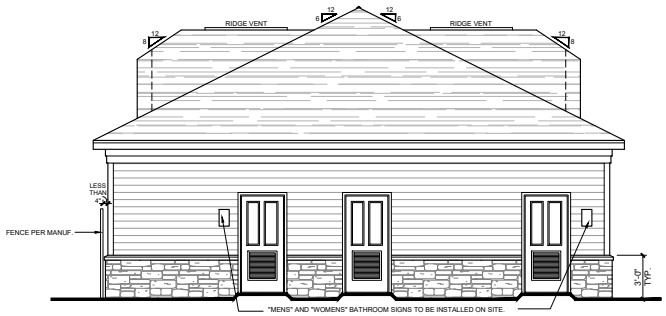
USE ICE AND WATER SHIELD AT ALL ROOF PLANES SLOPED BELOW 4:12.

PAINT ALL ROOF PENETRATIONS TO MATCH SHINGLE COLOR

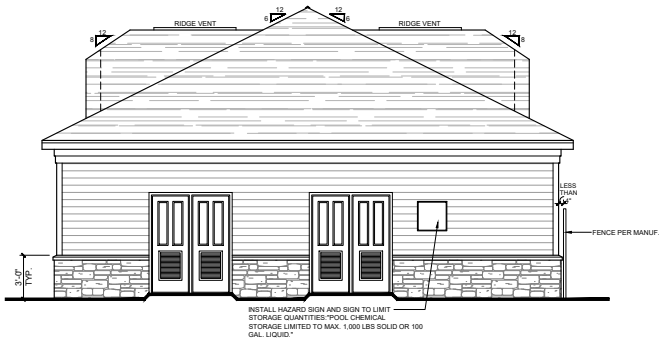
ROOF VENTILATION

SEE ROOF PLANS FOR ATTIC VENTILATION CALCULATION REQUIREMENTS.

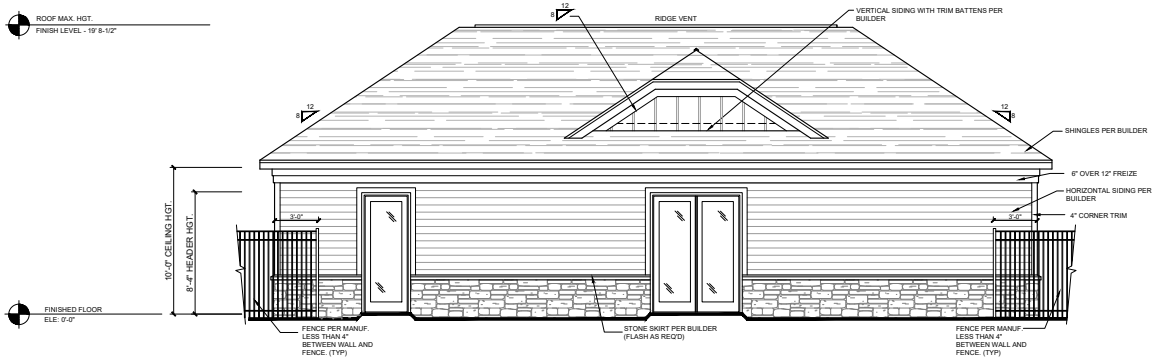
1	FRONT ELEVATION - POOL HOUSE
	Scale: 1/4" = 1'-0"



2	LEFT SIDE ELEVATION - POOL HOUSE
	Scale: 1/4" = 1'-0"



3	RIGHT SIDE ELEVATION - POOL HOUSE
	Scale: 1/4" = 1'-0"



4	REAR ELEVATION - POOL HOUSE
	Scale: 1/4" = 1'-0"

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6. Planworx Architecture, P.A. is not responsible for estimating, maintaining, or regulating construction costs associated with these plans.

SHEET TITLE:
Pool House Elevations

SHEET NUMBER:
A3.12

MURDOCK DR APARTMENTS

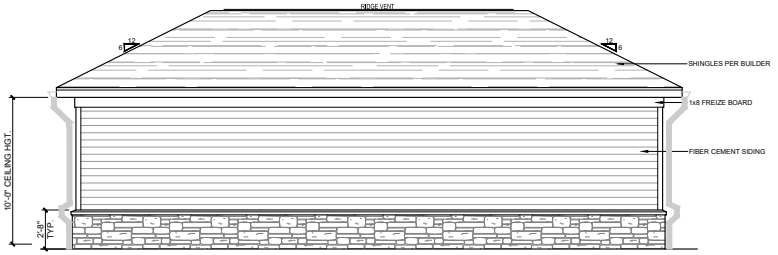
Knoxville, Tennessee

PLANWORX ARCHITECTURE

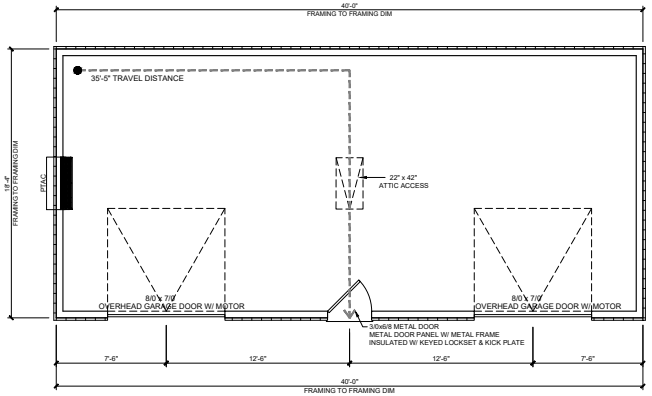
ARCHITECTURAL PLANS
EXTERIOR MATERIALS

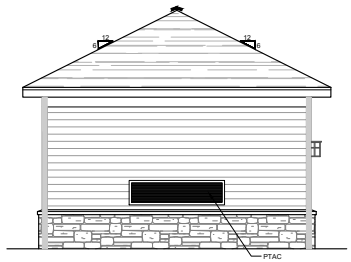
- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

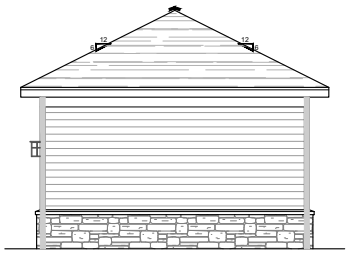
5 FRONT ELEVATION - MAINTENANCE BUILDING
Scale: 1/4" = 1'-0"



4 REAR ELEVATION - MAINTENANCE BUILDING
Scale: 1/4" = 1'-0"







SQUARE FOOTAGE

GARAGE / MAINTENANCE BAY =	733

1 FLOOR PLAN - MAINTENANCE BUILDING
Scale: 1/4" = 1'-0"

2 LEFT ELEVATION - MAINTENANCE BUILDING
Scale: 1/4" = 1'-0"

3 RIGHT ELEVATION - MAINTENANCE BUILDING
Scale: 1/4" = 1'-0"

SHEET TITLE: Maintenance Building Plan & Elevations

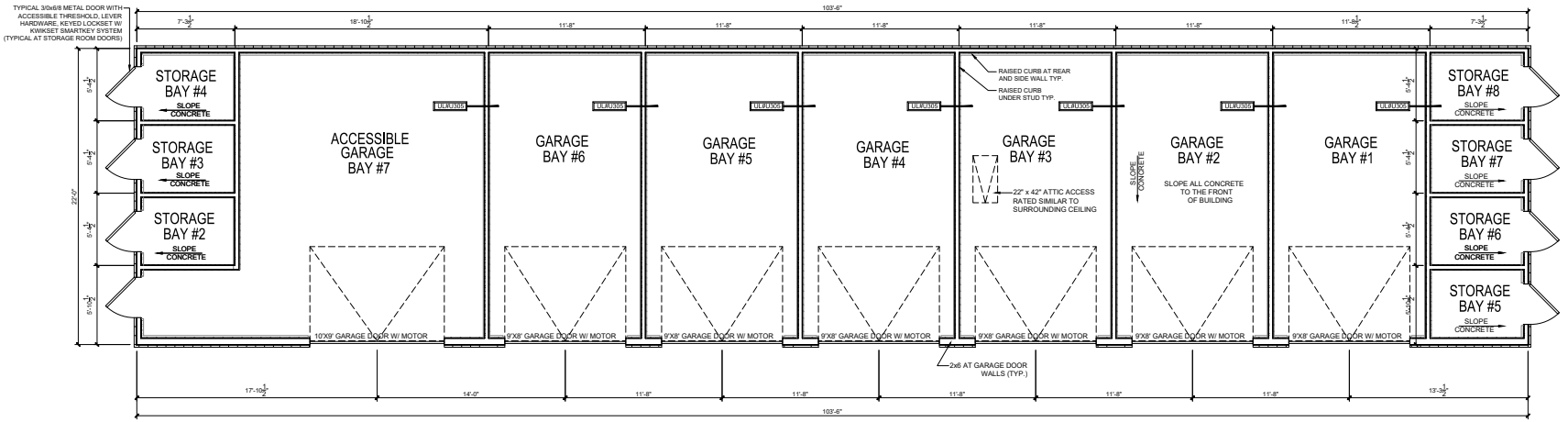
SHEET NUMBER: A4.10

1. All drawings are to be coordinated with all site information by owner and contractor, and applicable codes. 3. Planworx Architecture, P.A. is not responsible for constructed variations from the information depicted. 5. Planworx Architecture, P.A. retains ownership of all of designs depicted and implied herein.
2. Contractor is to notify architect immediately of conditions or items varying from depicted information. 4. Planworx Architecture, P.A. will not assume any liability for expenses associated with errors and omissions on these drawings unless offset by verified construction savings as a result of Planworx Architecture, P.A. Design. 6. Planworx Architecture, P.A. is not responsible for estimating, maintaining, or regulating construction costs associated with these plans.

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX
ARCHITECTURE



SQUARE FOOTAGE	
TOTAL BUILDING SQUARE FOOTAGE =	2,277
TYP. BAY (PAINT TO PAINT) =	238
ACCESSIBLE BAY (PAINT TO PAINT) =	421
TYP. STORAGE (PAINT TO PAINT) =	35

SHEET TITLE:
Garage Type 2 Floor Plan

SHEET NUMBER:
A4.20

1 GARAGE TYPE 2 - BUILDING PLAN

Scale: 1/4" = 1'-0"

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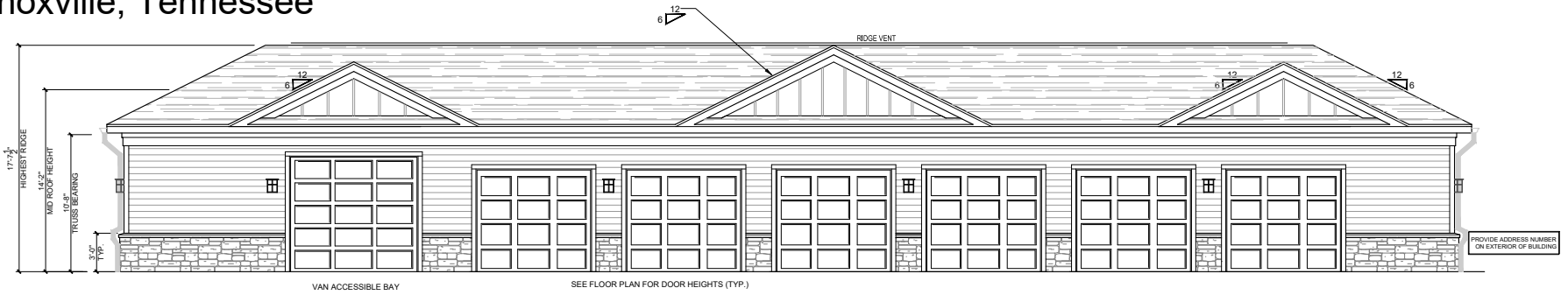
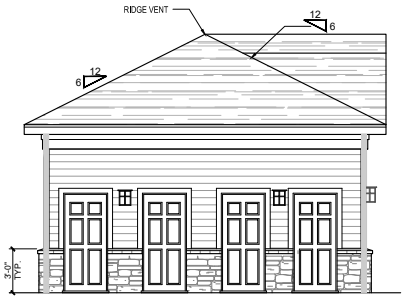
MURDOCK DR APARTMENTS

Knoxville, Tennessee

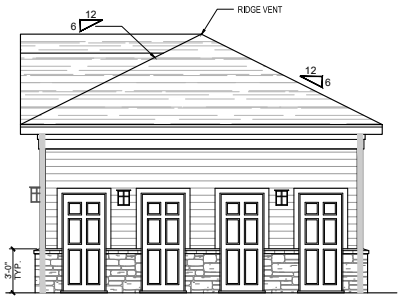
PLANWORX ARCHITECTURE



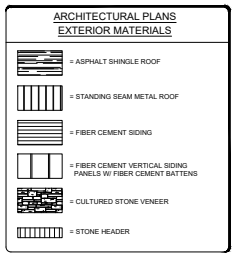
1 FRONT ELEVATION - GARAGE TYPE 2 (VAN ACCESSIBLE)
Scale: 1/4" = 1'-0"

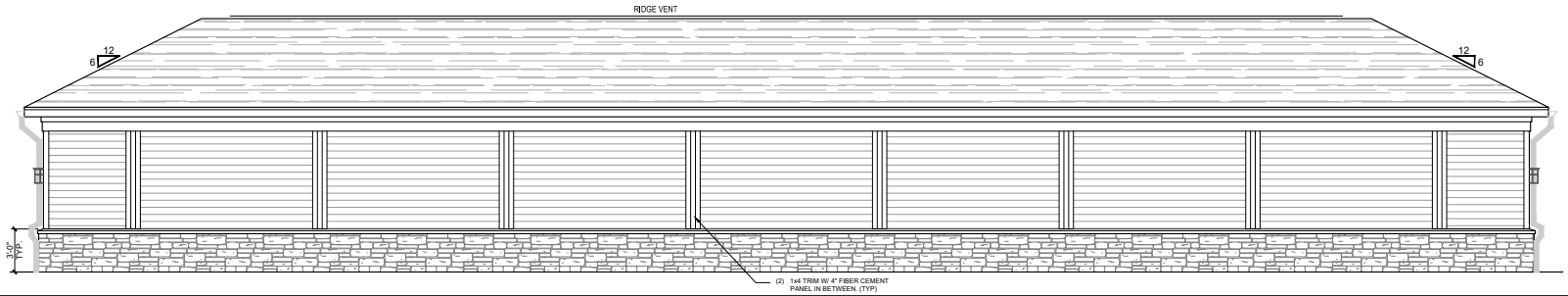


2 LEFT SIDE ELEVATION - GARAGE TYPE 2 (VAN ACCESSIBLE)
Scale: 1/4" = 1'-0"



3 RIGHT SIDE ELEVATION - GARAGE TYPE 2 (VAN ACCESSIBLE)
Scale: 1/4" = 1'-0"





4 REAR ELEVATION - GARAGE TYPE 2 (VAN ACCESSIBLE)
Scale: 1/4" = 1'-0"

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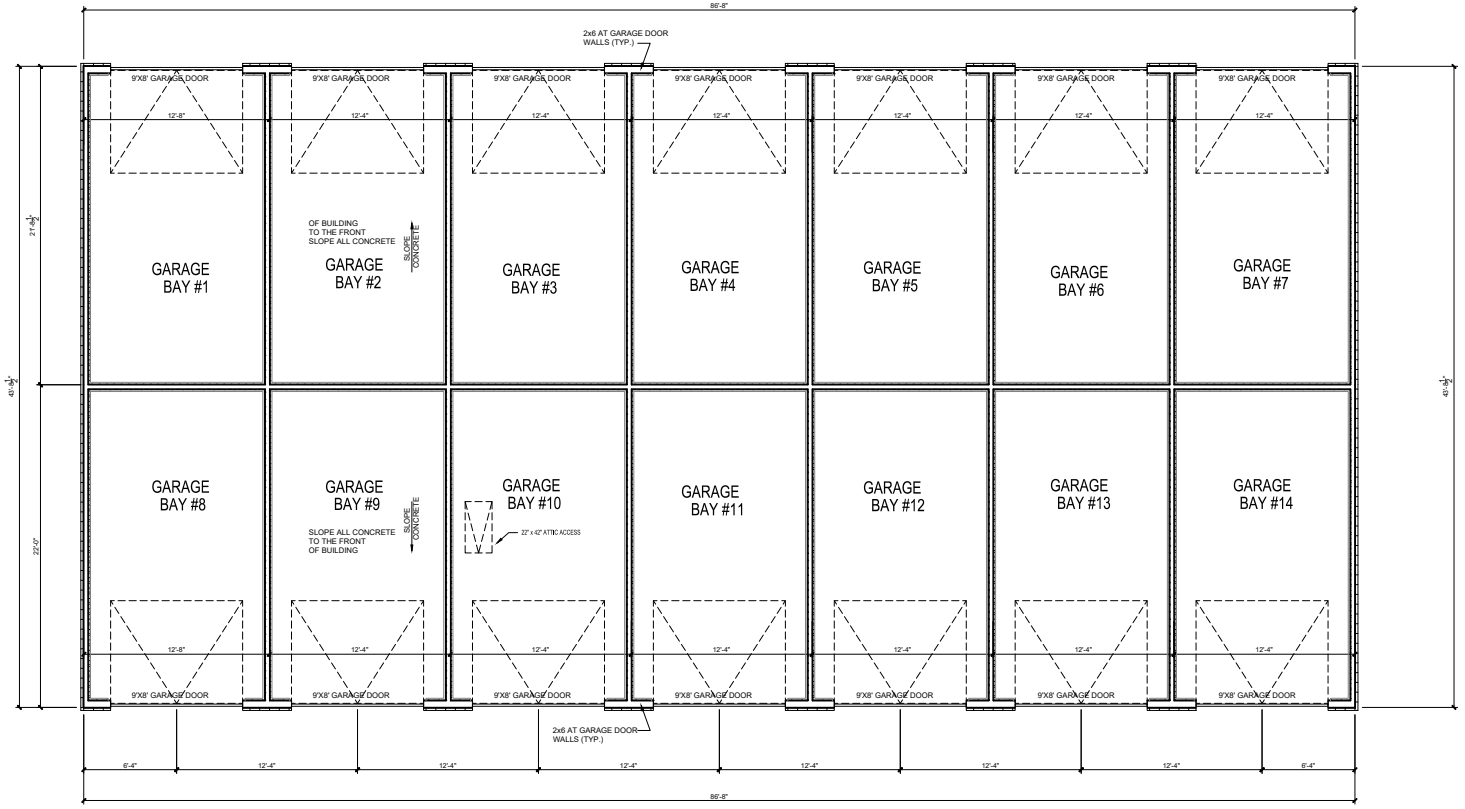
SHEET TITLE:
Garage Type 2 Elevations

SHEET NUMBER:
A4.22

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



GENERAL NOTES

WALLS
ALL WALLS ARE DRAWN 3.5" THICK U.N.O.
ANGLED WALLS ARE DRAWN @ 45 ° U.N.O.

SMOKE DETECTORS
NUMBER AND LOCATION OF SMOKE DETECTORS SHALL CONFORM TO N.E.C.

ATTIC ACCESS
ATTIC ACCESS SHALL BE PROVIDED BY BUILDER ACCORDING TO CODE.

WALL/CEILING HEIGHTS
WALL AND CEILING HEIGHTS NOTES ARE BASED ON NOMINAL WALL SIZE (I.E. A 10'-1 1/8" ACTUAL WALL HEIGHT IS LABELED 10/0 ON THE PLANS).

ARCHITECTURAL PLANS WALL LEGEND

= STANDARD STUD WALL INT OR EXT
IF EXT SEE ELEVATIONS FOR SIDING STYLE THICKNESS OF WALL NOTED IN PLAN NOTES OR AT WALL LOCATIONS

= STANDARD STUD WALL WITH APPLIED STONE VENEER WAINSCOT. STUD THICKNESS AS NOTED IN PLAN NOTES OR AT WALL LOCATIONS (NOTE: NO FOUNDATION SUPPORT IS REPRESENTED ON STRUCTURAL PLANS)
IF STACKED STONE IS TO BE USED BUILDER MUST NOTIFY PLAN DESIGNER BEFORE FOOTINGS ARE POURED

SQUARE FOOTAGE

TOTAL BUILDING SQUARE FOOTAGE =	3,788
TYP. BAY (PAINT TO PAINT) =	258

1 BUILDING PLAN - GARAGE TYPE 3

Scale: 1/4" = 1'-0"

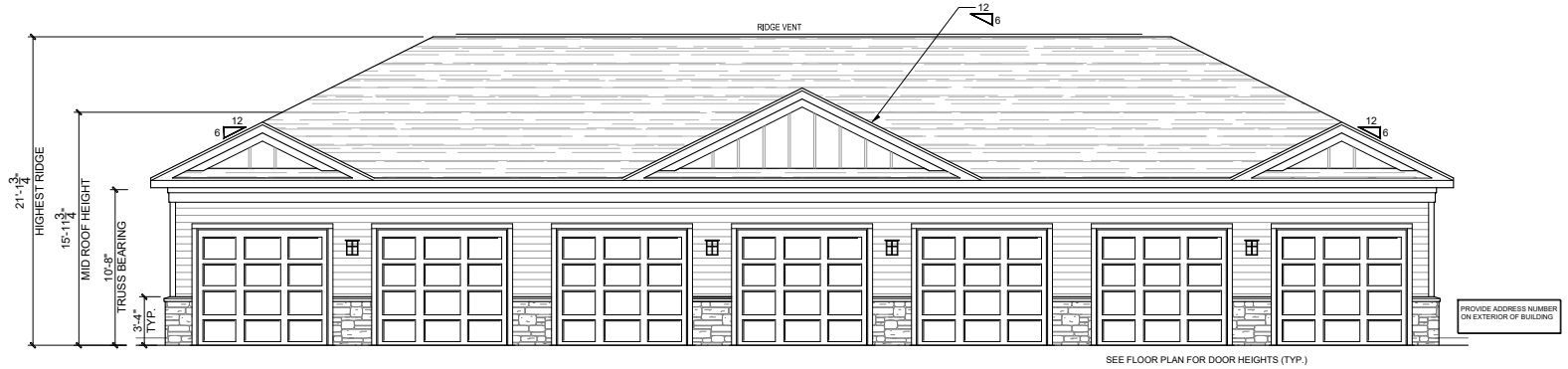
SHEET TITLE: Garage Type 3 Building Floor Plan

SHEET NUMBER: A4.30

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



1 TYPICAL FRONT/REAR ELEVATION - GARAGE TYPE 3

Scale: 1/4" = 1'-0"

ELEVATION GENERAL NOTES

ROOFS

* USE ICE AND WATER SHIELD AT ALL ROOF PLANES SLOPED BELOW 4:12.

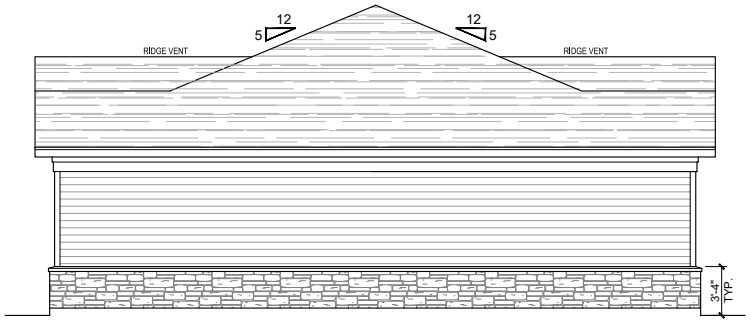
PAINT ALL ROOF PENETRATIONS TO MATCH SHINGLE COLOR

ROOF VENTILATION

SEE ROOF PLANS FOR ATTIC VENTILATION CALCULATION REQUIREMENTS.

ARCHITECTURAL PLANS EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER



2 TYPICAL SIDE ELEVATION - GARAGE TYPE 3

Scale: 1/4" = 1'-0"

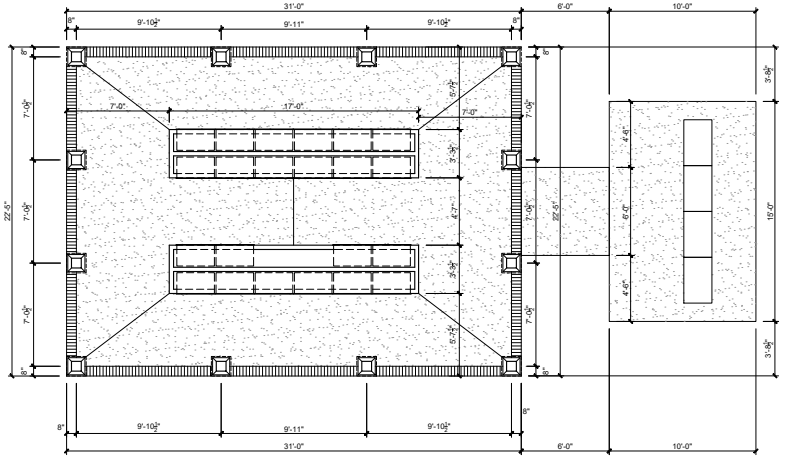
SHEET TITLE: Garage Type 3 Building Elevations

SHEET NUMBER: A4.31

MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



ELEVATION GENERAL NOTES

ROOFS

- USE ICE AND WATER SHIELD AT ALL ROOF PLANES SLOPED BELOW 4:12.

PAINT ALL ROOF PENETRATIONS TO MATCH SHINGLE COLOR

ROOF VENTILATION

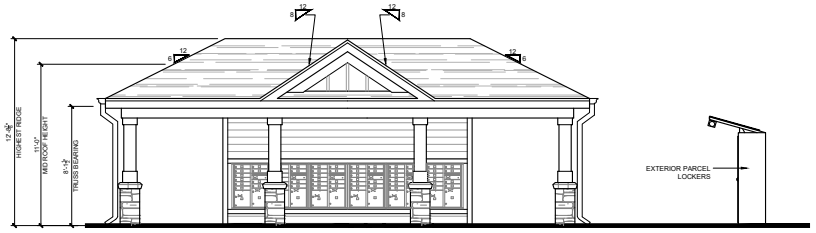
SEE ROOF PLANS FOR ATTIC VENTILATION CALCULATION REQUIREMENTS.

SQUARE FOOTAGE

MAIL BOX BAY SHELL =	130
TOTAL COVERED AREA =	755

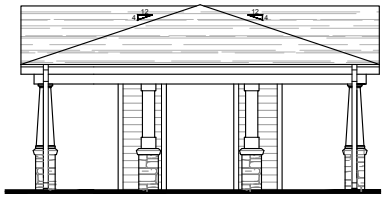
3 MAIL KIOSK - FLOOR PLAN

Scale: 1/4" = 1'-0"



1 MAIL KIOSK - FRONT/REAR ELEVATION

Scale: 1/4" = 1'-0"



2 MAIL KIOSK - TYPICAL SIDE ELEVATION

Scale: 1/4" = 1'-0"

ARCHITECTURAL PLANS EXTERIOR MATERIALS

- = ASPHALT SHINGLE ROOF
- = STANDING SEAM METAL ROOF
- = FIBER CEMENT SIDING
- = FIBER CEMENT VERTICAL SIDING PANELS W/ FIBER CEMENT BATTENS
- = CULTURED STONE VENEER
- = STONE HEADER

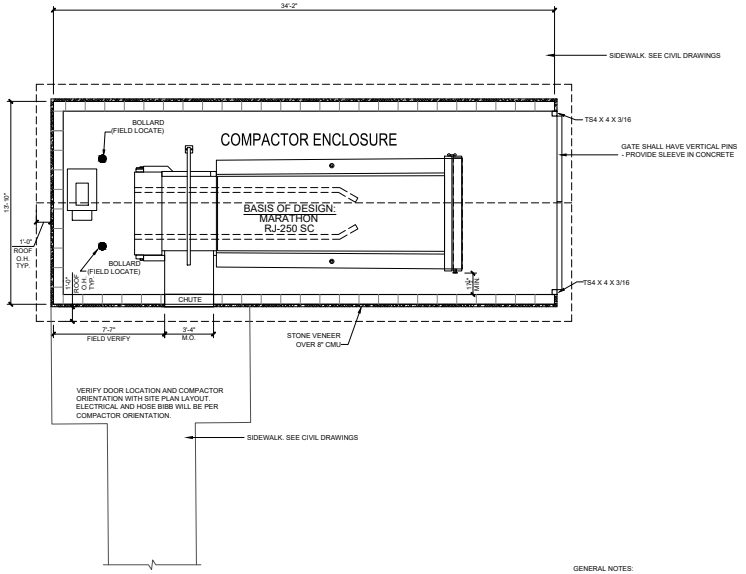
SHEET TITLE: Mail Kiosk Plan & Elevations

SHEET NUMBER: A5.10

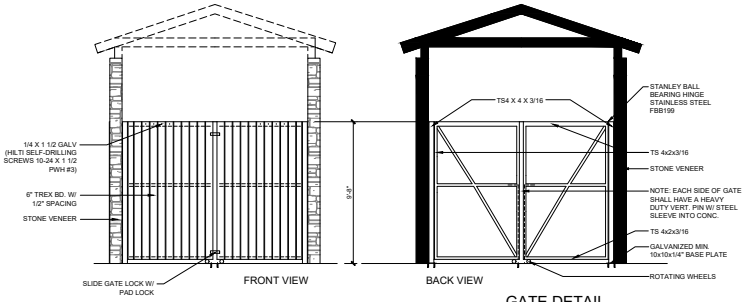
MURDOCK DR APARTMENTS

Knoxville, Tennessee

PLANWORX ARCHITECTURE



1 TRASH COMPACTOR ENCLOSURE PLAN
1/4"=1'-0"

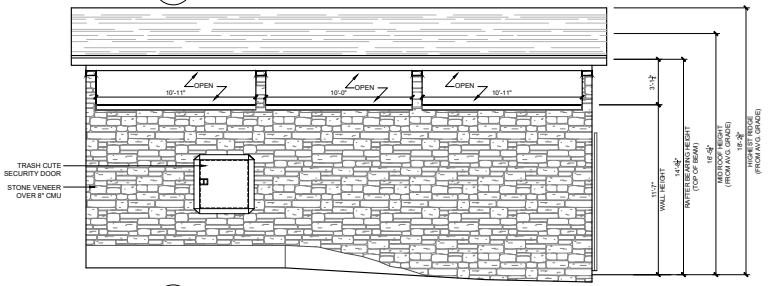


5 GATE DETAIL FRONT VIEW
1/4"=1'-0"

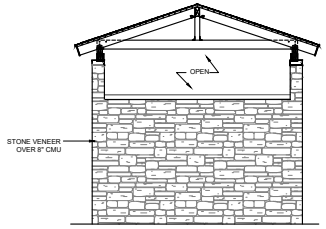
4 GATE DETAIL BACK VIEW
1/4"=1'-0"

GENERAL NOTES:

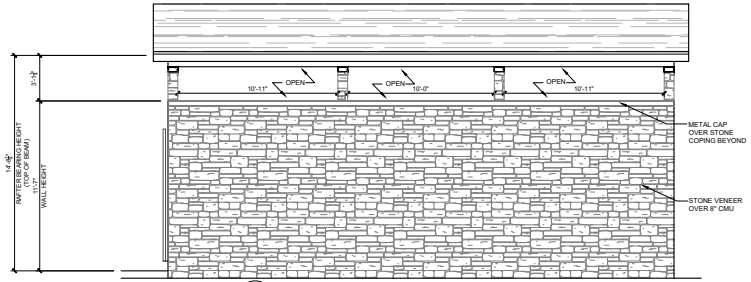
1. TRASH COMPACTOR MODEL TO BE RJ-250 SC 34 CY 44 FH W/40X40 SF SECURITY CHUTE W/SECURITY DOOR 60" ABOVE GRADE



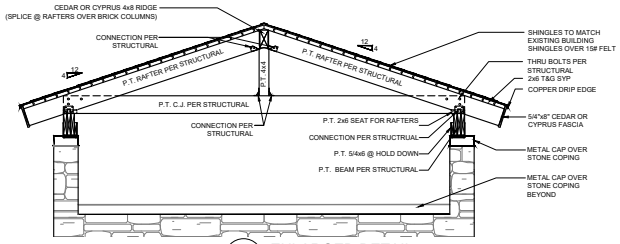
2 TRASH COMPACTOR SIDE ELEVATION
1/4"=1'-0"



6 TRASH COMPACTOR REAR ELEVATION
1/4"=1'-0"



3 TRASH COMPACTOR SIDE ELEVATION
1/4"=1'-0"



7 ENLARGED DETAIL
1/2"=1'-0"

1 TRASH COMPACTOR - PLAN AND ELEVATIONS

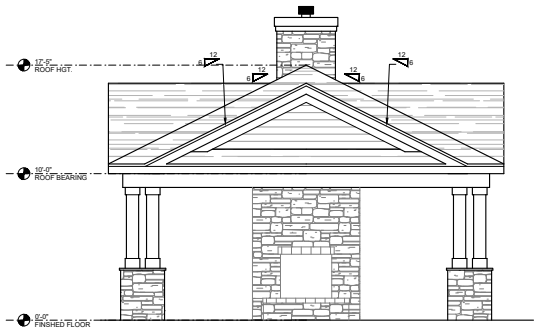
SHEET TITLE: Trash Enclosure Plan & Elevations

A6.10

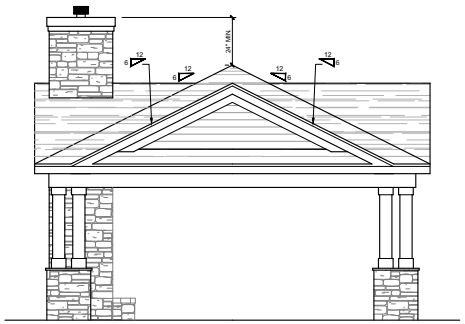
MURDOCK DR APARTMENTS

Knoxville, Tennessee

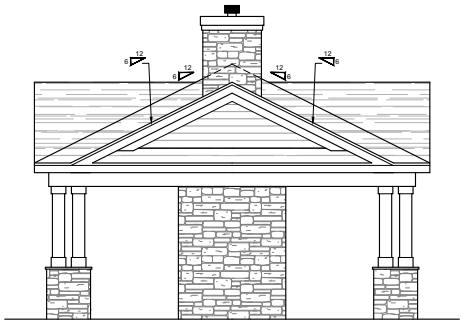
PLANWORX
ARCHITECTURE



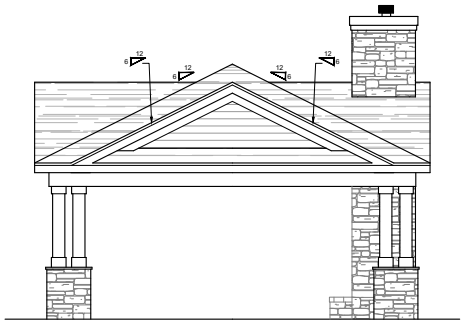
FRONT ELEVATION



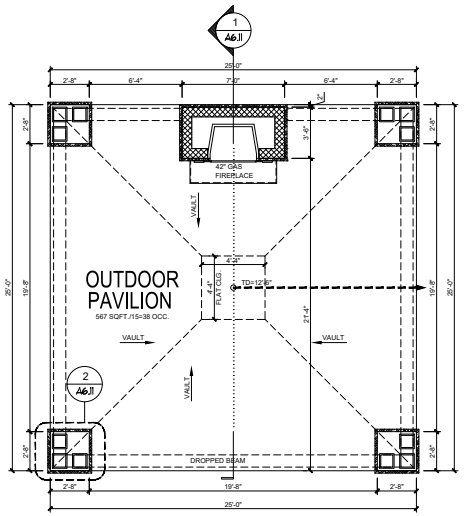
LEFT ELEVATION



REAR ELEVATION



RIGHT ELEVATION



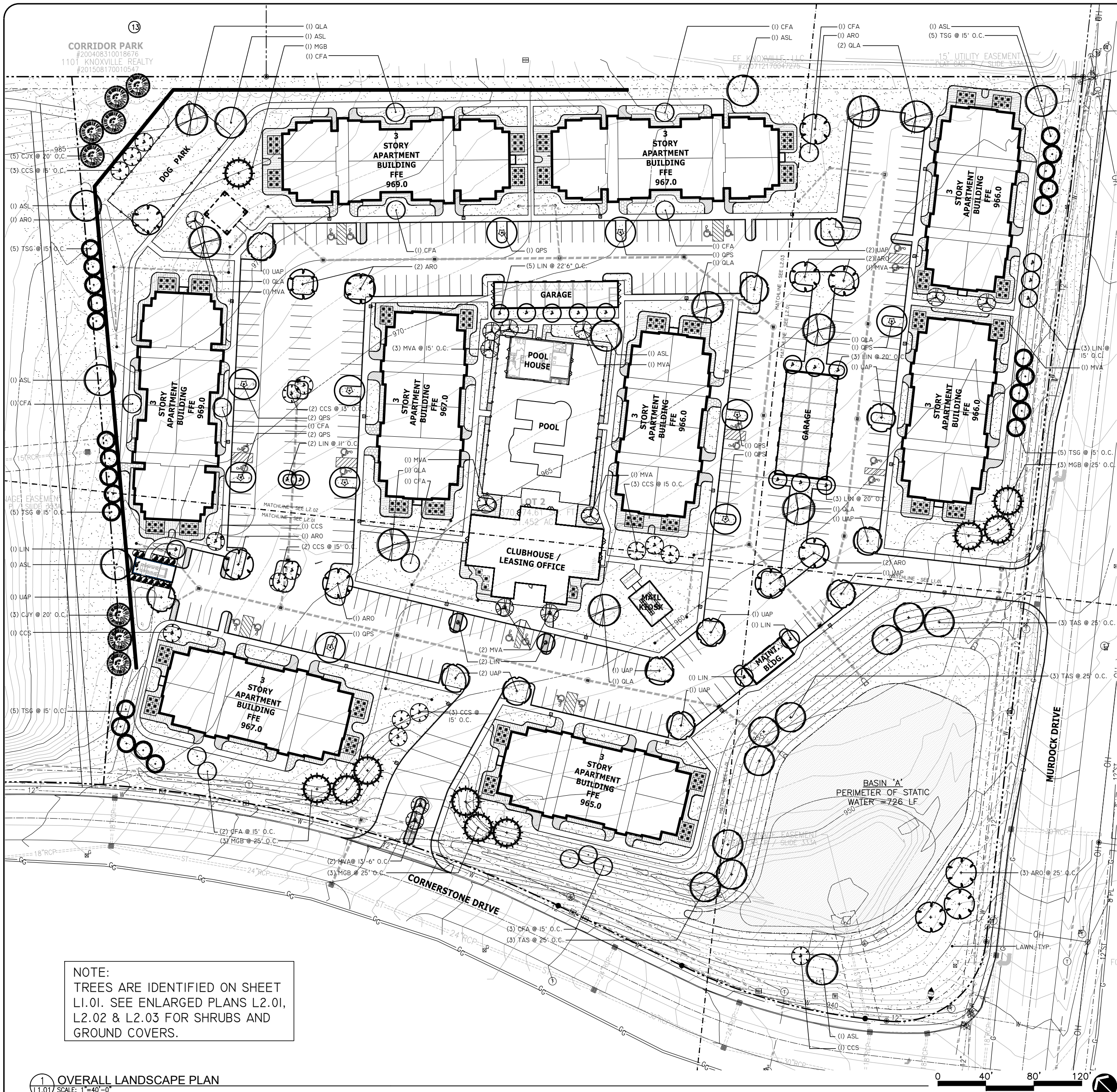
SQUARE FOOTAGE

PAVILION FLOOR =	625

1	ELEVATIONS Scale: 1/4" = 1'-0"	2	FLOOR PLAN Scale: 1/4" = 1'-0"

SHEET TITLE:
Pavilion Floor Plan & Elevations

SHEET NUMBER:
A7.10



NOTE:
TREES ARE IDENTIFIED ON SHEET L1.01. SEE ENLARGED PLANS L2.01, L2.02 & L2.03 FOR SHRUBS AND GROUND COVERS.

1 OVERALL LANDSCAPE PLAN
L1.01 SCALE: 1"=40'-0"

0 40' 80' 120'

875 CORNERSTONE MULTI-FAMILY - PLANT LIST

QUANTITY	SYMBOL	COMMON NAME	BOTANICAL NAME	ROOTS	MINIMUM SIZE	REMARKS
TREES						
8	ASL	Legacy Sugar Maple	*Acer saccharum 'Legacy'*	B&B	2" Cal.	Full Crowns @ 25' O.C.
13	ARO	October Glory Red Maple	*Acer rubrum 'October Glory'*	B&B	2" Cal.	Full Crowns @ 25' O.C.
16	CCS	Eastern Redbud	*Cercis canadensis*	B&B	6' Ht.	Clump w/ 3 Dominant Canes @ 15' O.C.
13	CFA	Flowering Dogwood	*Cornus florida 'Cherokee Princess'*	B&B	2" Cal.	Full Crowns @ 15' O.C.
8	CJY	Yoshino Cryptomeria	*Cryptomeria japonica 'Yoshino'*	B&B	8' Ht.	Full to Ground @ 20'O.C.
21	LIN	Natchez Crape Myrtle	*Lagerstroemia indica x fauriei 'Natchez'*	B&B	6' Ht.	Clump, pruned to 48", Full Crowns @ 12' O.C.
10	MGB	Bracken's Brown Beauty Southern Magnolia	*Magnolia grandiflora 'Brackens Brown Beauty'*	B&B	8' Ht.	Full to Ground @ 25' O.C.
13	MVA	Sweetbay Magnolia	*Magnolia virginiana*	B&B	6' Ht.	Clump, pruned to 36", Full Crown
9	QLA	Overcup Oak	*Quercus lyrata*	B&B	2" Cal.	Full Crowns @ 25' O.C.
10	QPS	Willow Oak	*Quercus phellos*	B&B	2" Cal.	Full Crowns @ 25' O.C.
9	TAS	Pond Cypress	*Taxodium ascendens*	B&B	2" Cal.	Full Crowns @ 25' O.C.
25	TSG	Green Giant Arborvitae	*Thuja (standish x plicata) 'Green Giant'*	B&B	6' Ht.	Full to Ground @ 10' O.C.
12	UAP	Princeton Elm	*Ulmus americana 'Princeton'*	B&B	2" Cal.	Full Crowns
SHRUBS						
1 124	AGA	Little Richard Glossy Abelia	*Abelia x grandiflora 'Little Richard'*	Cont.	3 Gal.	Full Plants @ 48" O.C.
1 168	HPJ	Little Lime Hydrangea	*Hydrangea paniculata 'Jane'*	Cont.	3 Gal., 18" Ht.	Full Plants @ 4' O.C.
1 660	ICC	Carissa Holly	*Ilex cornuta 'Carissa'*	Cont.	3 Gal., 18" Spd.	Full Plants @ 36" O.C.
1 645	ICB	Dwarf Burford Holly	*Ilex cornuta 'Burfordii Nana'*	Cont.	3 Gal., 24" Ht.	Full Plants @ 36" O.C.
13	PLS	Supreme Laurel	*Prunus laurocerasus 'Supreme'*	Cont.	3 Gal., 36" Ht.	Full Plants @ 5' O.C.
1 102	RSY	Radsunny Knockout Rose	*Rosa x 'RADSUNNY'*	Cont.	3 Gal., 18" Ht.	Full Plants @ 48" O.C.
GROUNDCOVER						
371	CHP	Japanese Plum Yew	Cephalotaxus harringtonia 'Prostrata'	Cont.	3 Gal., 18" Sprd.	Full Plants @ 36" O.C.
114	LMB	Big Blue Liriope	*Liriope muscari 'Big Blue'*	Cont.	1 Gal.	Full Plants @ 18" O.C.
362	JCB	Blue Pacific Shore Juniper	*Juniperus conferta 'Blue Pacific'*	Cont.	3 Gal., 15" Spd.	Full Plants @ 36" O.C.
LAWNS						
		Fescue Blend		Seed	Seed	
		Fescue Blend		Sod	Sod	

LANDSCAPE NOTES:

1. THIS LANDSCAPE PLAN IS FOR MUNICIPAL REVIEW AND NOT FOR CONSTRUCTION.
2. THE SITE IS PRIMARILY GRASS AND DOES NOT CONTAIN OTHER SIGNIFICANT VEGETATION.
3. EXAMINE SITE UPON WHICH WORK IS TO BE PERFORMED. PROVIDE PERCOLATION TESTS, PH TESTS AND OTHER TESTS NECESSARY TO ASCERTAIN THAT ADEQUATE GROWING CONDITIONS WILL BE PROVIDED FOR THE PLANTS. IF PERCOLATION TEST OR SUBSOIL CONDITIONS INDICATE RETENTION OF WATER IN PLANTING AREAS, AS SHOWN BY SEEPAGE OR OTHER EVIDENCE INDICATING PRESENCE OF UNDERGROUND WATER, RECTIFY UNSATISFACTORY CONDITIONS BEFORE BACKFILLING. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. COMMENCEMENT OF PLANTING WORK INDICATES SITE CONDITIONS HAVE BEEN ACCEPTED BY CONTRACTOR.
4. UNDERGROUND UTILITIES EXIST ON SITE. VERIFY LOCATIONS AND DEPTHS BEFORE COMMENCING WITH PLANTING WORK.
5. PLANT MATERIAL SHALL BE INSTALLED IN THE DORMANT SEASON UNLESS SPECIFIED OTHERWISE.
6. FOR LANDSCAPING BEDS (AREAS OF MASS PLANTING OF SHRUBS AND/OR GROUNDCOVERS) TO BE ESTABLISHED IN AREAS THAT HAVE NOT BEEN ALTERED OR DISTURBED BY EXCAVATION, GRADING, OR STRIPPING OPERATIONS, PREPARE SOIL BY TILLING TO A HOMOGENOUS MIXTURE OF FINE TEXTURE, FREE OF LUMPS, CLODS OR STONES LARGER THAN 2" IN GREATEST DIMENSION, ROOTS AND OTHER EXTRANEOUS MATERIAL TO A DEPTH OF NOT LESS THAN 4"; ELIMINATING UNEVEN AREAS AND LOWSPOTS; REMOVING FOREIGN MATERIALS; SPREADING 8" MINIMUM TOPSOIL. DEFINE BEDS WITH TRENCHED EDGING AT LAWNS.
7. IF QUANTITY OF STOCKPILED TOPSOIL IS INSUFFICIENT, PROVIDE ADDITIONAL TOPSOIL AS REQUIRED TO ACHIEVE A MINIMUM 8" DEPTH AT PLANTING BEDS. ENSURE THAT TOPSOIL IS STERILE, FERTILE, FRIABLE, NATURAL LOAM, TYPICAL FOR LOCALITY; CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH; TAKEN FROM WELL-DRAINED SITE; FREE OF SUBSOIL, CLAY LUMPS OR STONES LARGER THAN 2" IN GREATEST DIMENSION, PLANTS, WEEDS, AND ROOTS; HAVING PH VALUE OF 5.5 MINIMUM AND 7.0 MAXIMUM; CONTAINING 4 PERCENT MINIMUM ORGANIC MATTER. AMEND TOPSOIL WITH FERTILIZER AND/OR LIME AS REQUIRED TO PROMOTE VIGOROUS PLANT GROWTH.
8. ASSURE THAT BEDS DRAIN AWAY FROM STRUCTURES.
9. CONTRACTOR SHALL STAKE THE LOCATION OF ALL GROUND COVER BEDS, SHRUBS AND TREES FOR APPROVAL PRIOR TO INSTALLATION.
10. CONTRACTOR SHALL ERADICATE WEEDS AND NON-SPECIFIED PLANT MATERIAL THREE (3) WEEKS PRIOR TO PLANT/SEED INSTALLATION.
11. PROVIDE AND INSTALL ONLY PLANTS THAT ARE FREE FROM DISEASE AND PESTS, AND THAT COMPLY WITH THE LATEST EDITION OF PUBLICATION ANSI Z60.1, "AMERICAN STANDARDS FOR NURSERY STOCK," BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
12. ADD PRE-EMERGENT HERBICIDE UNDERNEATH AND ON TOP OF MULCH IN LANDSCAPE BEDS.
13. TOP DRESS BEDS WITH 3" DARK HARDWOOD MULCH. PROVIDE 3" DEEP LAYER IN A FOUR FOOT DIAMETER RING AROUND TREES IN LAWN AREAS.
14. PLANT GROUND COVERS THROUGH MULCH.
15. REMOVE STRINGS AND OTHER TIES FROM PLANT MATERIAL.
16. REMOVE UPPER 1/3 OF BURLAP FROM PLANT ROOT BALLS.
17. DO NOT PIERCE TREE ROOT BALLS WITH SUPPORT STAKES.
18. ADD FERTILIZER AS REQUIRED FOR OPTIMUM PLANT PERFORMANCE AND PRE-EMERGENT HERBICIDE.
19. DO NOT MAKE SUBSTITUTIONS REGARDING PLANT SIZES OR SPECIES WITHOUT WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.
20. PLANT MATERIAL, MULCH, AND OTHER RELATED LANDSCAPE PRODUCTS MUST BE PRE-TREATED FOR FIRE ANTS.
21. WARRANTY MATERIALS AND WORKMANSHIP FOR TWELVE MONTHS FROM THE DATE OF SUBSTANTIAL COMPLETION. ANY TREE WHICH FAILS TO SURVIVE TWELVE (12) MONTHS SHALL BE REPLACED WITHIN SIX (6) MONTHS OF LOSS.
22. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAKING REPAIRS NECESSITATED BY DAMAGE OCCURRING DURING THE PERFORMANCE OF THEIR WORK.
23. CONTRACTOR SHALL REMOVE STAKES AND GUY WIRES FOR TREES APPROVED BY THE LANDSCAPE ARCHITECT DURING THE WARRANTY INSPECTION.
24. SEED AREAS DISTURBED DURING CONSTRUCTION WITH APPROVED FESCUE BLEND.
25. ESTABLISH LAWNS AS INDICATED ON PLANS.
26. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

TTCDA NOTES:

1. TTCDA Guidelines 3.1.4: At Least 25% of Prposed/Existing Trees Shall be Evergreen. 26% of the proposed trees are Evergreen.
2. TTCDA Guidelines 3.1.5: For Development Sites, At least 10 Large Maturing Trees are required per Acre of Yard Space. 6.5 Acres of Yard Space (Including Stormwater Pond) X 10 = 65 (Min.) Lg. Trees Required. 70 Lg. Trees are Proposed.
3. TTCDA Guidelines 3.1.7: Evergreen Plant Material Should Be used to Screen Parking and to Provide Transitions Between Land Uses.Although Proposed Parking is Internal, Evergreen Trees are Proposed to Further Screen the Parking from Roads and Adjacent Property.
4. TTCDA Guidelines 3.3.3: Areas Around The Buildings Equal to At Least 50% of Each Front and Side Elevations Shall be Landscaped with Ornamental Trees, Shrubs and Bedding Plants.
5. TTCDA Guidelines 3.3.6: Landscaping Should be Used to Screen Mechanical Equipment and Other Unsightly Building Elements. Evergreen Shrubs are Proposed to Screen the Compactor Building and Mechanical Equipment.
6. TTCDA Guidelines 3.4.3: Trees shall be required at the rate of one (1) medium or large maturing canopy tree for every ten parking spaces provided. 329 Parking Spaces= 33 Shade Trees Required. 34 Shade Trees are Proposed at the Parking Areas.
7. TTCDA Guidelines 3.4.4: In addition to the planting of required canopy trees, planting areas for ornamental trees, shrubbery and bedding plants shall be no less than five (5) percent of the surface area devoted to parking. 110,600 SF X .05= 5,530 SF Minimum Required. 12,750 SF of Planting adjacent to parking is Proposed.
8. Knox County Zoning 5.41 - OB Office, Medical and Related Services Zone: There are no Specific Landscape Requirements Associated with this Zone, However Use On Review is Required for the Proposed Multi-Family Development.

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1 UOR AND TTCDA COMMENTS	02/22/2021
REVISIONS	DATE

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(336)451 9413

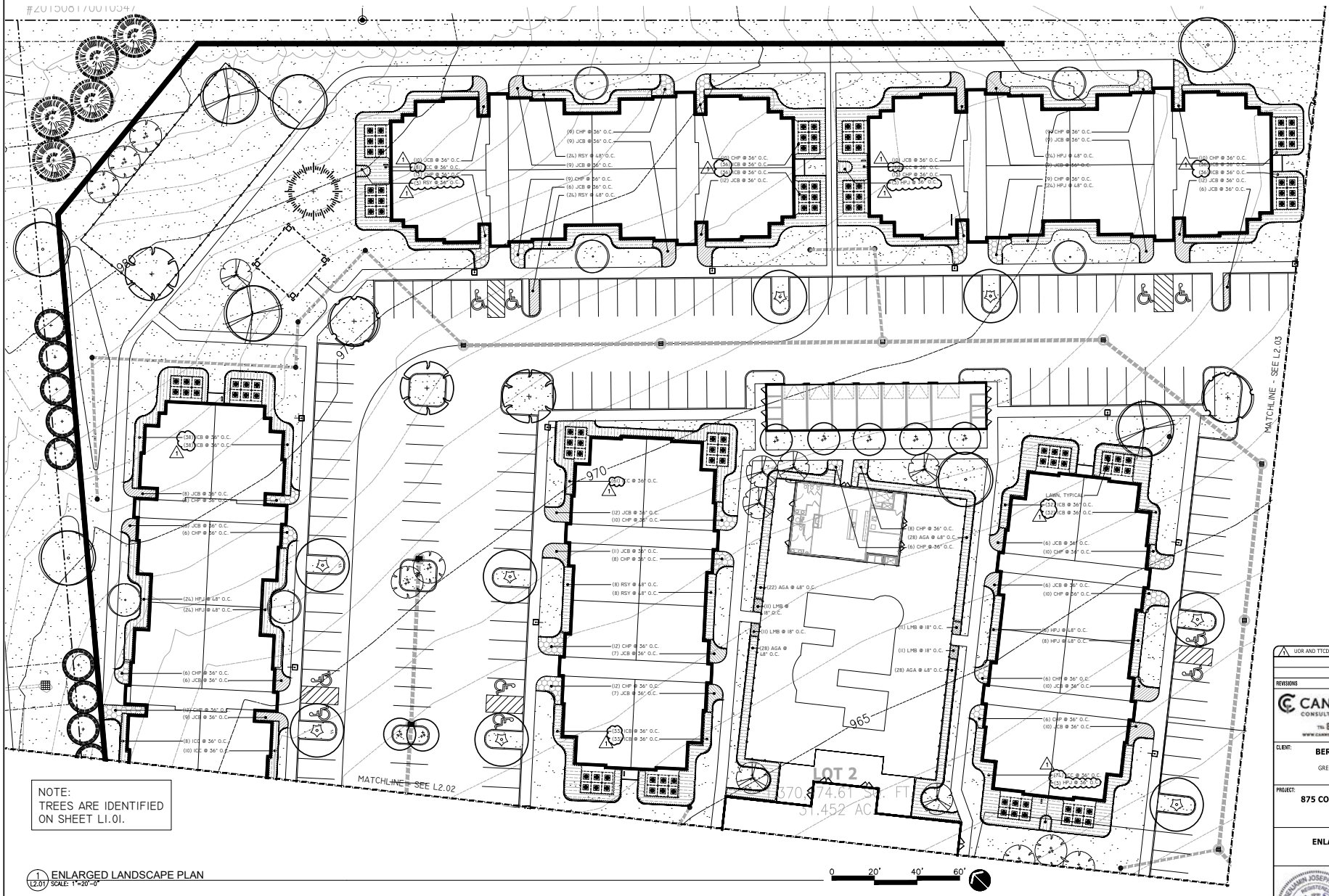
PROJECT:
875 CORNERSTONE MULTI-FAMILY
875 CORNERSTONE DRIVE
KNOXVILLE, TENNESSEE 37932

OVERALL LANDSCAPE PLAN
USE ON REVIEW

BENJAMIN JOSEPH PETHEL REGISTERED AGRICULTURE COMMERCE No. 00000525 LANDSCAPE ARCHITECT 2-22-21

CCI PROJECT NO.	01554-0000		
DRAWING DATE	FEBRUARY 22, 2021		
PM	AWG	PIC	-
DRAWN	TPS	CHECKED	TPS

UOR L1.01



NOTE:
TREES ARE IDENTIFIED ON SHEET LI.0I.

1 L2.01 ENLARGED LANDSCAPE PLAN
SCALE: 1"=20'-0"

0 20' 40' 60'

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ENLARGED LANDSCAPE PLAN
USE ON REVIEW

CCI PROJECT NO.	01554-0000
DRAWING DATE	FEBRUARY 22, 2021
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REGISTERED LANDSCAPE ARCHITECT — BENJAMIN JOSEPH PETHEL — TENNESSEE — 2122

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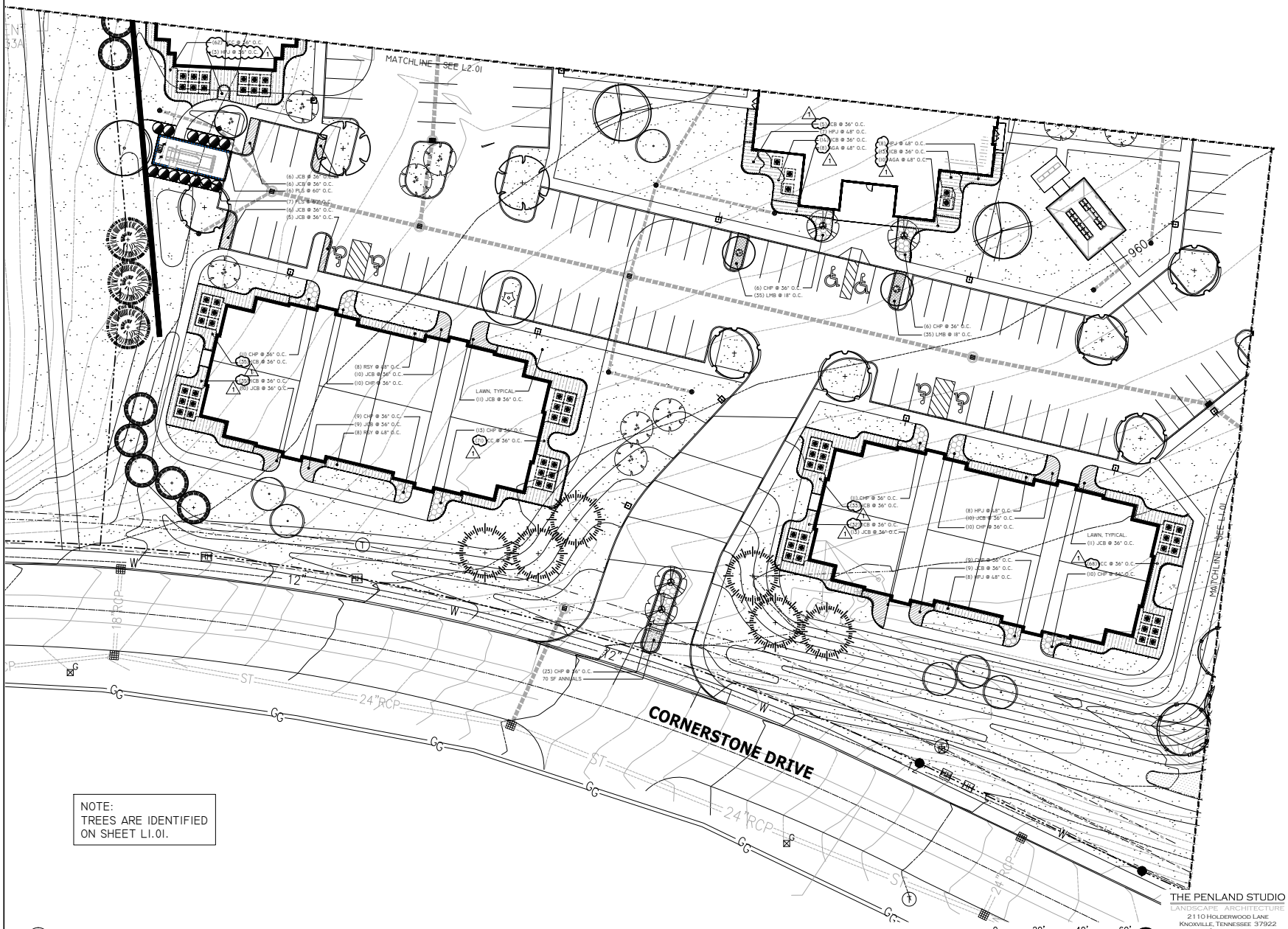

NOTE:
TREES ARE IDENTIFIED ON SHEET L1.01.

1 / L2.02 ENLARGED LANDSCAPE PLAN
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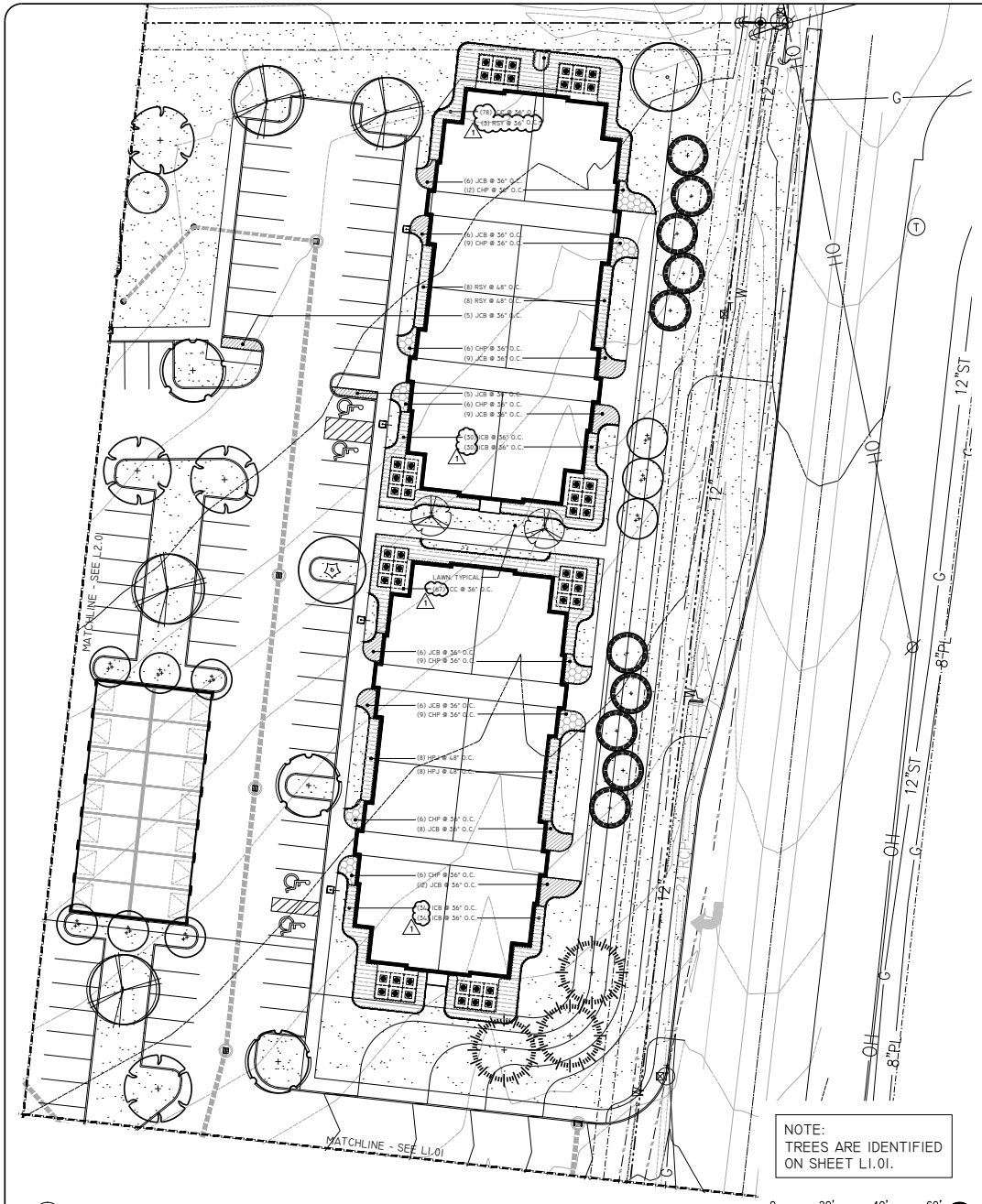
ENLARGED LANDSCAPE PLAN
USE ON REVIEW

BENJAMIN JOSEPH PETHEL REGISTERED LANDSCAPE ARCHITECT 339 STATE OF TENNESSEE 2/22/21

CCI PROJECT NO.	01554-0000
DRAWING DATE	FEBRUARY 22, 2021
PM AWG	PIC -
DRAWN TPS	CHECKED TPS

UOR L2.02



NOTE:
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1 L2.03 ENLARGED LANDSCAPE PLAN
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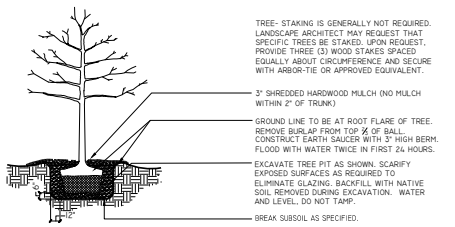

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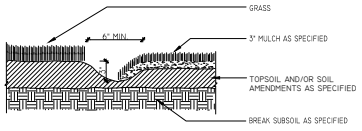

6 L2.03 TRENCHED BED EDGE DETAIL
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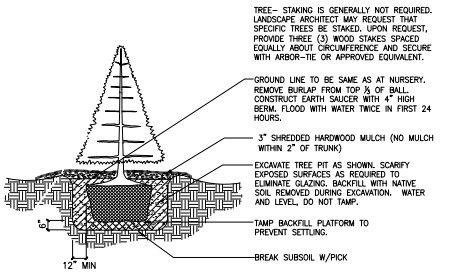

3 L2.03 EVERGREEN TREE
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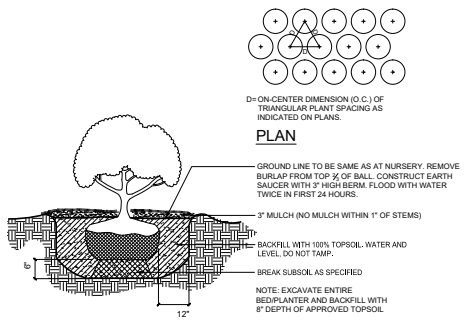

4 L2.03 SHRUB PLANTING DETAIL
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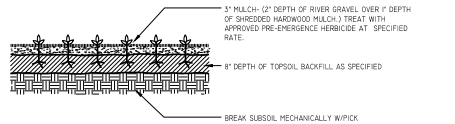

5 L2.03 GROUND COVER/PERENNIAL PLANTING
SCALE: NOT TO SCALE

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ENLARGED LANDSCAPE PLAN
USE ON REVIEW

BENJAMIN JOSEPH PETHEL — REGISTERED LANDSCAPE ARCHITECT — TENNESSEE — 000000 — 2/22/21

CCI PROJECT NO.	01554-0000
DRAWING DATE	FEBRUARY 22, 2021
PM AWG	PIC -
DRAWN TPS	CHECKED TPS

UOR L2.03

3-C-21-UR
EXHIBIT A. Contextual Images

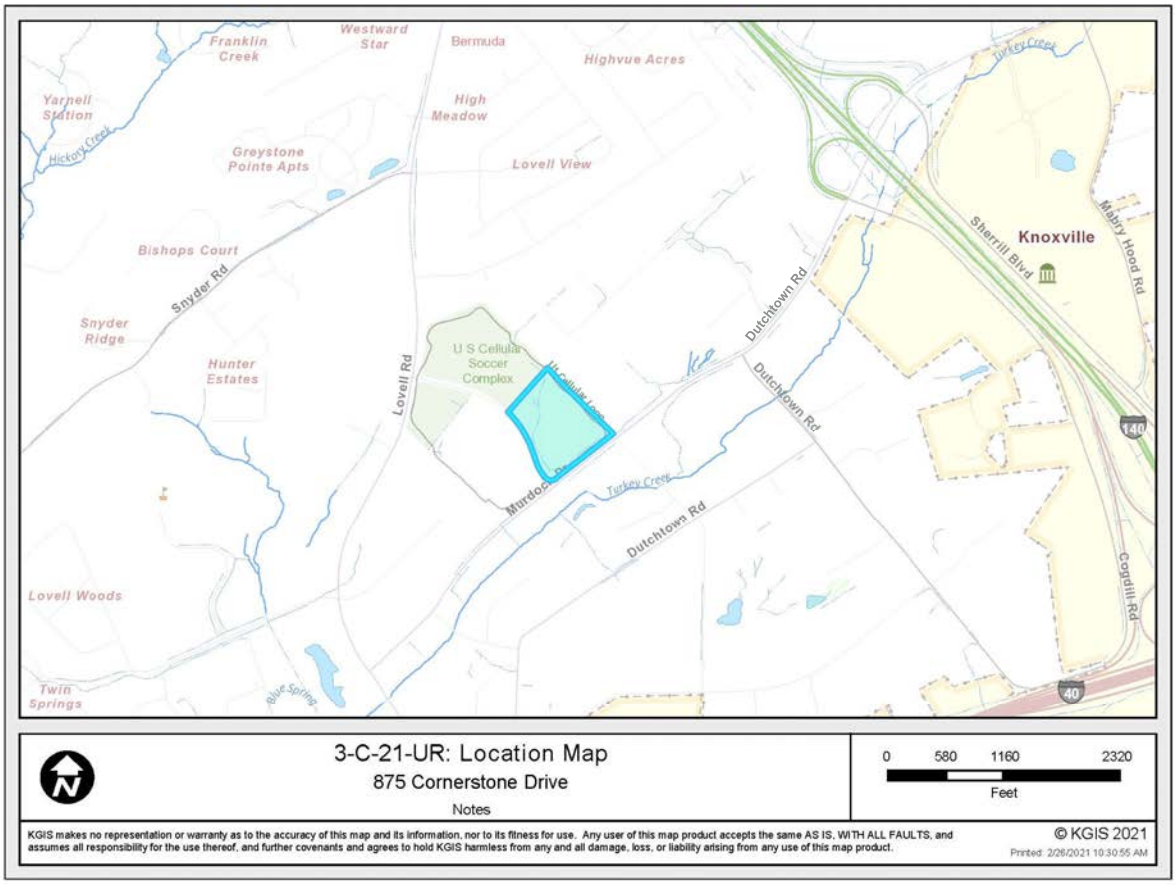

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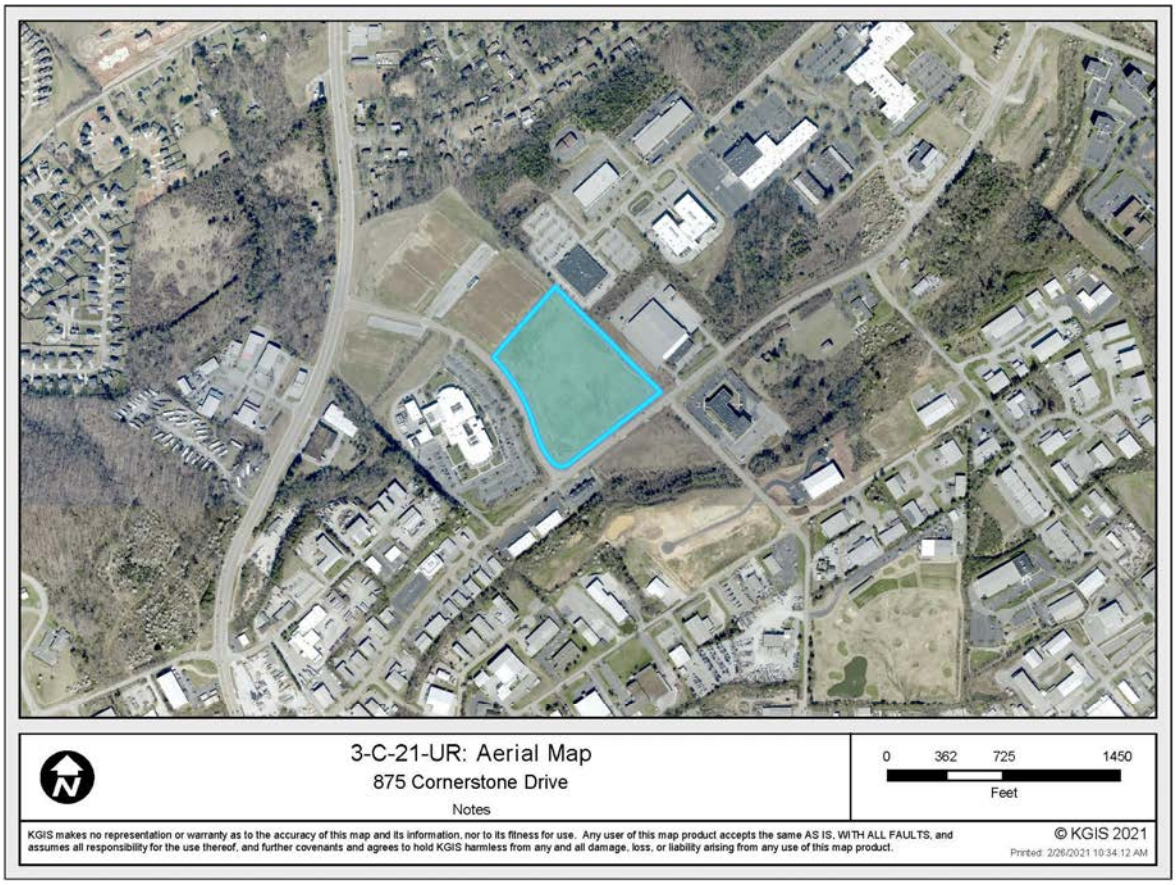
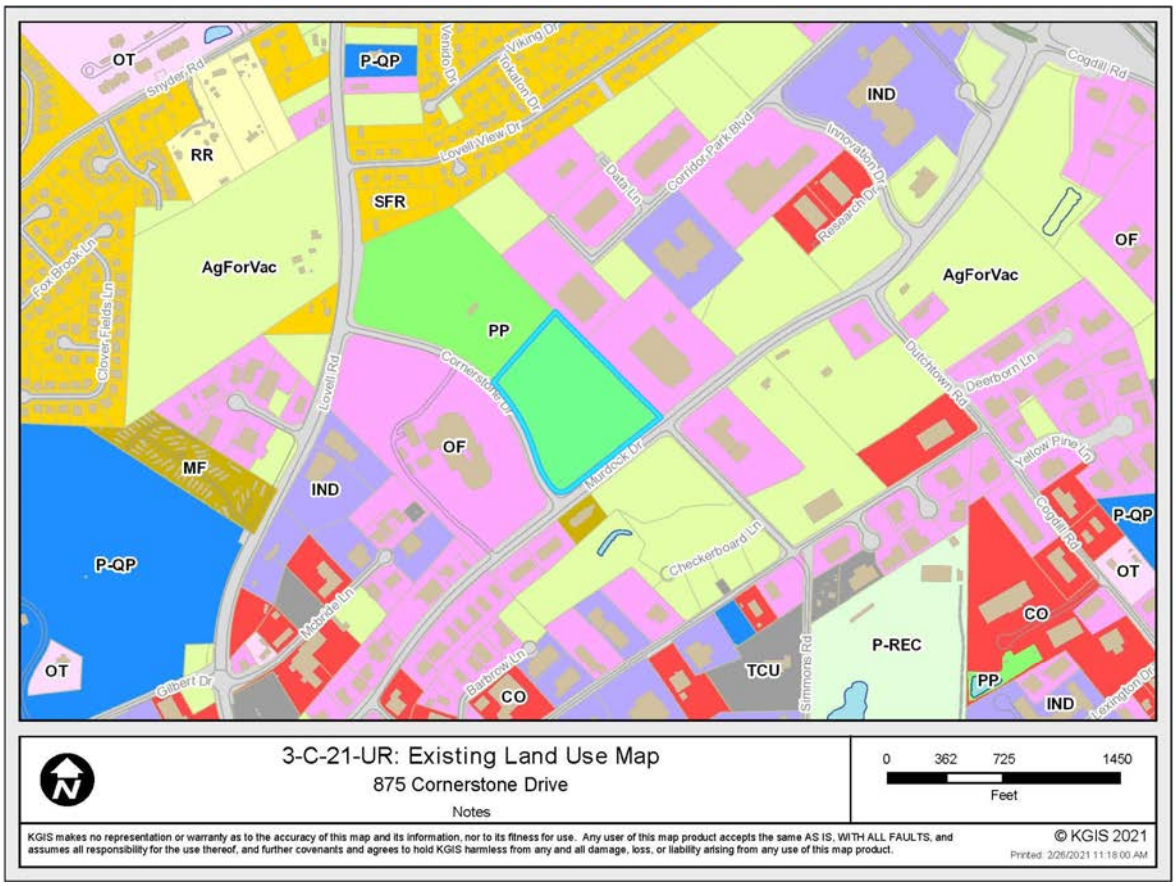
EXHIBIT A. Contextual Images





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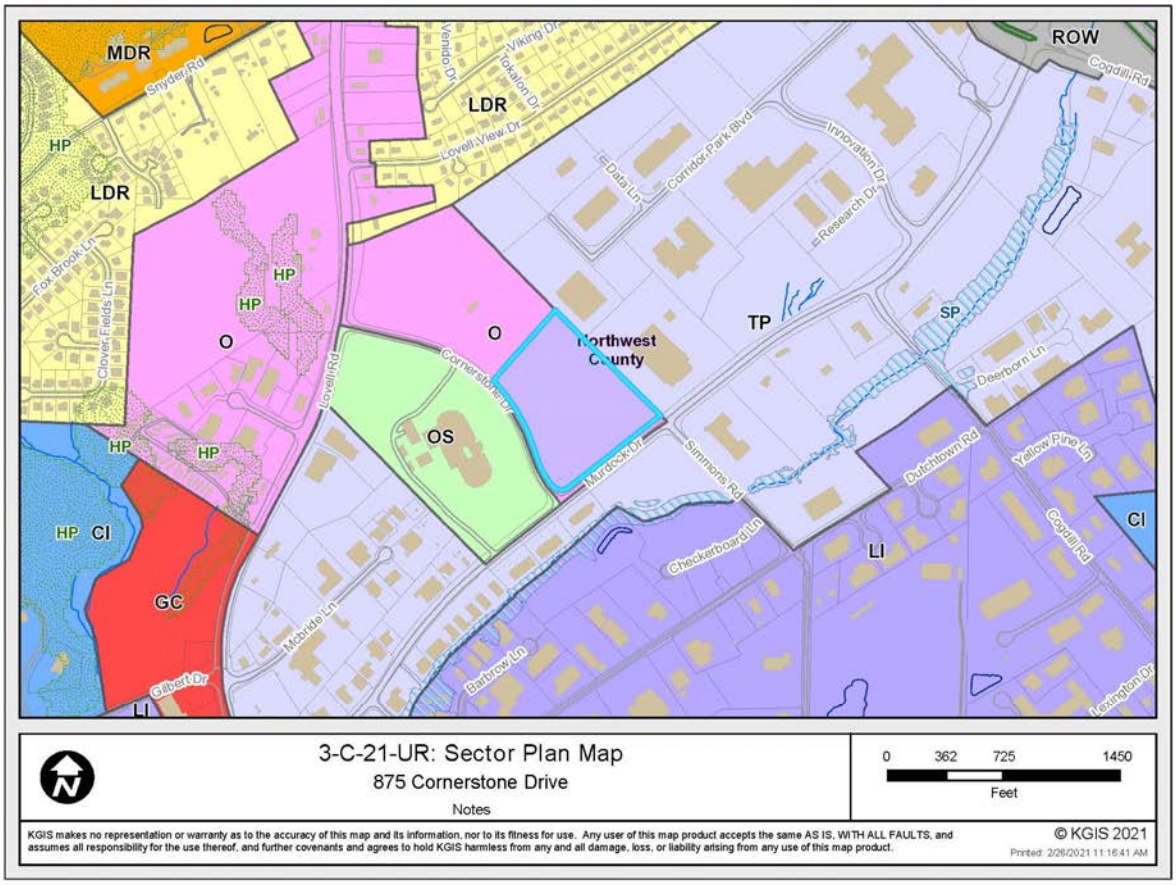

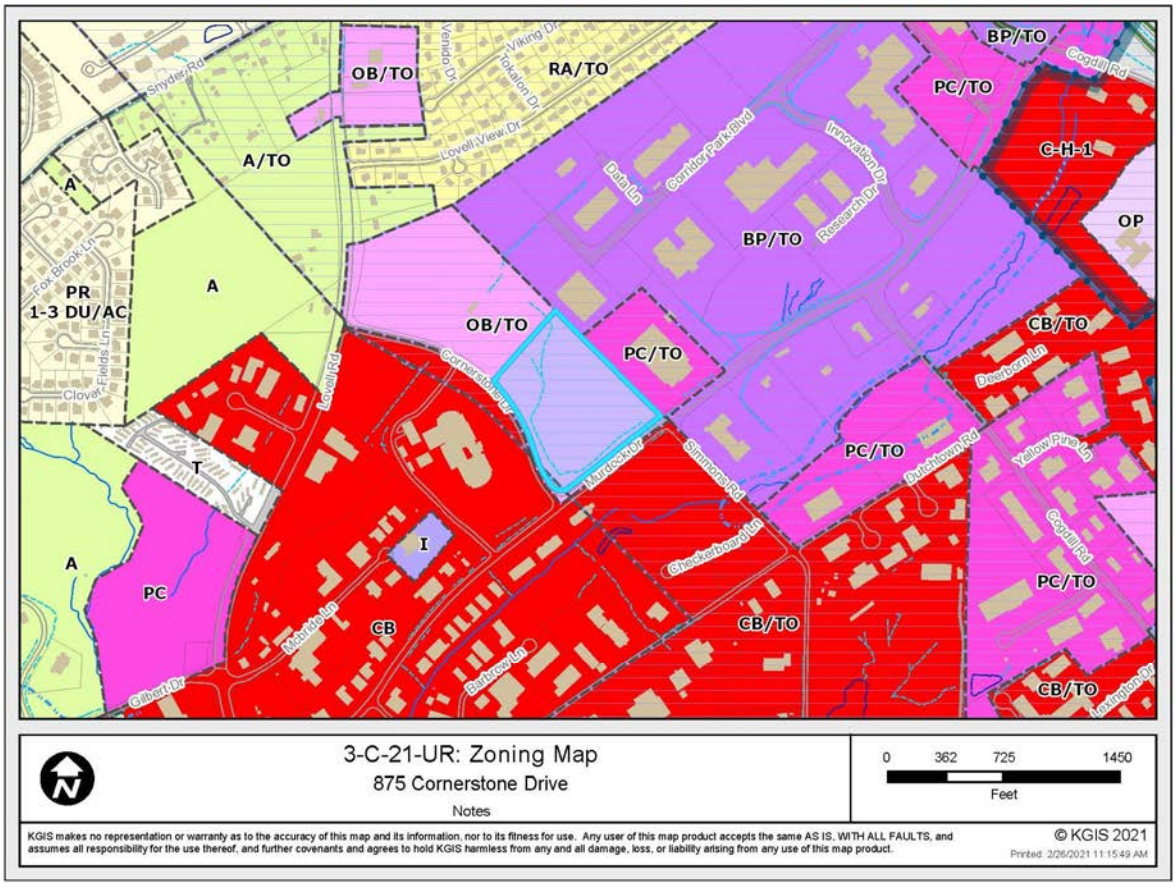

875 CORNERSTONE DRIVE APARTMENTS

KNOX COUNTY, TENNESSEE

TRAFFIC IMPACT STUDY

CORNERSTONE DRIVE AT MURDOCK DRIVE
KNOX COUNTY, TENNESSEE

CCI PROJECT NO. 01554-0000

REV 1

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CANNON & CANNON INC
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FIELD SURVEYORS

REVISED
February 23
2021

875 CORNERSTONE DRIVE APARTMENTS

KNOX COUNTY. TENNESSEE

TRAFFIC IMPACT STUDY

CORNERSTONE DRIVE AT MURDOCK DRIVE
KNOX COUNTY, TENNESSEE

CCI PROJECT NO. 01554-0000

REVISION I (02/23/21)
This report replaces the previous version of the traffic impact study dated 01/18/2020 prepared for this project in its entirety. The associated changes are related to comments received from the Knoxville-Knox County Planning, which are located in Appendix F.

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February 23
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EXECUTIVE SUMMARY

This report provides a summary of a traffic impact study that was performed for a proposed multi-family residential development to be located on Cornerstone Drive in Knox County, Tennessee. The project site is located in the northeast quadrant of the intersection of Cornerstone Drive and Murdock Drive. The development plan for this project proposes a multi-family residential development with 216 units. The proposed development will have two access driveways, one access onto Cornerstone Drive and one access onto Murdock Drive.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed development upon roadways in the vicinity of the project site. Discussion with Knox County officials resulted in the existing intersection of Cornerstone Drive at Murdock Drive being identified for detailed study. Additionally, the proposed site access locations along Cornerstone Drive and Murdock Drive were included in the study. Appropriate intersection evaluations such as capacity analyses and signal warrant analyses were conducted at the study intersections for existing and future conditions, both with and without site generated traffic, in order to determine the anticipated impacts and to establish recommended measures to mitigate these impacts.

The primary conclusion of this study is that the traffic generated from the proposed development will not have significant impacts at the studied intersections. The capacity analysis indicates a minimal increase in delay is expected at each intersection once the proposed development is built-out. The intersection of Cornerstone Drive at Murdock Drive does not warrant a signal installation under build-out conditions and the existing intersection configuration / control is expected to adequately accommodate traffic generated by the proposed development.

Additionally, anticipated traffic volumes at the site access intersection along Murdock Drive indicate a westbound right-turn lane is not recommended to be installed. Currently, the site access on Murdock Drive is proposed to be installed in the existing right-turn lane taper for the intersection of Cornerstone Drive and Murdock Drive. It is recommended to shorten the existing right-turn lane / taper to accommodate the installation of the proposed site access so the site access is not installed within a turn lane taper.

The following listing is a summary of the improvements that are recommended to be implemented with the construction of this project:

1. Install STOP signs at the site access locations on the site access approaches to Cornerstone Drive and Murdock Drive.

2. At the intersection of Cornerstone Drive at Murdock Drive, shorten the existing westbound right-turn lane storage from 250' to 150' and shorten the existing right-turn lane taper from 200' to 150' to allow for the proposed site access along Murdock Drive to be installed outside of the existing right-turn lane taper.

3. Maintain intersection corner sight distances on the site driveways by ensuring that new site signage and landscaping is appropriately located.

INTRODUCTION & PURPOSE OF STUDY

This report provides a summary of a traffic impact study that was performed for a proposed multi-family residential development to be located on Cornerstone Drive in Knox County, Tennessee. The project site is located in the northeast quadrant of the intersection of Cornerstone Drive and Murdock Drive. FIGURE 1 is a location map showing the major roadways in the project site vicinity.

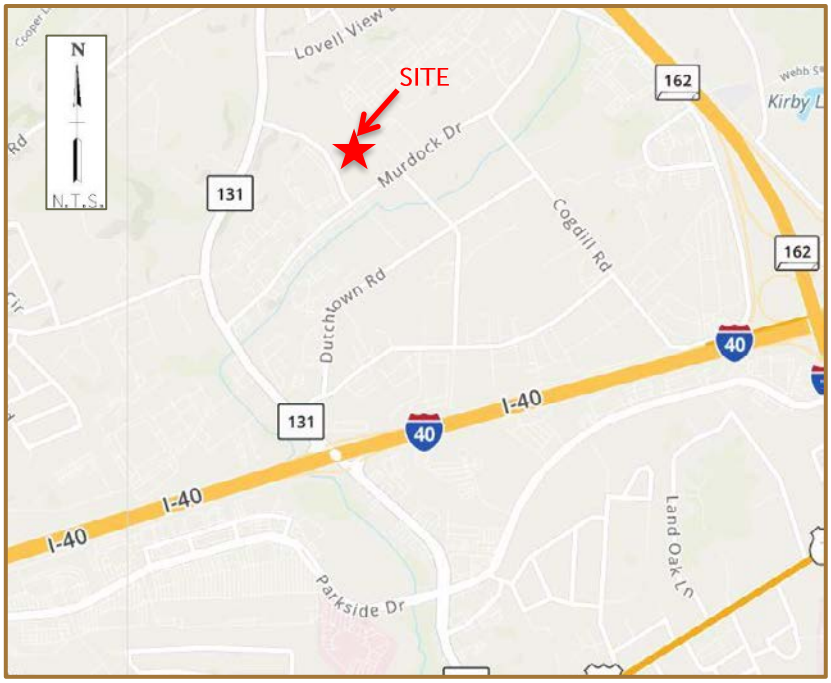


FIGURE 1
LOCATION MAP

The development plan for this project proposes a multi-family residential development with 216 units. The proposed development will have two access driveways, one access onto Cornerstone Drive and one access onto Murdock Drive. FIGURE 2 is a Conceptual Site Plan detailing the proposed site.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed development upon roadways in the vicinity of the project site. Discussion with Knox County officials resulted in the existing intersection of Cornerstone Drive at Murdock Drive being identified for detailed study. Additionally, the proposed site access locations along Cornerstone Drive and Murdock Drive were included in the study. Appropriate intersection evaluations such as capacity analyses and signal warrant analyses were conducted at the study intersections for existing and future conditions, both with and without site generated traffic, in order to determine the anticipated impacts and to establish recommended measures to mitigate these impacts.

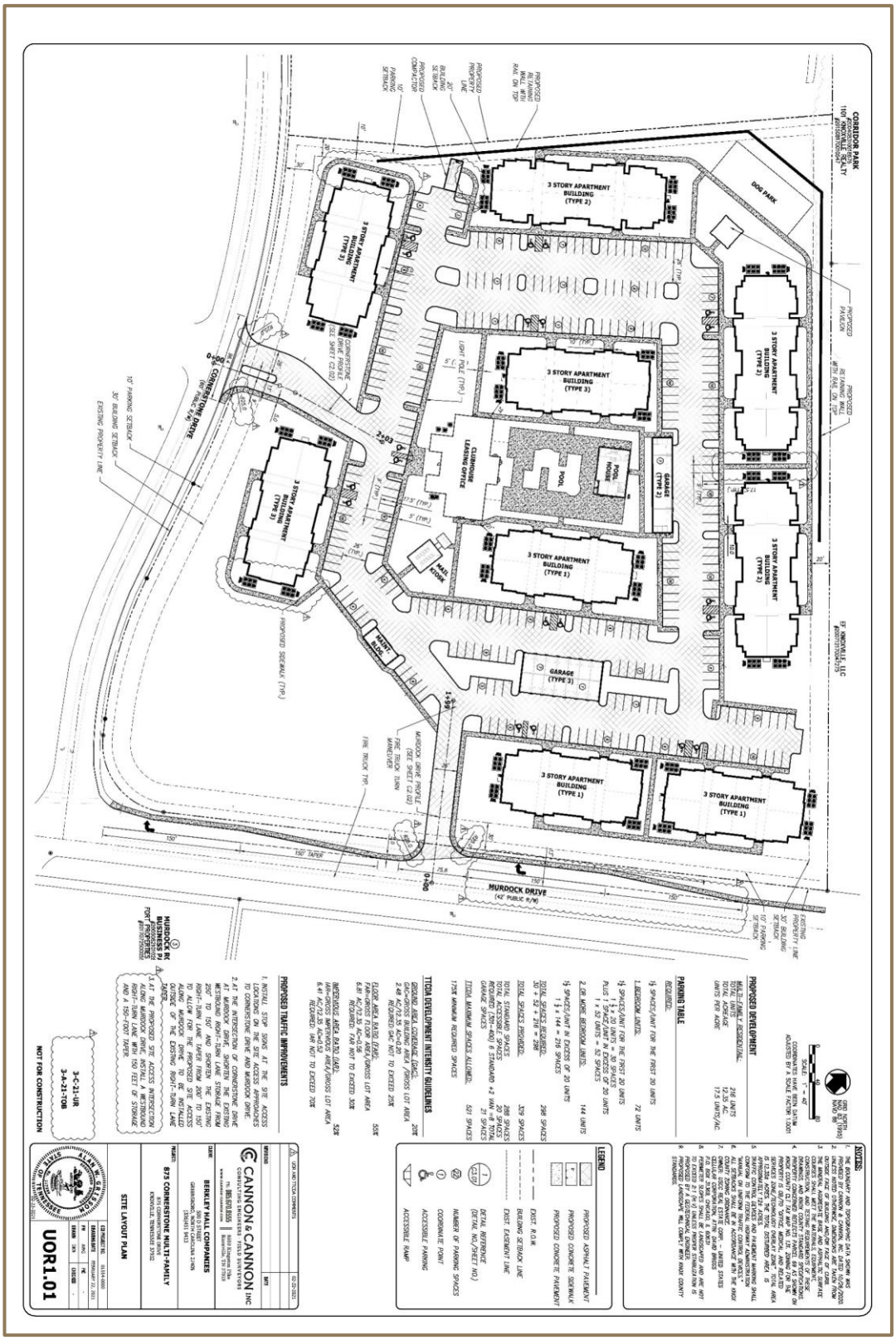


FIGURE 2
CONCEPTUAL SITE PLAN

EXISTING CONDITIONS

EXISTING ROADWAY CONDITIONS

Roadway conditions for the study roadways are summarized as follows:

- Cornerstone Drive is a three-lane local road with one lane in each direction and a center two-way left-turn lane. Lane widths are 12 feet and curb, gutter, and sidewalk are on both sides. There is no posted speed limit along Cornerstone Drive.
- Murdock Drive is a three-lane road with one lane in each direction and a center two-way left-turn lane. It is classified as a Minor Arterial per Knoxville-Knox County Planning Major Road Plan. Lane widths are 12 feet and the posted speed limit is 40 mph within the vicinity of the proposed site.

Traffic control for the study intersections is as follows:

- Cornerstone Drive at Murdock Drive is currently side-street STOP controlled.

EXISTING SITE CONDITIONS

The project site is located in the northeast quadrant of the intersection of Cornerstone Drive at Murdock Drive. It is bordered by the US Cellular Soccer Complex to the north and the US Cellular Business Office to the west. The site is relatively flat and does slope upward from Murdock Drive to the soccer fields north of the proposed site. The site access point on Cornerstone Drive is proposed to tie into the road across from the existing US Cellular Business Office access, creating a four-way intersection along Cornerstone Drive. FIGURE 3 provides an aerial view of the project site and the surrounding area.

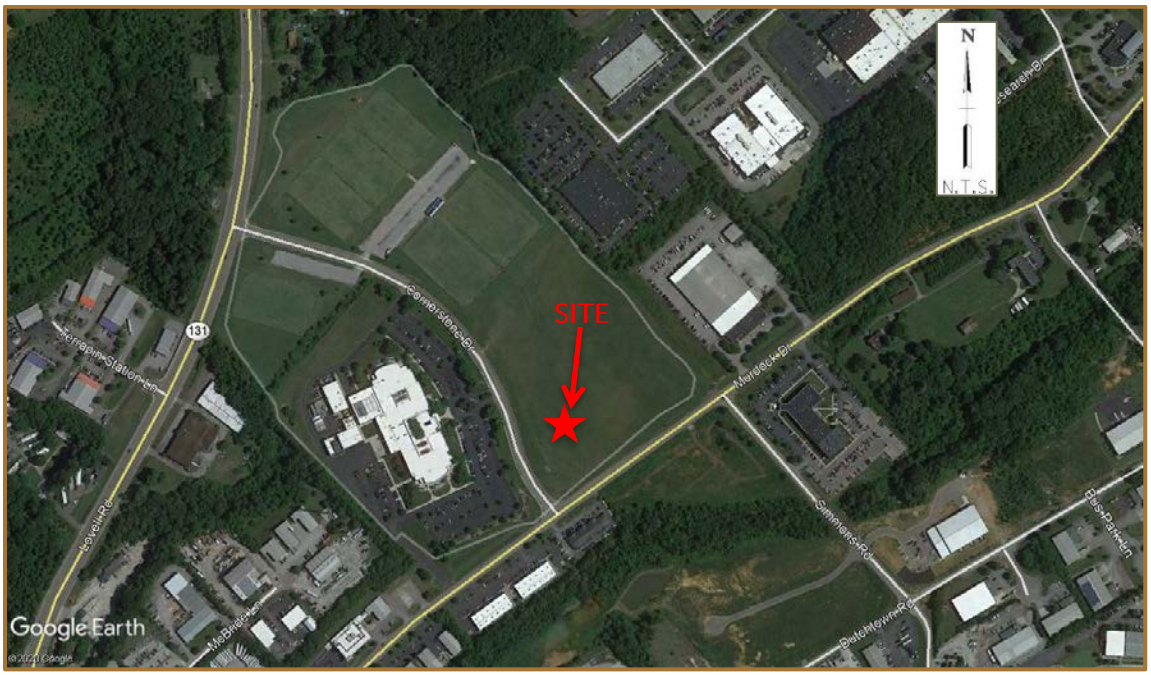


FIGURE 3
EXISTING SITE CONDITIONS

EXISTING TRAFFIC DATA

Two types of existing traffic data were gathered for this study. The Tennessee Department of Transportation (TDOT) collects annual average daily traffic (AADT) data on roadways in the study area. A count station was found near the project site that was felt to have particular relevance for this study. The most currently available data from this station is contained in Table 1.

TABLE 1: ANNUAL AVERAGE DAILY TRAFFIC COUNT SUMMARY

COUNT YEAR	TDOT COUNT STATION 47000464 MURDOCK DRIVE EAST OF CORNERSTONE DRIVE
2014	6,119
2015	6,775
2016	7,147
2017	6,821
2018	6,476
2019	6,555

In addition to the available AADT data, intersection turning movement traffic counts were conducted at the existing study intersections to determine the current peak hour operating volumes. The traffic counts were conducted during the first week of November 2020. During this time, regional traffic volumes and patterns were recovering from COVID-19 pandemic restrictions, including business and school closures and widespread telecommuting or working from home practices. At the time of the counts, schools were conducting in-school instruction at a reduced student capacity. In consultation with the Knoxville-Knox County Planning, the November 2020 count data was increased by 20% to address reductions in typical travel volumes due to the ongoing pandemic.

The 2020 raw traffic data is summarized in FIGURE 4 and the factored traffic data is summarized in FIGURE 5. The raw data traffic count summary sheets are contained in APPENDIX A.

EXISTING CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses employing the methods of the *Highway Capacity Manual* were conducted for the existing conditions at the study intersections. These analyses were performed with the 2020 existing factored traffic volumes, shown in FIGURE 5, and existing intersection traffic control and lane configurations. The EVALUATIONS section of this report may be referenced for tabular summaries of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C. Also contained in APPENDIX C is a section entitled "Capacity and Level of Service Concepts", which provides a description of the utilized procedures.

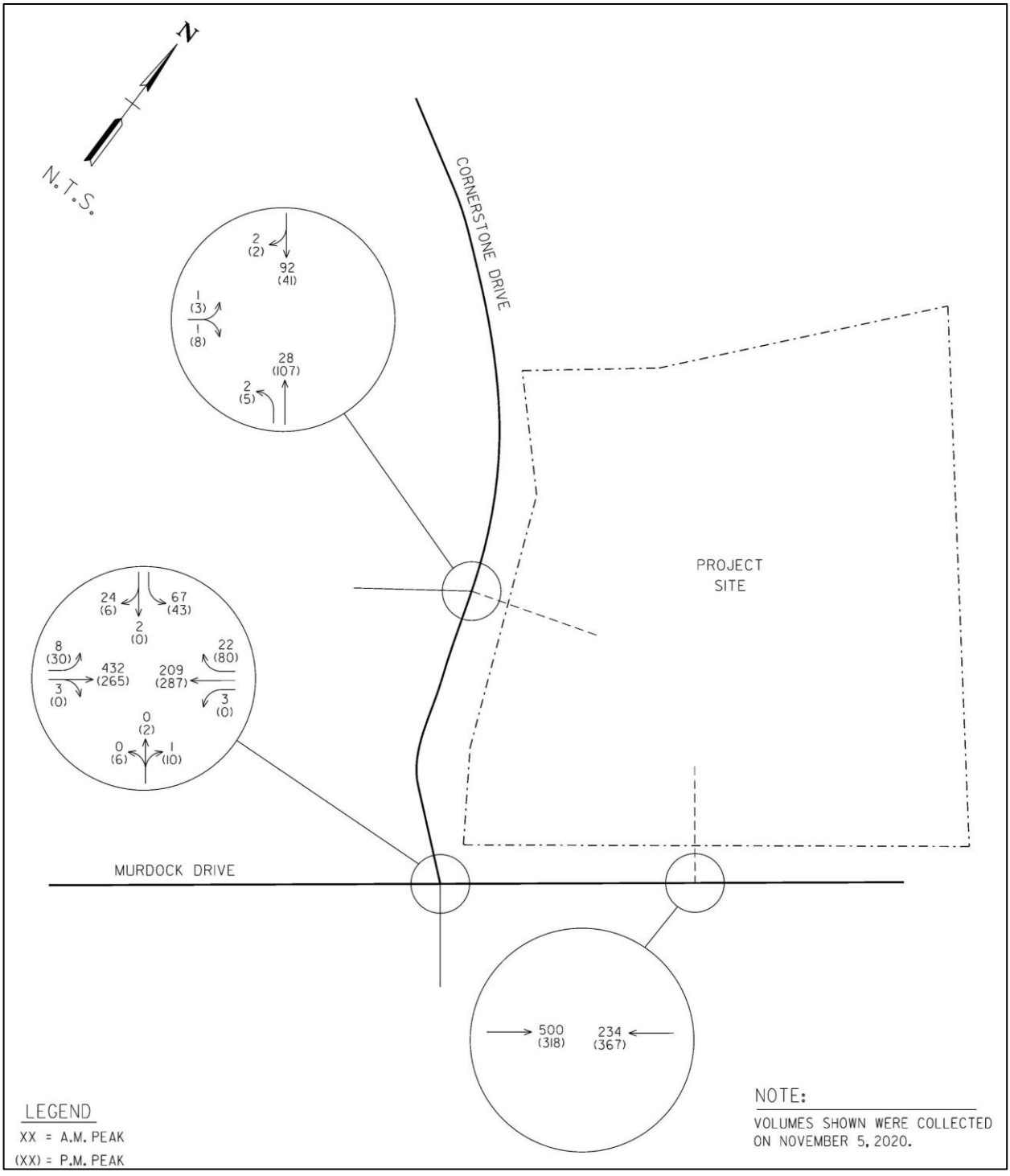


FIGURE 4
2020 EXISTING RAW TRAFFIC VOLUMES

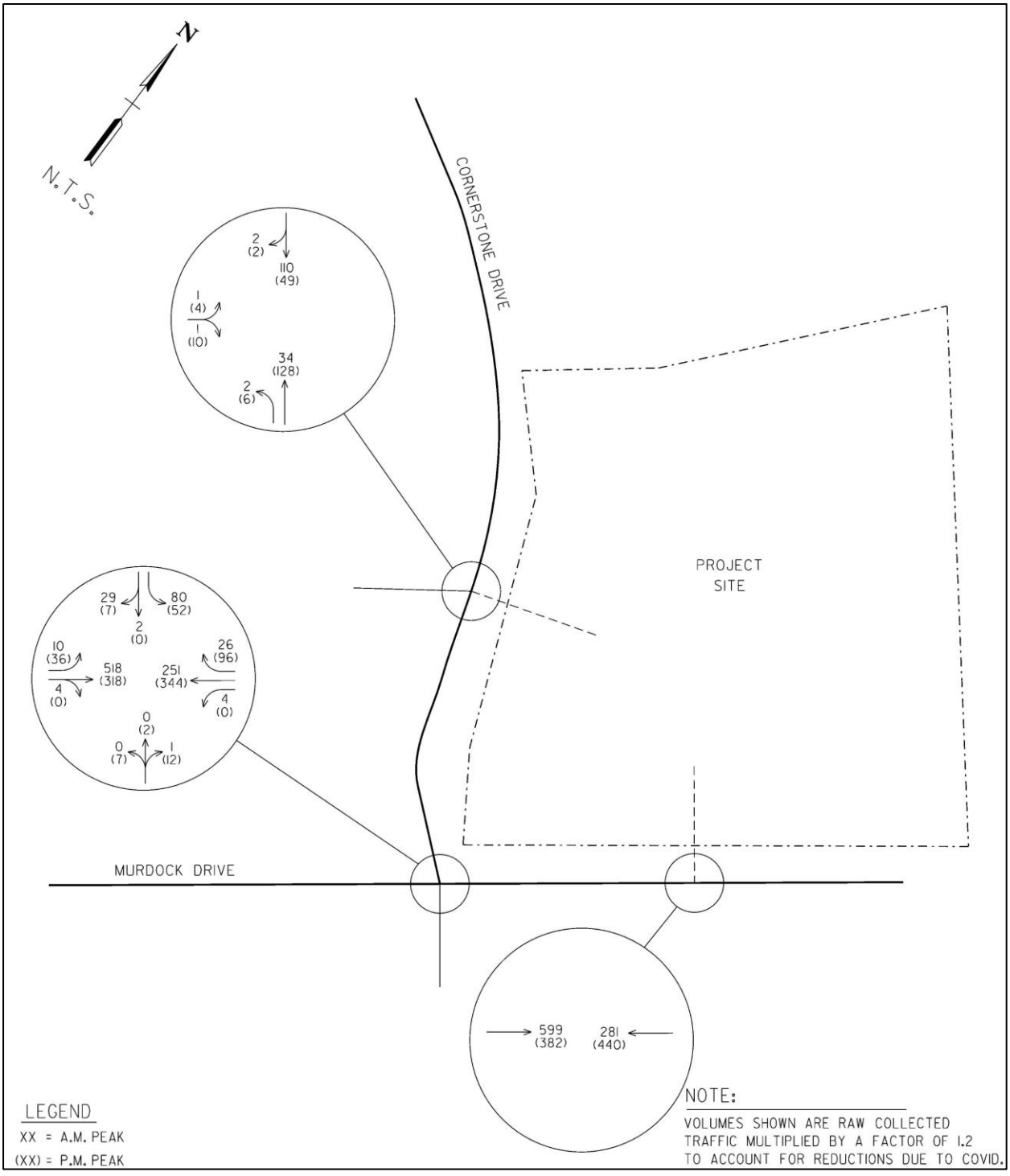


FIGURE 5
2020 EXISTING FACTORED TRAFFIC VOLUMES

BACKGROUND CONDITIONS

BACKGROUND TRAFFIC GROWTH

The proposed development is anticipated to be constructed in one general phase with completion anticipated by 2022. Therefore, year 2022 was established as the appropriate design / analysis year for the study. In order to determine traffic volumes resulting solely from background traffic growth to year 2022, it was necessary to establish an annual growth rate for existing traffic. The TDOT ADT values previously discussed, as well as knowledge of the area, were used to determine an approximate annual growth rate. Based on the available data, a background annual growth rate of two percent was assumed. FIGURE 6 contains the background traffic volumes that would result from this annual growth rate from year 2020, when the counts were conducted, to year 2022.

BACKGROUND CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses as described in the Existing Conditions section of this report were conducted utilizing the Year 2022 background volumes shown in FIGURE 6 and existing intersection traffic control and lane configurations. The EVALUATIONS section of this report may be referenced for tabular summaries of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C.

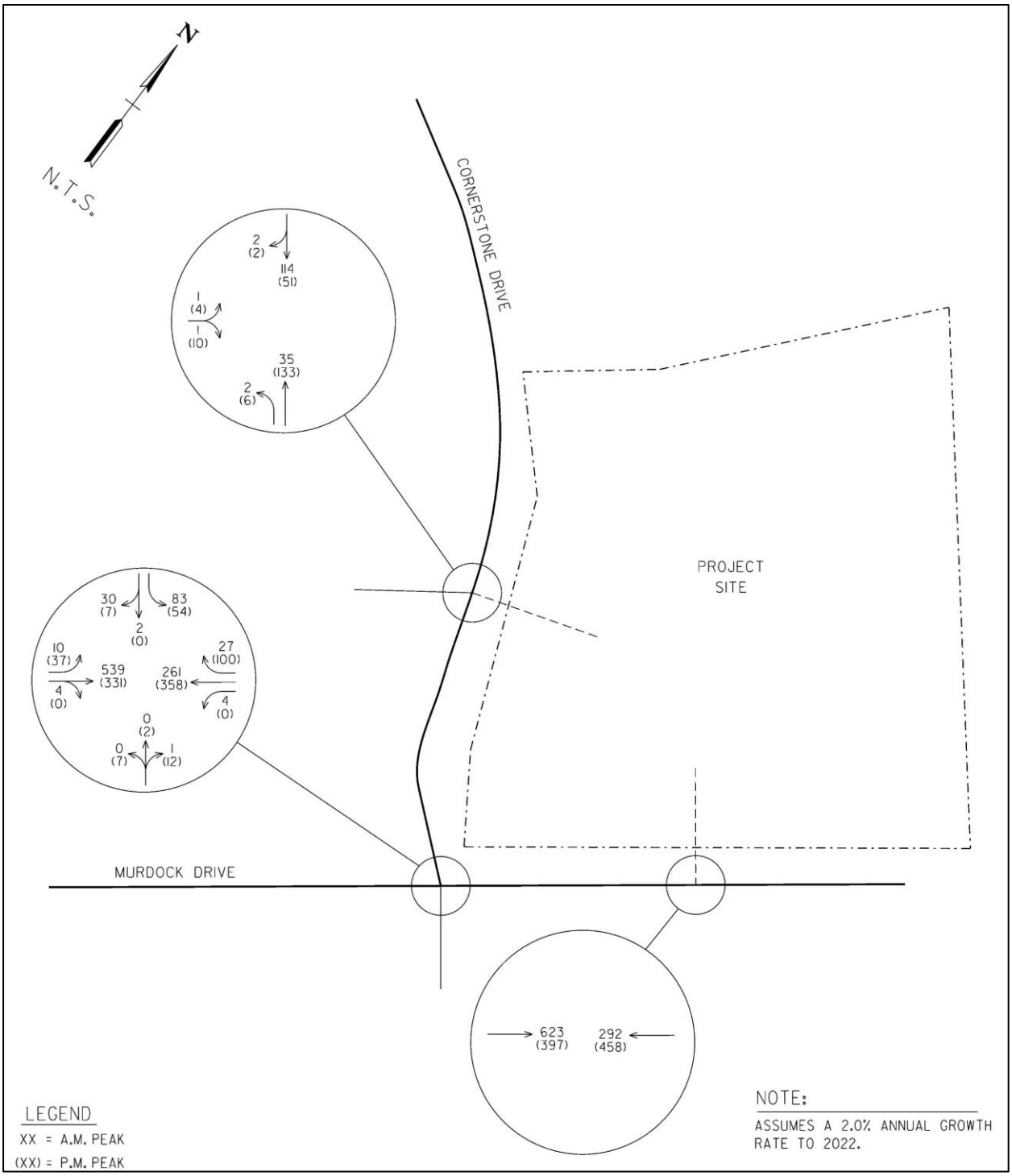


FIGURE 6
2022 BACKGROUND TRAFFIC VOLUMES

FUTURE CONDITIONS

TRIP GENERATION

In order to estimate the expected traffic volumes to be generated by the proposed development, the procedures recommended by the Institute of Transportation Engineers were utilized. The proposed development will include 216 multi-family residential apartment units. Local trip generation rates developed by the Knoxville-Knox County Metropolitan Planning Commission for multi-family apartment type developments within the region were utilized to generate the estimated trips. The generated traffic volumes were determined based on the data for the peak hours of adjacent street traffic. See TABLE 2 for a summary of the traffic generated for this project. More detailed information is contained in APPENDIX B.

TABLE 2: TRIP GENERATION SUMMARY

LAND USE	ITE CODE	SIZE	WEEKDAY (TRIPS/DAY)	AM PEAK HOUR (TRIPS/HOUR)	PM PEAK HOUR (TRIPS/HOUR)
Multi-Family Residential	n/a	216 Dwelling Units	1,906	109	155
Entering Trips Exiting Trips			953 (50%) 953 (50%)	24 (22%) 85 (78%)	85 (55%) 70 (45%)

A.M. Peak Hour trip generation is based on Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.
P.M. Peak Hour trip generation is based on Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

TRIP DISTRIBUTION AND ASSIGNMENT

The proposed trip distribution for this development was determined through a review of existing travel patterns, local knowledge of the study area, proposed site location in relation to surrounding roadway network, and engineering judgement. FIGURE 7 provides a summary of how the above site generated trips would be assigned to the study intersection. FIGURE 8 provides the proposed trip assignment volumes to the studied intersections.

FUTURE TRAFFIC VOLUMES

Future projected traffic volumes for the study intersection were developed by adding the generated and assigned trips shown in FIGURE 8 to the 2022 background traffic volumes developed in the previous section and shown in FIGURE 6. These combined 2022 volumes reflect the existing traffic, the background traffic growth, and the generated traffic from the proposed development. These future volumes are shown on FIGURE 9 and are the combined volumes used in the analyses of future conditions with the proposed development.

FUTURE CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses, as described in the Existing Conditions section of this report, were conducted for future conditions utilizing the traffic volumes shown in the build-out scenario. These analyses employed appropriate modifications to the existing lane configurations and traffic control in order to serve the development, as discussed in the EVALUATIONS section of this report. Tabular summaries of the analysis results and associated discussion are also contained in the EVALUATIONS section. In addition, detailed computer printout summaries of the analyses are contained in APPENDIX C.

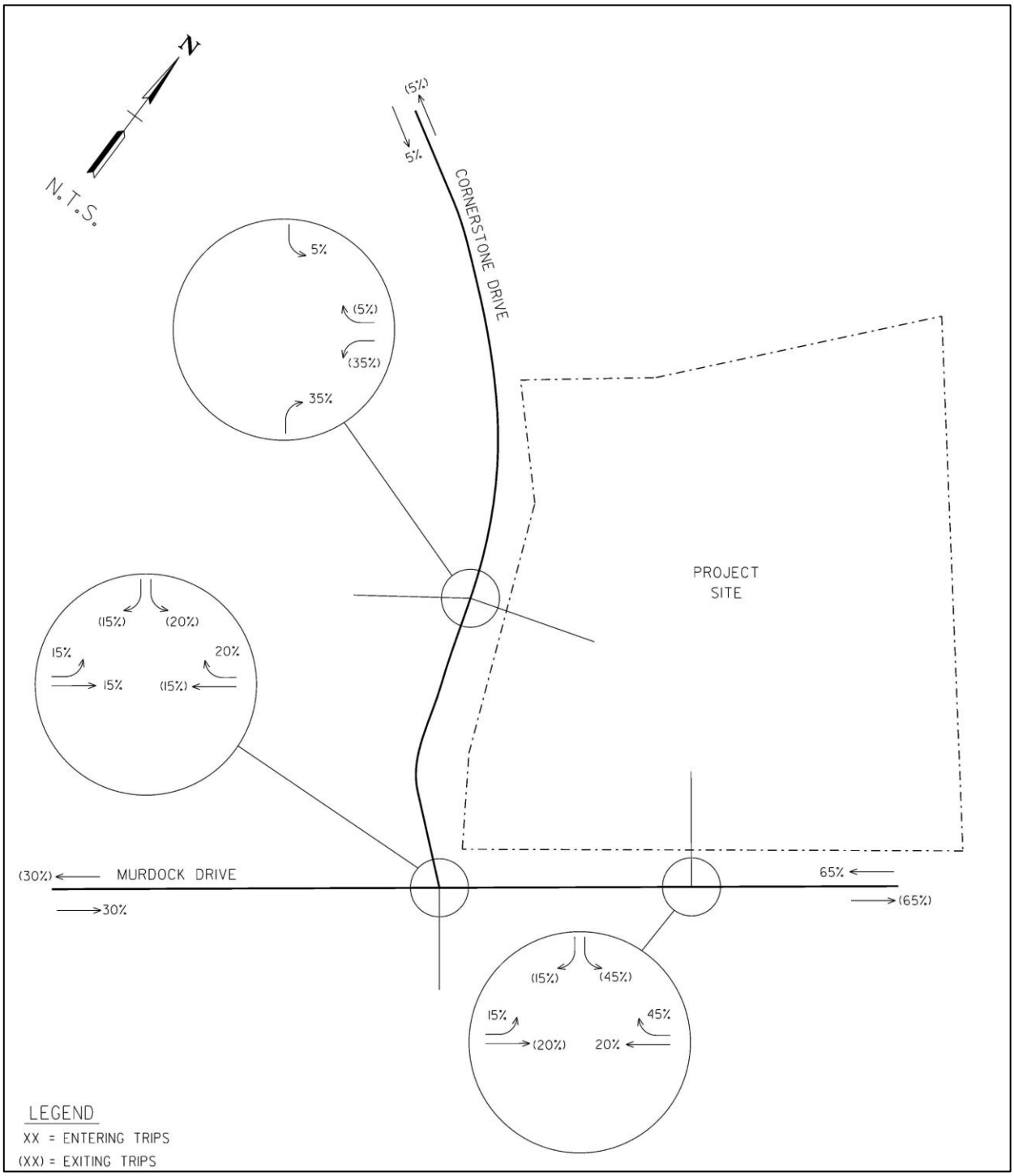


FIGURE 7
TRIP DISTRIBUTION

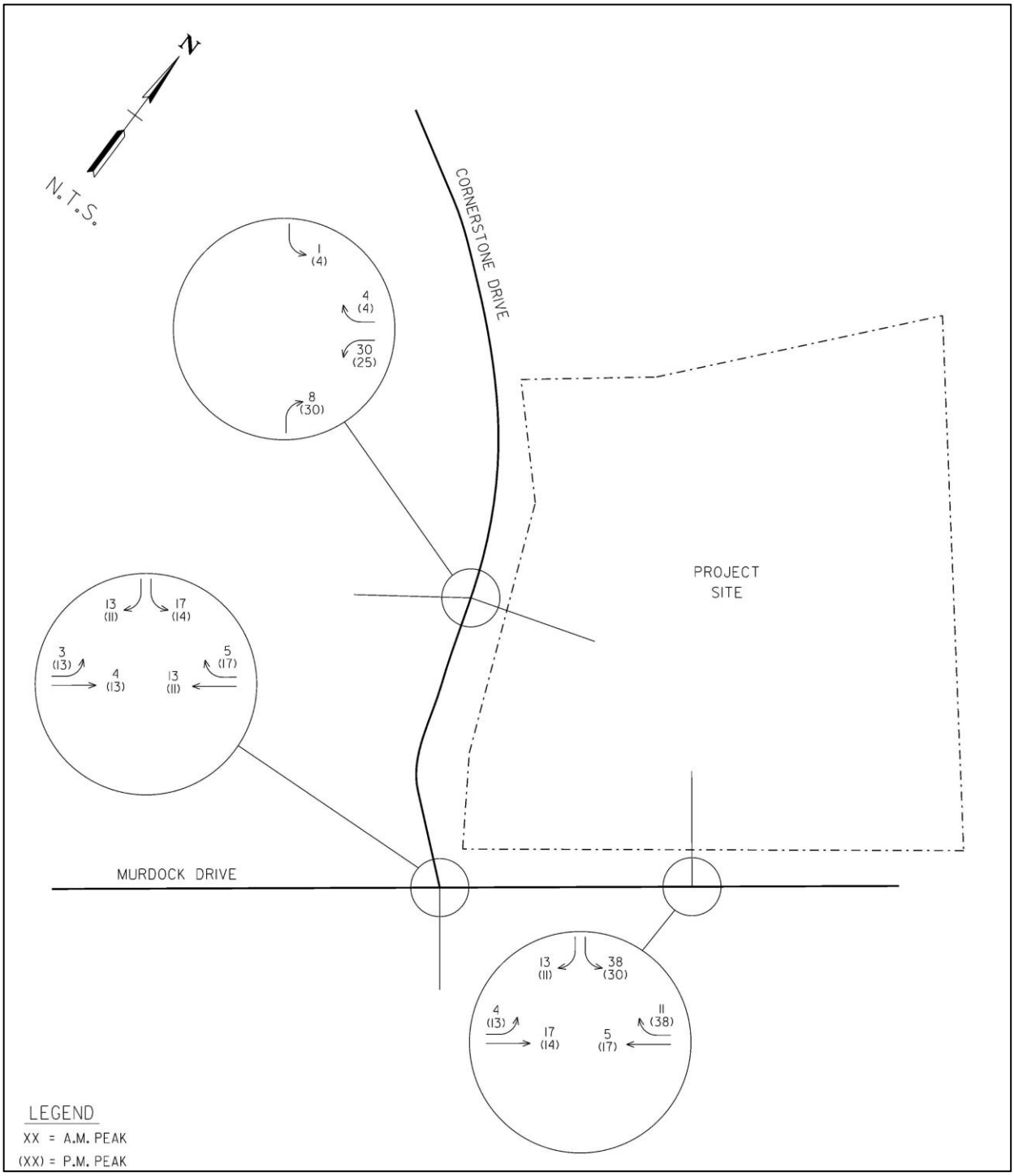


FIGURE 8
TRIP ASSIGNMENT

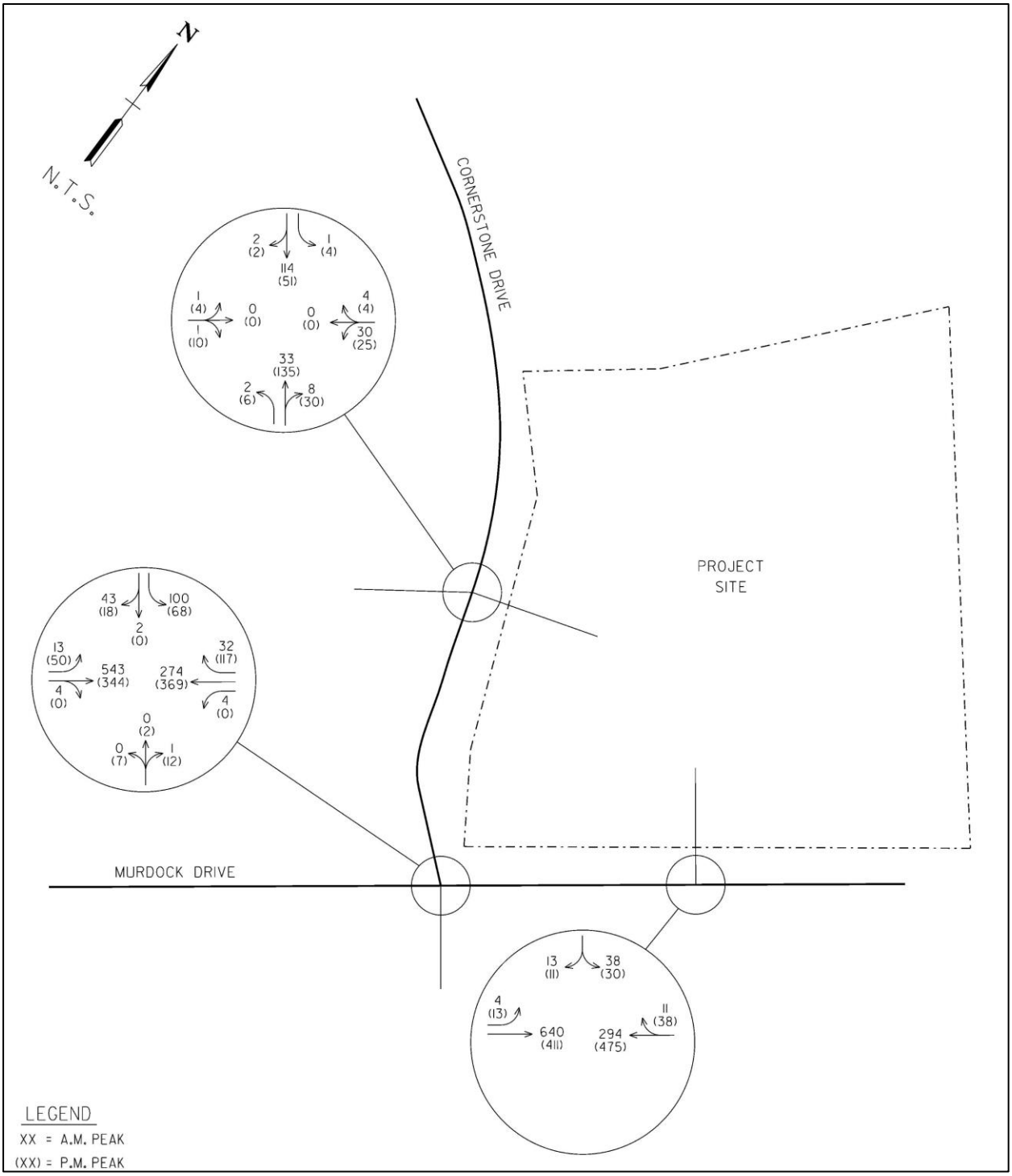


FIGURE 9
2022 COMBINED TRAFFIC VOLUMES

EVALUATIONS

INTERSECTION CAPACITY ANALYSES

As discussed in the preceding sections of this report, capacity analyses employing the methods of the Highway Capacity Manual (HCM 6th Edition) were conducted for the study intersections. These analyses were performed for the previously discussed development scenarios. A summary of the capacity analyses results is shown in TABLE 3, while the resulting conclusions and recommendations are covered in the CONCLUSIONS and RECOMMENDATIONS section of this report.

TABLE 3: CAPACITY ANALYSES SUMMARY

INTERSECTION	TIME PERIOD	YEAR 2020 EXISTING (LOS/DELAY)	YEAR 2022 BACKGROUND (LOS/DELAY)	YEAR 2022 COMBINED (LOS/DELAY)
Cornerstone Dr. at Murdock Dr. [1]SIDE STREET STOP CONTROL	A.M. P.M.	C 17.1 C 16.7	C 17.8 C 17.4	C 19.0 C 18.6
Site Access at Cornerstone Dr. [1]SIDE STREET STOP CONTROL	EB A.M. EB P.M.	A 9.3 A 9.1	A 9.4 A 9.1	A 9.5 A 9.3
	WB A.M. WB P.M.	-	-	B 10.0 B 10.7
Site Access at Murdock Dr. [1]SIDE STREET STOP CONTROL	A.M. P.M.	-	-	C 15.8 C 15.9

[1]SIDE STREET STOP CONTROL – Data shown are Level-of-Service and Average Vehicular Delay (seconds) for the critical side street approach utilizing HCM methodology.

TRAFFIC SIGNAL WARRANT ASSESSMENT

The traffic signal volume warrants from the Manual on Uniform Traffic Control Devices were evaluated for the study intersection of Cornerstone Drive at Murdock Drive. Traffic signal warrant analyses were performed for three different scenarios; existing, background, and combined. These are summarized below, along with the associated results. Spreadsheets summarizing these analyses are contained in APPENDIX D.

- Scenario 1 – 2020 Existing Factored Traffic Volumes – No signal warrants satisfied
  - Raw traffic data factored by 1.2 to account for reductions due to COVID-19 impacts
- Scenario 2 – Year 2022 Background Traffic Volumes – No signal warrants satisfied
  - Existing factored data with 2.0% annual growth applied from Year 2020 to Year 2022
- Scenario 3 – Year 2022 Combined Traffic Volumes – No signal warrants satisfied
  - AM Peak hour generated trips were added to volumes beginning at hours 7am, 8am, 11am, and 12pm
  - PM Peak hour generated trips were added to volumes beginning at hours 2pm, 3pm, 4pm, and 5pm

TURN LANE ASSESSMENTS

A turn lane evaluation was conducted for a potential right-turn lane to enter the project site at the proposed site access intersections along Cornerstone Drive and Murdock Drive. This evaluation, which utilized Knox County turn lane warrants, found that a right-turn lane is not warranted for the Murdock Drive site access intersection and is not warranted for the Cornerstone Drive site access intersection. The spreadsheets summarizing this evaluation are contained in APPENDIX E.

The existing two-way-left-turn lane along Murdock Drive was evaluated for potential queuing conflicts for eastbound left turns entering the site along Murdock Drive and existing westbound left turns entering the existing commercial development at the intersection of Cornerstone Drive and Murdock Drive. Proposed development plans indicate the site access along Murdock Drive will be constructed roughly 400 feet to the east of the intersection of Cornerstone Drive at Murdock Drive.

The interaction of left turns at these two intersections is typically not desirable and can often result in conflicting left-turn movements from the main road to the side streets. However, the capacity analysis for these two study intersections indicate minimal left turn queues of less than 25 feet at each intersection is expected during the studied peak hours. Since minimal offset left-turn traffic is expected at each of these intersections, the offset left-turn configuration is not anticipated to negatively impact intersection operation at either intersection of Cornerstone Drive at Murdock Drive and the proposed site access at Murdock Drive.

SIGHT DISTANCE ASSESSMENT

Intersection sight distance was assessed looking both directions from the proposed site driveway intersections. Excellent sight distance is available at all locations to satisfy requirements, as all roadway approaches are relatively flat, straight and without sight limiting vegetation or fixed objects. Care should be taken during the site development process to ensure that site features such as landscaping and signage do not restrict these existing sight distances.

PEDESTRIAN CONNECTION ASSESSMENT

The proposed development will provide sidewalk along the property frontage to Murdock Drive and tie into existing sidewalk along Cornerstone Drive. The existing property contains a walking trail that traverses the US Cellular soccer fields and office building properties. The proposed development will remove the portion of the walking trail on this site property.

CONCLUSIONS & RECOMMENDATIONS

The primary conclusion of this study is that the traffic generated from the proposed development will not have significant impacts at the studied intersections. The capacity analysis indicates a minimal increase in delay is expected at each intersection once the proposed development is built-out. The intersection of Cornerstone Drive at Murdock Drive does not warrant a signal installation under build-out conditions and the existing intersection configuration / control is expected to adequately accommodate traffic generated by the proposed development.

Additionally, anticipated traffic volumes at the site access intersection along Murdock Drive indicate a westbound right-turn lane is not recommended to be installed. Currently, the site access on Murdock Drive is proposed to be installed in the existing right-turn lane taper for the intersection of Cornerstone Drive and Murdock Drive. It is recommended to shorten the existing right-turn lane / taper to accommodate the installation of the proposed site access so the site access is not installed within a turn lane taper.

The following listing is a summary of the improvements that are recommended to be implemented with the construction of this project:

1. Install STOP signs at the site access locations on the site access approaches to Cornerstone Drive and Murdock Drive.

2. At the intersection of Cornerstone Drive at Murdock Drive, shorten the existing westbound right-turn lane storage from 250' to 150' and shorten the existing right-turn lane taper from 200' to 150' to allow for the proposed site access along Murdock Drive to be installed outside of the existing right-turn lane taper.

3. Maintain intersection corner sight distances on the site driveways by ensuring that new site signage and landscaping is appropriately located.

APPENDIX

APPENDIX ORDER:

A. TRAFFIC DATA

B. TRIP GENERATION INFORMATION

C. CAPACITY ANALYSES

D. SIGNAL WARRANT SPREADSHEETS

E. TURN LANE WARRANT SHEETS

F. MPC COMMENTS

APPENDIX A – TRAFFIC DATA

Prepared by National Data & Surveying Services

Cornerstone Dr/Sentinel Builders Dwy & Murdock Dr

Peak Hour Turning Movement Count

ID: 20-190017-001
City: Knoxville

Day: Thursday
Date: 11/05/2020

Cornerstone Dr/Sentinel Builders Dwy

SOUTHBOUND

PEAK HOURS								COUNT PERIODS
07:30 AM - 08:30 AM	AM	24	2	67	0	31	AM	07:00 AM - 09:00 AM
12:00 PM - 01:00 PM	NOON	7	0	58	0	53	NOON	11:00 AM - 01:00 PM
04:30 PM - 05:30 PM	PM	6	0	43	0	112	PM	02:00 PM - 06:00 PM

EASTBOUND (Murdock Dr)

AM	NOON	PM		
233	202	299	⇦	
0	0	0	↶	0
8	9	30	↱	0
432	201	265	→	1
3	3	0	↴	0
AM	NOON	PM		

WESTBOUND (Murdock Dr)

PM	NOON	AM		
80	44	23	↰	1
287	193	209	←	1
0	5	3	↰	0
0	0	0	↶	0
318	260	500	⇨	
PM	NOON	AM		

CONTROL

1-Way Stop (SB)

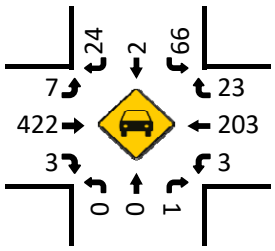
TEV	772 AM	523 NOON	729 PM
PHF	0.83	0.88	0.79

	1	0	1	0	
	0	0	1	0	
⇩	↶	↰	↑	↱	
PM	0	0	6	2	10 PM
NOON	8	0	2	0	1 NOON
AM	8	0	0	0	1 AM

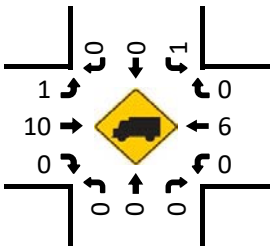
NORTHBOUND

Cornerstone Dr/Sentinel Builders Dwy

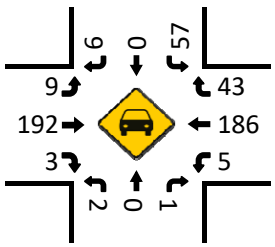
Cars (AM)



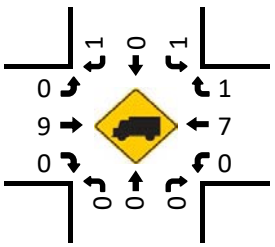
HT (AM)



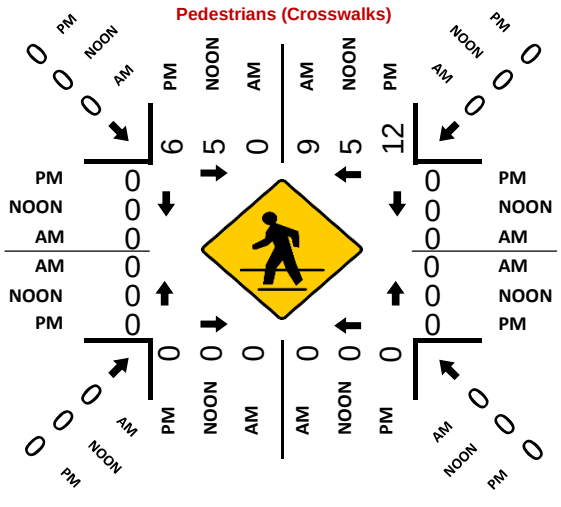
Cars (NOON)



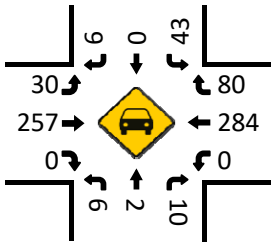
HT (NOON)



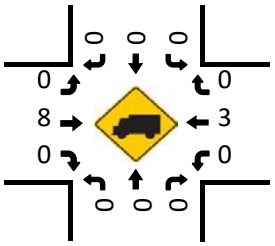
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 20-190017-001
Location: Cornerstone Dr/Sentinel Builders Dwy & Murdock Dr
City: Knoxville

Day: Thursday
Date: 11/05/2020

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Cornerstone Dr/Sentinel Builders Dwy Northbound						Cornerstone Dr/Sentinel Builders Dwy Southbound						Murdock Dr Eastbound						Murdock Dr Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	5	0	2	0	1	7	0	32	0	0	0	32	0	30	5	0	0	35	74
7:15 AM	0	0	0	0	0	0	10	1	2	0	5	13	1	70	1	0	0	72	0	29	3	0	0	32	117
7:30 AM	0	0	0	0	0	0	19	1	6	0	2	26	1	106	1	0	0	108	0	44	4	0	0	48	182
7:45 AM	0	0	0	0	0	0	21	1	8	0	2	30	3	129	0	0	0	132	1	62	8	0	0	71	233
Total	0	0	0	0	0	0	55	3	18	0	10	76	5	337	2	0	0	344	1	165	20	0	0	186	606
8:00 AM	0	0	1	0	0	1	12	0	6	0	2	18	2	124	1	0	0	127	0	65	2	0	0	67	213
8:15 AM	0	0	0	0	0	0	15	0	4	0	3	19	2	73	1	0	0	76	2	38	9	0	0	49	144
8:30 AM	1	0	1	0	0	2	8	0	9	0	7	17	2	58	3	0	0	63	3	38	5	0	0	46	128
8:45 AM	0	0	0	0	0	0	15	0	4	0	6	19	6	44	0	0	0	50	5	36	8	0	0	49	118
Total	1	0	2	0	0	3	50	0	23	0	18	73	12	299	5	0	0	316	10	177	24	0	0	211	603
BREAK																									
11:00 AM	0	0	3	0	0	3	11	2	5	0	1	18	4	38	1	0	0	43	0	47	12	0	0	59	123
11:15 AM	0	0	2	0	0	2	9	0	2	0	5	11	4	28	0	0	2	32	0	48	5	0	0	53	98
11:30 AM	1	0	3	0	0	4	16	0	3	0	4	19	1	33	0	0	0	34	0	49	23	0	0	72	129
11:45 AM	2	0	1	0	0	3	10	0	1	0	5	11	2	58	2	0	0	62	0	58	9	0	0	67	143
Total	3	0	9	0	0	12	46	2	11	0	15	59	11	157	3	0	2	171	0	202	49	0	0	251	493
12:00 PM	0	0	0	0	0	0	13	0	1	0	5	14	1	47	0	0	0	48	2	50	19	0	0	71	133
12:15 PM	2	0	0	0	0	2	14	0	2	0	2	16	2	38	0	0	0	40	1	46	5	0	0	52	110
12:30 PM	0	0	0	0	0	0	11	0	1	0	3	12	4	52	1	0	0	57	2	53	8	0	0	63	132
12:45 PM	0	0	1	0	0	1	20	0	3	0	0	23	2	64	2	0	0	68	0	44	12	0	0	56	148
Total	2	0	1	0	0	3	58	0	7	0	10	65	9	201	3	0	0	213	5	193	44	0	0	242	523
BREAK																									
2:00 PM	0	0	1	0	0	1	14	0	2	0	1	16	1	35	1	0	0	37	0	53	11	0	0	64	118
2:15 PM	0	0	0	0	0	0	12	0	1	0	2	13	1	46	1	0	0	48	0	39	8	0	0	47	108
2:30 PM	1	1	0	0	0	2	7	0	1	0	3	8	0	53	1	0	0	54	1	52	15	0	0	68	132
2:45 PM	3	0	1	0	0	4	10	0	1	0	5	11	4	57	0	0	0	61	1	52	8	0	0	61	137
Total	4	1	2	0	0	7	43	0	5	0	11	48	6	191	3	0	0	200	2	196	42	0	0	240	495
3:00 PM	0	1	1	0	0	2	10	0	0	0	3	10	2	53	0	0	1	55	1	64	17	0	0	82	149
3:15 PM	0	1	0	0	0	1	7	0	5	0	4	12	0	54	0	0	0	54	1	78	11	0	0	90	157
3:30 PM	0	1	2	0	0	3	9	1	2	0	4	12	3	63	1	0	0	67	1	89	15	0	0	105	187
3:45 PM	1	0	1	0	0	2	13	1	2	0	3	16	3	59	1	0	0	63	2	95	13	0	0	110	191
Total	1	3	4	0	0	8	39	2	9	0	14	50	8	229	2	0	1	239	5	326	56	0	0	387	684
4:00 PM	2	0	1	0	0	3	8	0	3	0	6	11	10	54	2	0	0	66	0	69	18	0	0	87	167
4:15 PM	2	1	1	0	0	4	8	0	2	1	6	11	5	51	1	0	0	57	0	46	15	0	0	61	133
4:30 PM	1	0	1	0	0	2	11	0	0	0	7	11	5	61	0	0	0	66	0	65	17	0	0	82	161
4:45 PM	3	0	5	0	0	8	5	0	0	0	5	5	6	64	0	0	0	70	0	60	19	0	0	79	162
Total	8	1	8	0	0	17	32	0	5	1	24	38	26	230	3	0	0	259	0	240	69	0	0	309	623
5:00 PM	2	0	1	0	0	3	14	0	3	0	4	17	17	86	0	0	0	103	0	86	23	0	0	109	232
5:15 PM	0	2	3	0	0	5	13	0	3	0	2	16	2	54	0	0	0	56	0	76	21	0	0	97	174
5:30 PM	0	0	0	0	0	0	7	0	0	0	10	7	3	52	0	0	0	55	0	68	17	0	0	85	147
5:45 PM	0	0	0	0	0	0	2	0	2	0	6	4	3	39	0	0	0	42	0	57	15	0	0	72	118
Total	2	2	4	0	0	8	36	0	8	0	22	44	25	231	0	0	0	256	0	287	76	0	0	363	671
Grand Total	21	7	30	0	0	58	359	7	86	1	124	453	102	1875	21	0	3	1998	23	1786	380	0	0	2189	4698
Apprch %	36.2	12.1	51.7	0.0	0.0		79.2	1.5	19.0	0.2	27.4		5.1	93.8	1.1	0.0	0.2		1.1	81.6	17.4	0.0	0.0		
Total %	0.4	0.1	0.6	0.0	0.0	1.2	7.6	0.1	1.8	0.0	2.6	9.6	2.2	39.9	0.4	0.0	0.1	42.5	0.5	38.0	8.1	0.0	0.0	46.6	
Cars, PU, Vans	21	7	30	0		58	354	7	85	1		447	101	1808	21	0		1930	23	1737	373	0		2133	4568
% Cars, PU, Vans	100.0	100.0	100.0	0.0		100.0	98.6	100.0	98.8	100.0		98.7	99.0	96.4	100.0	0.0		96.6	100.0	97.3	98.2	0.0		97.4	97.2
Heavy Trucks	0	0	0	0		0	5	0	1	0		6	1	67	0	0		68	0	49	7	0		56	130
%Heavy Trucks	0.0	0.0	0.0	0.0		0.0	1.4	0.0	1.2	0.0		1.3	1.0	3.6	0.0	0.0		3.4	0.0	2.7	1.8	0.0		2.6	2.8

Project ID: 20-190017-001
Location: Cornerstone Dr/Sentinel Builders Dwy & Murdock D
City: Knoxville

PEAK HOURS

Day: Thursday
Date: 11/05/2020

AM

	Cornerstone Dr/Sentinel Builders Dw Northbound					Cornerstone Dr/Sentinel Builders Dwy Southbound					Murdock Dr Eastbound					Murdock Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	0	0	0	0	19	1	6	0	26	1	106	1	0	108	0	44	4	0	48	182
7:45 AM	0	0	0	0	0	21	1	8	0	30	3	129	0	0	132	1	62	8	0	71	233
8:00 AM	0	0	1	0	1	12	0	6	0	18	2	124	1	0	127	0	65	2	0	67	213
8:15 AM	0	0	0	0	0	15	0	4	0	19	2	73	1	0	76	2	38	9	0	49	144
Total Volume	0	0	1	0	1	67	2	24	0	93	8	432	3	0	443	3	209	23	0	235	772
% App. Total	0.0	0.0	100.0	0.0	100	72.0	2.2	25.8	0.0	100	1.8	97.5	0.7	0.0	100	1.3	88.9	9.8	0.0	100	
PHF					0.250					0.775					0.839					0.827	0.828
Cars, PU, Vans	0	0	1	0	1	66	2	24	0	92	7	422	3	0	432	3	203	23	0	229	754
% Cars, PU, Vans	0.0	0.0	100.0	0.0	100.0	98.5	100.0	100.0	0.0	98.9	87.5	97.7	100.0	0.0	97.5	100.0	97.1	100.0	0.0	97.4	97.7
Heavy Trucks	0	0	0	0	0	1	0	0	0	1	1	10	0	0	11	0	6	0	0	6	18
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.1	12.5	2.3	0.0	0.0	2.5	0.0	2.9	0.0	0.0	2.6	2.3

NOON

	Cornerstone Dr/Sentinel Builders Dw Northbound					Cornerstone Dr/Sentinel Builders Dwy Southbound					Murdock Dr Eastbound					Murdock Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 11:00 AM to 01:00 PM																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	13	0	1	0	14	1	47	0	0	48	2	50	19	0	71	133
12:15 PM	2	0	0	0	2	14	0	2	0	16	2	38	0	0	40	1	46	5	0	52	110
12:30 PM	0	0	0	0	0	11	0	1	0	12	4	52	1	0	57	2	53	8	0	63	132
12:45 PM	0	0	1	0	1	20	0	3	0	23	2	64	2	0	68	0	44	12	0	56	148
Total Volume	2	0	1	0	3	58	0	7	0	65	9	201	3	0	213	5	193	44	0	242	523
% App. Total	66.7	0.0	33.3	0.0	100	89.2	0.0	10.8	0.0	100	4.2	94.4	1.4	0.0	100	2.1	79.8	18.2	0.0	100	
PHF					0.375					0.707					0.783					0.852	0.883
Cars, PU, Vans	2	0	1	0	3	57	0	6	0	63	9	192	3	0	204	5	186	43	0	234	504
% Cars, PU, Vans	100.0	0.0	100.0	0.0	100.0	98.3	0.0	85.7	0.0	96.9	100.0	95.5	100.0	0.0	95.8	100.0	96.4	97.7	0.0	96.7	96.4
Heavy Trucks	0	0	0	0	0	1	0	1	0	2	0	9	0	0	9	0	7	1	0	8	19
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	1.7	0.0	14.3	0.0	3.1	0.0	4.5	0.0	0.0	4.2	0.0	3.6	2.3	0.0	3.3	3.6

PM

	Cornerstone Dr/Sentinel Builders Dw Northbound					Cornerstone Dr/Sentinel Builders Dwy Southbound					Murdock Dr Eastbound					Murdock Dr Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 02:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	1	0	1	0	2	11	0	0	0	11	5	61	0	0	66	0	65	17	0	82	161
4:45 PM	3	0	5	0	8	5	0	0	0	5	6	64	0	0	70	0	60	19	0	79	162
5:00 PM	2	0	1	0	3	14	0	3	0	17	17	86	0	0	103	0	86	23	0	109	232
5:15 PM	0	2	3	0	5	13	0	3	0	16	2	54	0	0	56	0	76	21	0	97	174
Total Volume	6	2	10	0	18	43	0	6	0	49	30	265	0	0	295	0	287	80	0	367	729
% App. Total	33.3	11.1	55.6	0.0	100	87.8	0.0	12.2	0.0	100	10.2	89.8	0.0	0.0	100	0.0	78.2	21.8	0.0	100	
PHF					0.563					0.721					0.716					0.842	0.786
Cars, PU, Vans	6	2	10	0	18	43	0	6	0	49	30	257	0	0	287	0	284	80	0	364	718
% Cars, PU, Vans	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	97.0	0.0	0.0	97.3	0.0	99.0	100.0	0.0	99.2	98.5
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	0	3	0	0	3	11
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	2.7	0.0	1.0	0.0	0.0	0.8	1.5

Prepared by National Data & Surveying Services

Cornerstone Dr & US Cellular Main Entrance Dwy

Peak Hour Turning Movement Count

ID: 20-190017-002
City: Knoxville

Day: Thursday
Date: 11/05/2020

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Cornerstone Dr — SOUTHBOUND

	↲	↓	↳	U	⇧
AM	2	92	0	0	28
NOON	0	0	0	0	0
PM	2	41	0	0	111
	0	1	0	0	

US Cellular Main Entrance Dwy — EASTBOUND

	AM	NOON	PM	
⇦	4	0	7	
U	0	0	0	0
↰	1	0	3	0
→	0	0	0	1
↱	1	0	8	0

US Cellular Main Entrance Dwy — WESTBOUND

		PM	NOON	AM
↰	0	0	0	0
←	0	0	0	0
↲	0	0	0	0
U	0	0	0	0
⇨		0	0	0

CONTROL

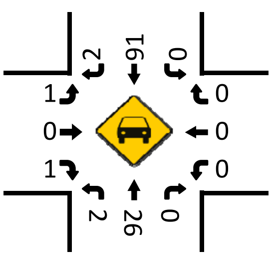
1-Way Stop (EB)

	AM	NOON	PM
TEV	125	0	167
PHF	0.76		0.71

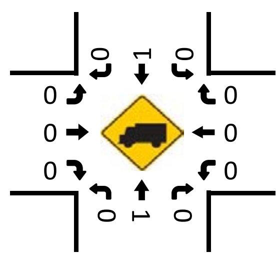
Cornerstone Dr — NORTHBOUND

		U	↰	↑	↱
		0	0	1	0
PM	49	0	5	108	0
NOON	0	0	0	0	0
AM	93	0	2	27	0

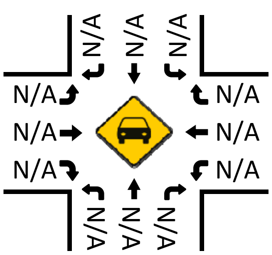
Cars (AM)



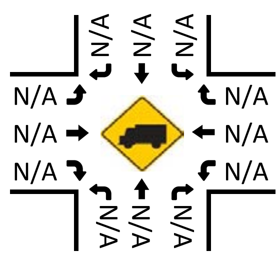
HT (AM)



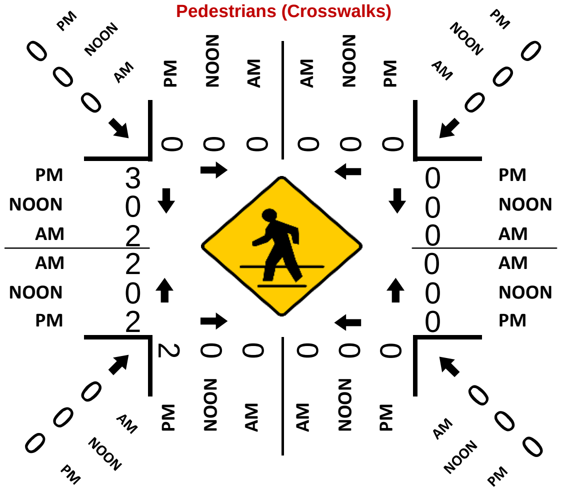
Cars (NOON)



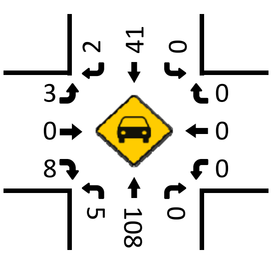
HT (NOON)



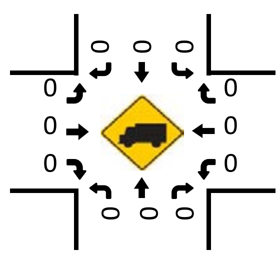
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 20-190017-002
Location: Cornerstone Dr & US Cellular Main Entrance Dwy
City: Knoxville

Day: Thursday
Date: 11/05/2020

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Cornerstone Dr Northbound						Cornerstone Dr Southbound						US Cellular Main Entrance Dwy Eastbound						US Cellular Main Entrance Dwy Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	5	0	0	0	5	0	6	0	0	0	6	0	0	1	0	0	1	0	0	0	0	0	0	12
7:15 AM	0	4	0	0	0	4	0	12	0	0	0	12	0	0	1	0	0	1	0	0	0	0	0	0	17
7:30 AM	0	5	0	0	0	5	0	25	1	0	0	26	0	0	1	0	0	1	0	0	0	0	0	0	32
7:45 AM	1	10	0	0	0	11	0	30	0	0	0	30	0	0	0	0	2	0	0	0	0	0	0	0	41
Total	1	24	0	0	0	25	0	73	1	0	0	74	0	0	3	0	2	3	0	0	0	0	0	0	102
8:00 AM	1	2	0	0	0	3	0	18	0	0	0	18	1	0	0	0	2	1	0	0	0	0	0	0	22
8:15 AM	0	10	0	0	0	10	0	19	1	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	30
8:30 AM	2	7	0	0	0	9	0	18	4	0	0	22	0	0	1	0	1	1	0	0	0	0	0	0	32
8:45 AM	1	13	0	0	0	14	0	16	4	0	0	20	0	0	1	0	0	1	0	0	0	0	0	0	35
Total	4	32	0	0	0	36	0	71	9	0	0	80	1	0	2	0	3	3	0	0	0	0	0	0	119
BREAK																									
4:00 PM	0	28	0	0	0	28	0	10	0	0	0	10	1	0	0	0	0	1	0	0	0	0	0	0	39
4:15 PM	0	21	0	0	0	21	0	11	0	0	0	11	0	0	1	0	1	1	0	0	0	0	0	0	33
4:30 PM	0	23	0	0	0	23	0	9	1	0	0	10	2	0	1	0	3	3	0	0	0	0	0	0	36
4:45 PM	3	22	0	0	0	25	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	30
Total	3	94	0	0	0	97	0	35	1	0	0	36	3	0	2	0	4	5	0	0	0	0	0	0	138
5:00 PM	2	38	0	0	2	40	0	14	0	0	0	14	0	0	5	0	1	5	0	0	0	0	0	0	59
5:15 PM	0	25	0	0	0	25	0	13	1	0	0	14	1	0	2	0	1	3	0	0	0	0	0	0	42
5:30 PM	1	19	0	0	0	20	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	26
5:45 PM	1	16	0	0	0	17	0	2	1	0	0	3	2	0	2	0	3	4	0	0	0	0	0	0	24
Total	4	98	0	0	2	102	0	35	2	0	0	37	3	0	9	0	5	12	0	0	0	0	0	0	151
Grand Total	12	248	0	0	2	260	0	214	13	0	0	227	7	0	16	0	14	23	0	0	0	0	0	0	510
Apprch %	4.6	95.4	0.0	0.0	0.8		0.0	94.3	5.7	0.0	0.0		30.4	0.0	69.6	0.0	60.9		0.0	0.0	0.0	0.0	0.0		
Total %	2.4	48.6	0.0	0.0	0.4	51.0	0.0	42.0	2.5	0.0	0.0	44.5	1.4	0.0	3.1	0.0	2.7	4.5	0.0	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	12	245	0	0		257	0	213	13	0		226	6	0	16	0		22	0	0	0	0		0	505
% Cars, PU, Vans	100.0	98.8	0.0	0.0		98.8	0.0	99.5	100.0	0.0		99.6	85.7	0.0	100.0	0.0		95.7	0.0	0.0	0.0	0.0		0.0	99.0
Heavy Trucks	0	3	0	0		3	0	1	0	0		1	1	0	0	0		1	0	0	0	0		0	5
%Heavy Trucks	0.0	1.2	0.0	0.0		1.2	0.0	0.5	0.0	0.0		0.4	14.3	0.0	0.0	0.0		4.3	0.0	0.0	0.0	0.0		0.0	1.0

Project ID: 20-190017-002
Location: Cornerstone Dr & US Cellular Main Entrance Dwy
City: Knoxville

PEAK HOURS

Day: Thursday
Date: 11/05/2020

AM

	Cornerstone Dr Northbound					Cornerstone Dr Southbound					US Cellular Main Entrance Dwy Eastbound					US Cellular Main Entrance Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	0	5	0	0	5	0	25	1	0	26	0	0	1	0	1	0	0	0	0	0	32
7:45 AM	1	10	0	0	11	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	41
8:00 AM	1	2	0	0	3	0	18	0	0	18	1	0	0	0	1	0	0	0	0	0	22
8:15 AM	0	10	0	0	10	0	19	1	0	20	0	0	0	0	0	0	0	0	0	0	30
Total Volume	2	27	0	0	29	0	92	2	0	94	1	0	1	0	2	0	0	0	0	0	125
% App. Total	6.9	93.1	0.0	0.0	100	0.0	97.9	2.1	0.0	100	50.0	0.0	50.0	0.0	100	0.0	0.0	0.0	0.0	0	
PHF					0.659					0.783					0.500						0.762
Cars, PU, Vans	2	26	0	0	28	0	91	2	0	93	1	0	1	0	2	0	0	0	0	0	123
% Cars, PU, Vans	100.0	96.3	0.0	0.0	96.6	0.0	98.9	100.0	0.0	98.9	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	98.4
Heavy Trucks	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
%Heavy Trucks	0.0	3.7	0.0	0.0	3.4	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6

PM

	Cornerstone Dr Northbound					Cornerstone Dr Southbound					US Cellular Main Entrance Dwy Eastbound					US Cellular Main Entrance Dwy Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	0	23	0	0	23	0	9	1	0	10	2	0	1	0	3	0	0	0	0	0	36
4:45 PM	3	22	0	0	25	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	30
5:00 PM	2	38	0	0	40	0	14	0	0	14	0	0	5	0	5	0	0	0	0	0	59
5:15 PM	0	25	0	0	25	0	13	1	0	14	1	0	2	0	3	0	0	0	0	0	42
Total Volume	5	108	0	0	113	0	41	2	0	43	3	0	8	0	11	0	0	0	0	0	167
% App. Total	4.4	95.6	0.0	0.0	100	0.0	95.3	4.7	0.0	100	27.3	0.0	72.7	0.0	100	0.0	0.0	0.0	0.0	0	
PHF					0.706					0.768					0.550						0.708
Cars, PU, Vans	5	108	0	0	113	0	41	2	0	43	3	0	8	0	11	0	0	0	0	0	167
% Cars, PU, Vans	100.0	100.0	0.0	0.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

APPENDIX B – TRIP GENERATION INFORMATION

KNOX COUNTY
LOCAL APARTMENT TRIP GENERATION STUDY

PURPOSE

A Traffic Impact Study (TIS) is currently required in Knox County when a proposed development is projected to generate in excess of 750 trips per day. The determinations of when the threshold is met as well as all subsequent analyses in the TIS are performed using the rates and equations given in the Institute of Transportation Engineers (ITE) Trip Generation Manual. Local governmental agencies rely heavily on the accuracy of these trip generation rates in order to correctly predict the impacts of a proposed development on the transportation system. Therefore, in certain instances, it is logical to verify whether the "national" rates and equations given in the ITE Trip Generation Manual are appropriate for use in a specific local area or region.

The decision was made to study the local trip-making characteristics of apartments because of the discrepancy between the trip generation rates for apartments and single family residential land uses as given in the ITE Trip Generation Manual. While these two land uses are similar in nature, the Trip Generation Manual predicts about three less trips per dwelling unit generated by apartments for the average weekday. Additionally the Trip Generation Manual points out that due to the age of their database, which dates back to the 1960's, "the rates for apartments probably had changed over time". It is also assumed that some of the ITE data had come from larger metropolitan areas with denser development and greater transit use than Knox County, which would contribute to lower trip generation rates. Therefore, this study will be used to either verify the rates given in the Trip Generation Manual or generate new ones that can be applied to locally proposed apartment developments.

PROCEDURE

The procedures recommended by ITE in conducting local trip generation studies were generally followed for this study, along with some important assumptions that have made. ITE has published a proposed recommended practice entitled "Trip Generation Handbook" which specifically outlines procedures for conducting local trip generation studies and establishing new rates and equations.

The first step in the study was to define the number and location of the sites to be studied, as well as the counting methodology. Initially 14 sites were selected, although one apartment complex – the College Park Apartments – was later omitted due to uncharacteristically high traffic generation numbers. The number of sites used in this study far exceeds the recommended minimum amount suggested by ITE, which is five sites. Traffic counts were taken for week-long periods at 15-minute intervals between July 22, 1996 and August 9, 1996 at the access points to the apartment complexes. A Technical Appendix to this report contains the traffic count data collected at each apartment complex.

RESULTS

The traffic count data was analyzed using spreadsheets in order to determine the weighted average rates and regression equations. In order to be considered valid, the local rates and equations for each time period of analysis that were generated must meet certain statistical criteria. First, the standard deviation of the independent variable (dwelling units) should be no more than 110 percent of the weighted average rate; and secondly, the regression equations require a computed coefficient of determination (R^2) value of at least 0.75 before good data fit is indicated. This statistical criteria is met by the local data results, and in fact it often exceeds the level of data fit given by their counterparts in the ITE Trip Generation Manual. Finally, in order to simplify the use of the local data, plots were generated that appear identical to the actual ones in the ITE Trip Generation Manual.

The resulting rates and equations calculated from the local data indicate that the average weekday trip generation of apartments in this area is well above the national rates reported in the ITE manual. For example, the locally computed average rate for number of trips generated during a weekday is 35% higher than the rate given by ITE (increase from 6.63 trips per dwelling unit to 9.03 trips per dwelling unit). The trip generation rates do not increase as much for the AM and PM peak hours however. The local rate is roughly 8% higher for the AM peak, and 16% higher for the PM peak. The plots from the ITE Trip Generation Manual are included in the Technical Appendix for comparison purposes.

ASSUMPTIONS MADE

Some important assumptions have been made which may affect the results of the local data that was collected:

- It is important to note that the local trip generation rates were computed for the *total* number of dwelling units in the apartment complex, and not necessarily for the number of *occupied* dwelling units. There are several reasons why this was done, chiefly because of the need for comparability with the rates given in ITE Trip Generation Manual, as it does not specify whether the dwelling units are occupied. According to ITE procedures the selected sites must only be of "reasonably full occupancy (i.e. at least 85%)". The Apartment Association of Greater Knoxville (AAGK) publishes quarterly reports on occupancy levels of apartment complexes, and the report covering the period of the data collection was reviewed to determine occupancy levels. According to the AAGK report from July 1, 1996 – September 30, 1996 all of the apartment complexes surveyed in this study met the minimum 85% occupancy level, with an average occupancy rate for all sites studied of 94%.

- The count data that was collected at each apartment complex was used "raw" meaning that it was not factored for possible daily or seasonal variations. Once again, according to an ITE representative it is not known whether the data used in the Trip Generation Manual was factored or not, so therefore in order to be able to compare

local rates to those in the manual you must assume that count data should not be factored. Additionally, it was felt that apartment complexes would generally not be as susceptible to major seasonal fluctuations as other land uses might be. The local rates were also developed using count data that was collected and averaged over an entire week, which should limit some of the daily variations. Finally, reliable local daily and seasonal variation factors do not truly exist.

CONCLUSION

The local apartment study methodology and results were distributed for comment to a group of local transportation professionals who are directly responsible for either preparing or reviewing traffic impact studies. A meeting was held between this group on February 16, 2000 in order to gather comments and discuss the study in greater detail. The following conclusions are based on the discussion and consensus reached at this meeting:

1. The trip generation rates and equations meet statistical requirements and resulted from a study that followed accepted procedures; therefore they should be adopted for future use. Furthermore, the rates and equations are recommended for use in reviewing the traffic impact of any development termed as "multi-family", such as townhouse and condominium developments due to their similarity to apartment complexes.

2. The Traffic Access and Impact Study Guidelines and Procedures adopted by MPC should be amended with the language that local data should be used when available, which will allow the implementation of these new multi-family trip generation rates.

3. The following suggestions were made for future consideration:
   - This study should be updated with data collected from local townhouse and condominium developments in order to further justify the use of the new trip generation rates.
   - A statistical comparison should be made between any newly developed rates and the ITE single family trip generation rates to determine if there is a significant difference. If there is no difference then perhaps ITE single-family rates could be used for any residential development proposed in Knox County.

Local Apartment
Trip Generation Study

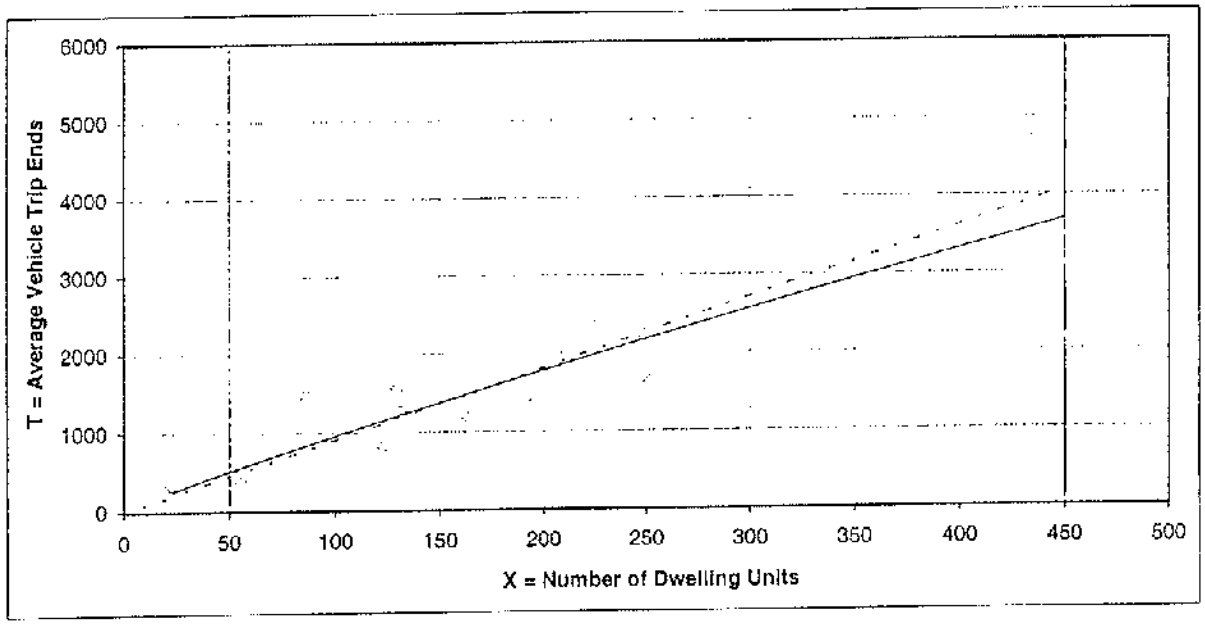
Average Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday**

Number of Studies:	13
Average Number of Dwelling Units:	193
Directional Distribution:	50% entering, 50% exiting

Trip Generation Per Dwelling Unit

Average Rate	Ranges of Rates	Standard Deviation
9.03	6.59 - 17.41	2.47

Data Plot and Equation



Fitted Curve Equation: $T = 15.193(X)^{0.899}$ $R^2 = 0.88$

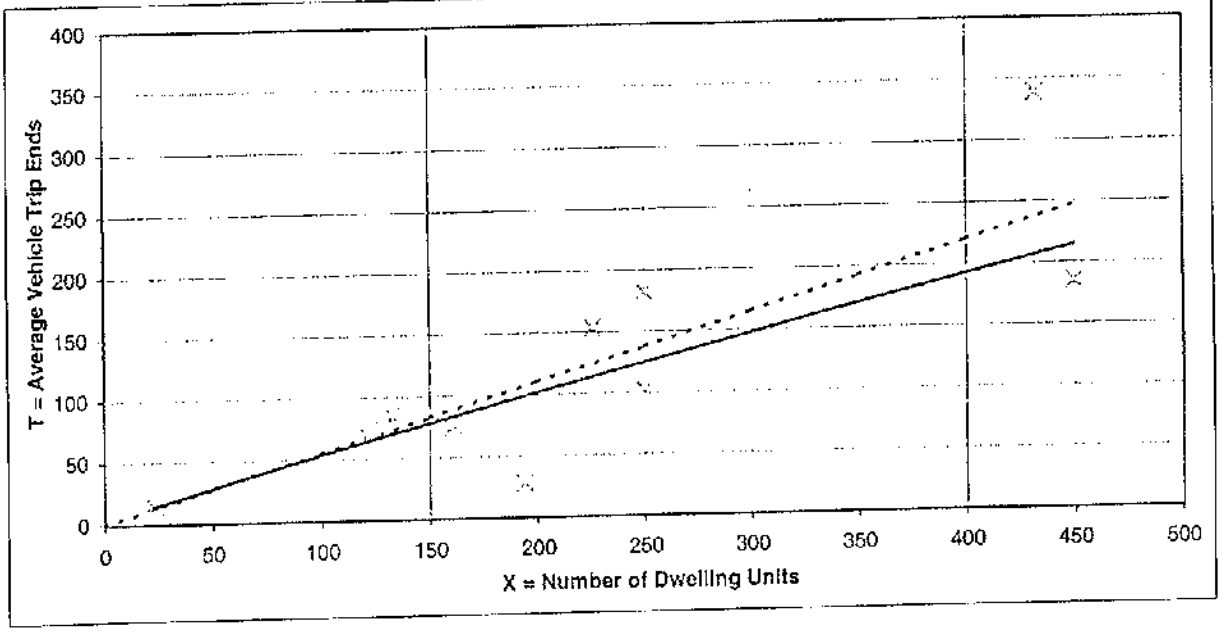
Local Apartment
Trip Generation Study

Average Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 7 and 9 a.m.**
Number of Studies:	13
Average Number of Dwelling Units:	193
Directional Distribution:	22% entering, 78% exiting

Trip Generation Per Dwelling Unit

Average Rate	Ranges of Rates	Standard Deviation
0.55	0.14 - 0.78	0.18

Data Plot and Equation



Fitted Curve Equation: $T = 0.758(X)^{0.924}$ $R^2 = 0.75$

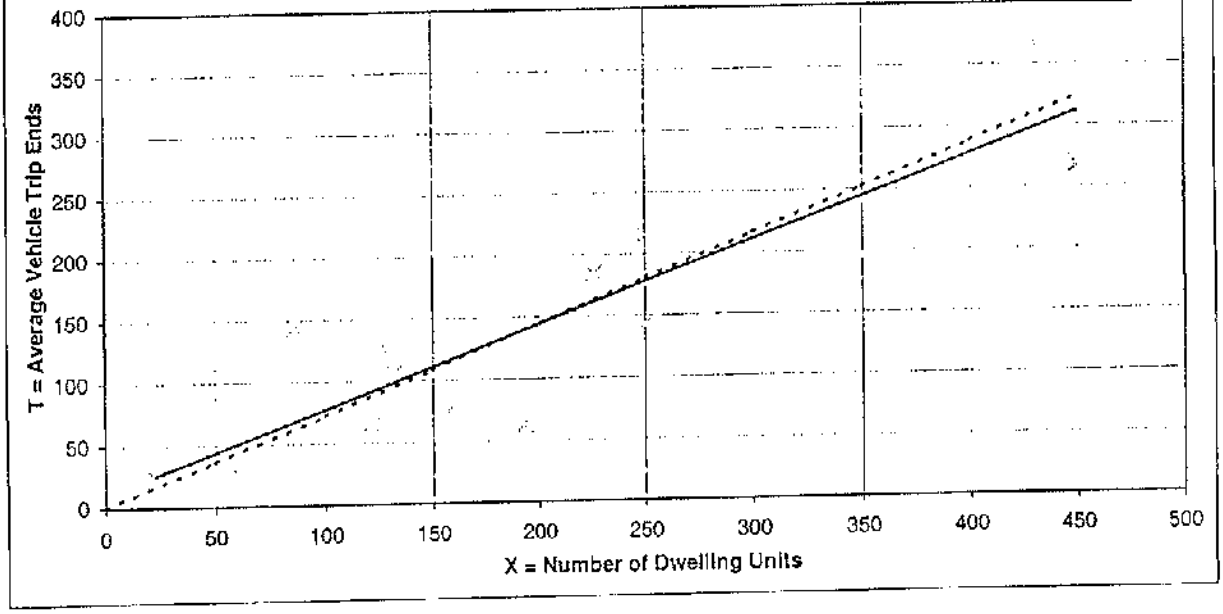
Local Apartment
Trip Generation Study

Average Vehicle Trip Ends vs:	Dwelling Units
On a:	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.
Number of Studies:	13
Average Number of Dwelling Units:	193
Directional Distribution:	55% entering, 45% exiting

Trip Generation Per Dwelling Unit

Average Rate	Ranges of Rates	Standard Deviation
0.72	0.32 - 1.66	0.25

Data Plot and Equation



X Actual Data Points ——— Fitted Curve ····· Average Rate

Fitted Curve Equation: $T = 0.669(X) + 10.069$ $R^2 = 0.79$

APPENDIX C – CAPACITY ANALYSES

CAPACITY AND LEVEL-OF-SERVICE CONCEPTS

In a general sense, a roadway is similar to a pipeline or other material carrying conduit in that it has a certain capacity for the amount of material (vehicles) that it can efficiently carry. As the number of vehicles in a given time period gradually increases, the quality of traffic flow gradually decreases. On roadway sections this results in increasing turbulence in the traffic stream, and at intersections it results in increasing stops and delay. As the volumes begin to approach the capacity of the facility, these problems rapidly magnify, with resulting serious levels of congestion, stops, delay, excess fuel consumption, pollutant emissions, etc.

The Transportation Research Board has published the Year 2010 Highway Capacity Manual (HCM2010), which establishes theoretical techniques to quantify the capacity conditions on all types of roadways, intersections, ramps, pedestrian facilities, etc. A basic concept that is applicable to most of these techniques is the idea of level of service (LOS). This concept establishes a rating system that quantifies the quality of traffic flow, as perceived by motorists and/or passengers. The general system is similar to a school grade scale, and is outlined as follows:

Level of Service (LOS)	General Quality of Traffic Flow	Description of Corresponding Conditions
A	Excellent	Roadways – Free flow, high maneuverability Intersections – Very few stops, very low delay
B	Very Good	Roadways – Free flow, slightly lower maneuverability Intersections – Minor stops, low delay
C	Good	Roadways – Stable flow, restricted maneuverability Intersections – Significant stops, significant delay
D	Fair	Roadways – Marginally stable flow, congestion seriously restricts maneuverability Intersections – High stops, long but tolerable delay
E	Poor	Roadways – Unstable flow*, lower operating speeds, congestion severely restricts maneuverability Intersections – All vehicles stop, very long queues and very long intolerable delay
F	Very Poor	Roadways – Forced flow, stoppages may be lengthy, congestion severely restricts maneuverability Intersections – All vehicles stop, extensive queues and extremely long intolerable delay

*Unstable flow is such that minor fluctuations or disruptions can result in rapid degradation to LOS F.

LOS CRITERIA: SIGNALIZED & UNSIGNALIZED INTERSECTIONS

LOS	CONTROL DELAY (S/VEH)		
	SIGNALIZED	UNSIGNALIZED	ROUNDABOUT
A	≤10	≤10	≤10
B	>10-20	>10-15	>10-15
C	>20-35	>15-25	>15-25
D	>35-55	>25-35	>25-35
E	>55-80	>35-50	>35-50
F	>80	>50	>50

Another measure of intersection capacity that is often used in the evaluation of intersection operations is the volume to capacity (V/C) ratio. This ratio is defined as "the ratio of flow rate to capacity", and is a good measure of how much of an intersection's available capacity has been used up by the analysis volumes. Conversely, it also provides an indication of the reserve capacity available for future growth in traffic volumes.

The Intersection Capacity Utilization (ICU) is another measure that expresses a value similar to the V/C ratio. Specifically, the ICU method "sums the amount of the time required to serve all movements at saturation for a given cycle length and divides by that reference cycle length." The ICU is considered a more accurate measure of volume to capacity conditions for a signalized intersection, primarily because it accounts for the effects of the signal timing on intersection capacity.

HCS7 Two-Way Stop-Control Report

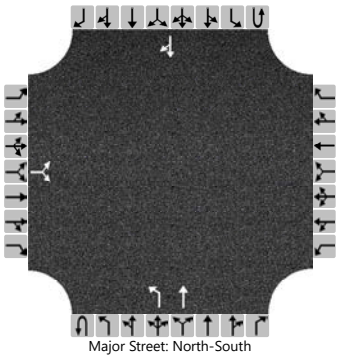
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2020
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	2020 Existing

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.76
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		1		1						2	34				110	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			3							3						
Capacity, c (veh/h)			832							1428						
v/c Ratio			0.00							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.3							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.3								0.4						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

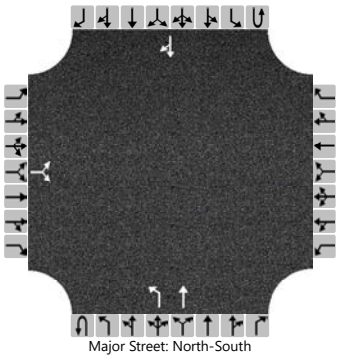
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2020
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	2020 Existing

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		4		10						6	128				49	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

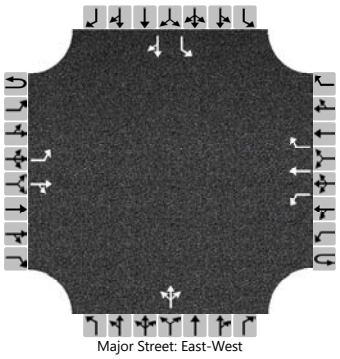
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							8						
Capacity, c (veh/h)			895							1522						
v/c Ratio			0.02							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			9.1							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.1								0.3							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	BJH	Intersection	Murdock at Cornerstone
Agency/Co.	Cannon & Cannon, Inc.	Jurisdiction	Knox County
Date Performed	11/24/2020	East/West Street	Murdock Drive
Analysis Year	2020	North/South Street	Cornerstone Drive
Time Analyzed	AM Peak	Peak Hour Factor	0.83
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	2020 Existing		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		10	518	4		4	251	26		0	0	1		80	2	29
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12				5					1			96		37
Capacity, c (veh/h)		1220				948					482			344		653
v/c Ratio		0.01				0.01					0.00			0.28		0.06
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0			1.1		0.2
Control Delay (s/veh)		8.0				8.8					12.5			19.5		10.8
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)		0.2				0.1				12.5				17.1		
Approach LOS										B				C		

HCS7 Two-Way Stop-Control Report

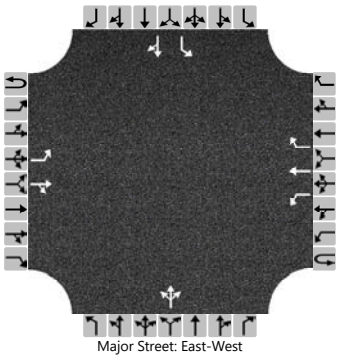
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2020
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	2020 Existing

Site Information

Intersection	Murdock at Cornerstone
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Cornerstone Drive
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		36	318	0		0	344	96		7	2	12		52	0	7
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		46				0					27			66		9
Capacity, c (veh/h)		1009				1151					428			353		619
v/c Ratio		0.05				0.00					0.06			0.19		0.01
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2			0.7		0.0
Control Delay (s/veh)		8.7				8.1					14.0			17.5		10.9
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)		0.9				0.0				14.0				16.7		
Approach LOS										B				C		

HCS7 Two-Way Stop-Control Report

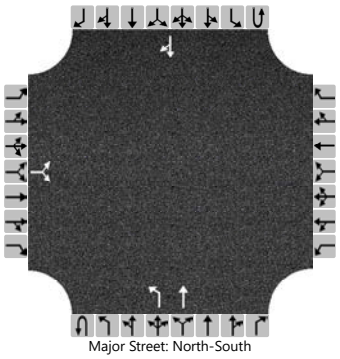
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	2022 Background

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.76
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		1		1						2	35				114	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			3							3						
Capacity, c (veh/h)			827							1422						
v/c Ratio			0.00							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.4							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.4								0.4						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

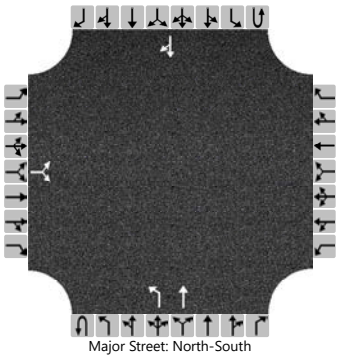
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	2022 Background

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
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	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume (veh/h)		4		10						6	133				51	2
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20							8						
Capacity, c (veh/h)			890							1518						
v/c Ratio			0.02							0.01						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			9.1							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.1								0.3						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

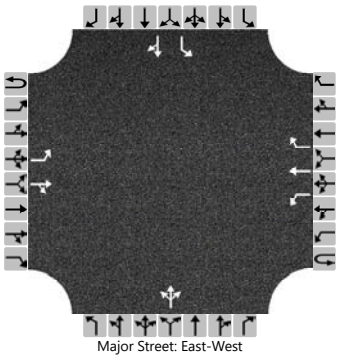
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	2022 Background

Site Information

Intersection	Murdock at Cornerstone
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Cornerstone Drive
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		10	539	4		4	261	27		0	0	1		83	2	30
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12				5					1			100		39
Capacity, c (veh/h)		1206				928					466			332		642
v/c Ratio		0.01				0.01					0.00			0.30		0.06
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0			1.2		0.2
Control Delay (s/veh)		8.0				8.9					12.7			20.4		11.0
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)		0.1				0.1				12.7				17.8		
Approach LOS										B				C		

HCS7 Two-Way Stop-Control Report

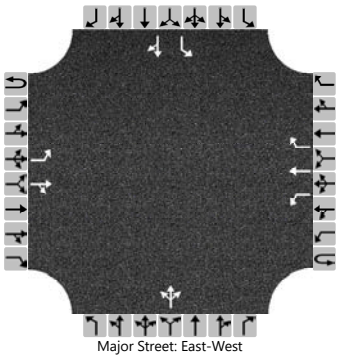
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	2022 Background

Site Information

Intersection	Murdock at Cornerstone
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Cornerstone Drive
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		37	331	0		0	358	100		7	2	12		54	0	7
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		47				0					27			68		9
Capacity, c (veh/h)		989				1135					413			341		605
v/c Ratio		0.05				0.00					0.06			0.20		0.01
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2			0.7		0.0
Control Delay (s/veh)		8.8				8.2					14.3			18.2		11.0
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)		0.9				0.0				14.3				17.4		
Approach LOS										B				C		

HCS7 Two-Way Stop-Control Report

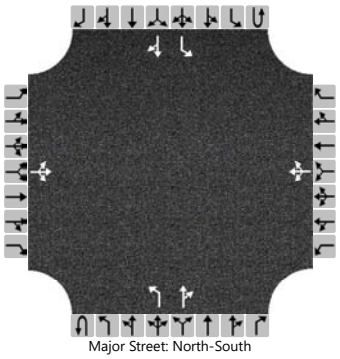
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	North-South
Project Description	2022 Combined

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.76
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		1	0	1		30	0	4		2	33	8		1	114	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			3				45			3				1		
Capacity, c (veh/h)			808				764			1422				1545		
v/c Ratio			0.00				0.06			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.0				0.2			0.0				0.0		
Control Delay (s/veh)			9.5				10.0			7.5				7.3		
Level of Service (LOS)			A				B			A				A		
Approach Delay (s/veh)	9.5				10.0				0.4				0.1			
Approach LOS	A				B											

HCS7 Two-Way Stop-Control Report

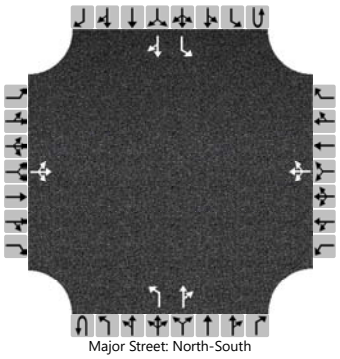
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	2022 Combined

Site Information

Intersection	Cornerstone at Access
Jurisdiction	Knox County
East/West Street	Site Access
North/South Street	Cornerstone Drive
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		4	0	10		25	0	4		6	135	30		4	51	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Left Only								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			20				41			8				6		
Capacity, c (veh/h)			860				671			1518				1329		
v/c Ratio			0.02				0.06			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.2			0.0				0.0		
Control Delay (s/veh)			9.3				10.7			7.4				7.7		
Level of Service (LOS)			A				B			A				A		
Approach Delay (s/veh)		9.3				10.7				0.3				0.5		
Approach LOS		A				B										

HCS7 Two-Way Stop-Control Report

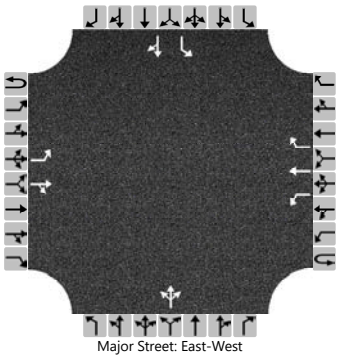
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	2022 Combined

Site Information

Intersection	Murdock at Cornerstone
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Cornerstone Drive
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		13	543	4		4	274	32		0	0	1		100	2	43
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

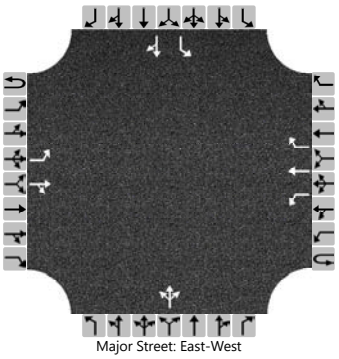
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				5					1			120		54
Capacity, c (veh/h)		1184				924					463			324		648
v/c Ratio		0.01				0.01					0.00			0.37		0.08
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0			1.7		0.3
Control Delay (s/veh)		8.1				8.9					12.8			22.6		11.1
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)	0.2				0.1				12.8				19.0			
Approach LOS									B				C			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	BJH	Intersection	Murdock at Cornerstone
Agency/Co.	Cannon & Cannon, Inc.	Jurisdiction	Knox County
Date Performed	11/24/2020	East/West Street	Murdock Drive
Analysis Year	2022	North/South Street	Cornerstone Drive
Time Analyzed	PM Peak	Peak Hour Factor	0.79
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	2022 Combined		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		50	344	0		0	369	117		7	2	12		68	0	18
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Left Only								1						

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)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
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)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		63				0					27			86		23
Capacity, c (veh/h)		960				1119					379			316		594
v/c Ratio		0.07				0.00					0.07			0.27		0.04
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			1.1		0.1
Control Delay (s/veh)		9.0				8.2					15.2			20.6		11.3
Level of Service (LOS)		A				A					C			C		B
Approach Delay (s/veh)		1.1				0.0				15.2				18.6		
Approach LOS										C				C		

HCS7 Two-Way Stop-Control Report

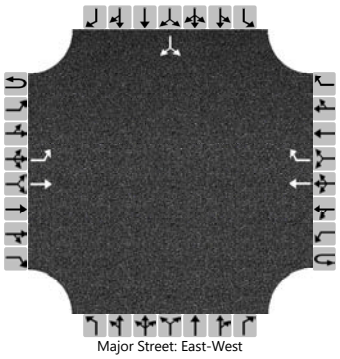
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	Combined 2022

Site Information

Intersection	Murdock at Site Access
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Site Access
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		4	640				294	11						38		13
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Left Only								1					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5													61	
Capacity, c (veh/h)		1186													394	
v/c Ratio		0.00													0.16	
95% Queue Length, Q_{95} (veh)		0.0													0.5	
Control Delay (s/veh)		8.0													15.8	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.0												15.8		
Approach LOS														C		

HCS7 Two-Way Stop-Control Report

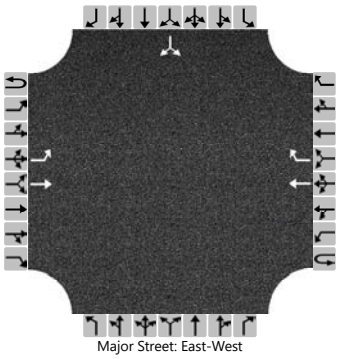
General Information

Analyst	BJH
Agency/Co.	Cannon & Cannon, Inc.
Date Performed	11/24/2020
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Combined 2022

Site Information

Intersection	Murdock at Site Access
Jurisdiction	Knox County
East/West Street	Murdock Drive
North/South Street	Site Access
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		13	411				475	38						30		11
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Left Only								1					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16													52	
Capacity, c (veh/h)		932													381	
v/c Ratio		0.02													0.14	
95% Queue Length, Q_{95} (veh)		0.1													0.5	
Control Delay (s/veh)		8.9													15.9	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		0.3												15.9		
Approach LOS														C		

APPENDIX D – SIGNAL WARRANT SPREADSHEETS

TRAFFIC SIGNAL WARRANT ANALYSIS - VOLUME WARRANTS

Intersection : Murdock Drive at Cornerstone Drive
City or County : Knox County Date of Count: 5-Nov-20
State : Tennessee Day of Week of Count: Thursday

Are warranting volumes to be adjusted for speeds or built up area? . . . . . No
Adjustment factor for day of week and month of year of count 1.00
Number of Lanes: Major Street . . 1 Minor Street . . . 1

Time	Major Street Actual Volume			Major Street Adjusted Total Volum,	Minor Street Actual Volume –	Minor Street Adjusted Total Volum,
Beginning	App #1	App #2	Total			
6:00 am	0	0	0	0	0	0
7:00	413	223	636	636	91	91
8:00	379	253	632	632	88	88
9:00 am	0	0	0	0	0	0
10:00	0	0	0	0	0	0
11:00	205	301	506	506	71	71
12:00 noon	256	290	546	546	78	78
1:00	0	0	0	0	0	0
2:00	240	288	528	528	58	58
3:00 pm	287	464	751	751	60	60
4:00	311	371	682	682	46	46
5:00	307	436	743	743	53	53
6:00 pm	0	0	0	0	0	0
7:00	0	0	0	0	0	0
8:00	0	0	0	0	0	0

Note: , No adjustment made
– Where more than one minor approach exists use the higher approach volume
. Number of hours shown is the minimum meeting the MUTCD requirements. Additional hours outside of the count period may meet the MUTCD specified volume levels.

Warrant #1A (8 Hr. - Min. Vol.) Percent of Warrant		Warrant #1B (8 Hr. - Interruption) Percent of Warrant		Combination (Warrants 1A & 1B) Percent of Warrant		Warrant #2 (Four Hour Vols.)		Warrant #3 (Peak Hour Vols.)	
Major	Minor	Major	Minor	Major	Minor	Warrant Volume	Percent of Warrant	Warrant Volume	Percent of Warrant
0	0	0	0	0	0	0	*****	0	*****
127	61	85	121	106	76	200	46	340	27
126	59	84	117	105	73	200	44	340	26
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
101	47	67	95	84	59	250	28	410	17
109	52	73	104	91	65	230	34	390	20
0	0	0	0	0	0	0	*****	0	*****
106	39	70	77	88	48	240	24	400	15
150	40	100	80	125	50	160	38	290	21
136	31	91	61	114	38	180	26	320	14
149	35	99	71	124	44	160	33	290	18
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
Warranting Volumes 500	150	Warranting Volumes 750	75	Warranting Volumes 600	120	Warranting Volumes From MUTCD Fig. 4-7		Warranting Volumes From MUTCD Fig. 4-5	
Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	0 .
Warrant Met	No	Warrant Met	No	Warrant Met	No	Warrant Met	No	Warrant Met	No

***** Major Street volume is so low that no Minor Street warrant exists

Comments: (include any information which may be useful to the reviewer)

Major Street = Murdock Drive
Minor Street = Cornerstone Drive
All volumes included.

All approaches considered single lane.
Raw traffic data factored by 1.2 to account for reductions due to Covid.

Analysis Prepared by: CANNON AND CANNON, INC.
Brian J. Haas. P.E., PTOE

Date: 12/09/20
Time: 13:41

Developed by: T. Darcy Sullivan, P.E. VC/R1
Distributed by: Tennessee Transportation Assistance Program (TTAP)

TRAFFIC SIGNAL WARRANT ANALYSIS - VOLUME WARRANTS

Intersection : Murdock Drive at Cornerstone Drive
City or County : Knox County Date of Count: 2022 Background
State : Tennessee Day of Week of Count: Thursday

Are warranting volumes to be adjusted for speeds or built up area? . . . . . No
Adjustment factor for day of week and month of year of count 1.00
Number of Lanes: Major Street . . 1 Minor Street . . . 1

Time Beginning	Major Street Actual Volume App #1	App #2	Total	Adjusted Total Volume,	Minor Street Actual Volume –	Adjusted Total Volume,
6:00 am	0	0	0	0	0	0
7:00	430	232	662	662	95	95
8:00	394	263	657	657	92	92
9:00 am	0	0	0	0	0	0
10:00	0	0	0	0	0	0
11:00	213	313	526	526	74	74
12:00 noon	266	302	568	568	81	81
1:00	0	0	0	0	0	0
2:00	250	300	550	550	60	60
3:00 pm	298	483	781	781	62	62
4:00	323	386	709	709	48	48
5:00	319	453	772	772	55	55
6:00 pm	0	0	0	0	0	0
7:00	0	0	0	0	0	0
8:00	0	0	0	0	0	0

Note: , No adjusment made
– Where more than one minor approach exists use the higher approach volume
. Number of hours shown is the minimum meeting the MUTCD requirements. Additional hours outside of the count period may meet the MUTCD specified volume levels.

Warrant #1A (8 Hr. - Min. Vol.) Percent of Warrant Major	Minor
0	0
132	63
131	61
0	0
0	0
105	49
114	54
0	0
110	40
156	41
142	32
154	37
0	0
0	0
0	0
Warranting Volumes 500	150
Total Hours Meeting Warrant = 0 . Warrant Met No	

Warrant #1B (8 Hr. - Interruption) Percent of Warrant Major	Minor
0	0
88	127
88	123
0	0
0	0
70	99
76	108
0	0
73	80
104	83
95	64
103	73
0	0
0	0
0	0
Warranting Volumes 750	75
Total Hours Meeting Warrant = 0 . Warrant Met No	

Combination (Warrants 1A & 1B) Percent of Warrant Major	Minor
0	0
110	79
110	77
0	0
0	0
88	62
95	68
0	0
92	50
130	52
118	40
129	46
0	0
0	0
0	0
Warranting Volumes 600	120
Total Hours Meeting Warrant = 0 . Warrant Met No	

Warrant #2 (Four Hour Vols.) Warrant Volume	Percent of Warrant
0	*****
190	50
190	48
0	*****
0	*****
240	31
220	37
0	*****
230	26
150	41
170	28
150	37
0	*****
0	*****
0	*****
Warranting Volumes From MUTCD Fig. 4-7	
Total Hours Meeting Warrant = 0 . Warrant Met No	

Warrant #3 (Peak Hour Vols.) Warrant Volume	Percent of Warrant
0	*****
330	29
330	28
0	*****
0	*****
400	19
380	21
0	*****
390	15
280	22
310	15
280	20
0	*****
0	*****
0	*****
Warranting Volumes From MUTCD Fig. 4-5	
Total Hours Meeting Warrant = 0 . Warrant Met No	

***** Major Street volume is so low that no Minor Street warrant exists

Comments: (include any information which may be useful to the reviewer)

Major Street = Murdock Drive
Minor Street = Cornerstone Drive
All volumes included.

All approaches considered single lane.
Volumes shown are existing with 2.0% annual growth from Year 2020 to Year 2022.

Analysis Prepared by: CANNON AND CANNON, INC.
Brian J. Haas. P.E., PTOE
Date: 12/09/20
Time: 13:42

Developed by: T. Darcy Sullivan, P.E. VC/R1
Distributed by: Tennessee Transportation Assistance Program (TTAP)

TRAFFIC SIGNAL WARRANT ANALYSIS - VOLUME WARRANTS

Intersection : Murdock Drive at Cornerstone Drive
City or County : Knox County Date of Count: 2022 Combined
State : Tennessee Day of Week of Count: Thursday

Are warranting volumes to be adjusted for speeds or built up area? . . . . . No
Adjustment factor for day of week and month of year of count 1.00
Number of Lanes: Major Street . . 1 Minor Street . . . 1

Time	Major Street Actual Volume			Major Street Adjusted Total Volum ,	Minor Street Actual Volume –	Minor Street Adjusted Total Volum ,
Beginning	App #1	App #2	Total			
6:00 am	0	0	0	0	0	0
7:00	437	250	687	687	125	125
8:00	401	281	682	682	122	122
9:00 am	0	0	0	0	0	0
10:00	0	0	0	0	0	0
11:00	220	331	551	551	104	104
12:00 noon	273	320	593	593	111	111
1:00	0	0	0	0	0	0
2:00	276	328	604	604	85	85
3:00 pm	324	511	835	835	87	87
4:00	349	414	763	763	73	73
5:00	345	481	826	826	80	80
6:00 pm	0	0	0	0	0	0
7:00	0	0	0	0	0	0
8:00	0	0	0	0	0	0

Note: , No adjusment made
– Where more than one minor approach exists use the higher approach volume
. Number of hours shown is the minimum meeting the MUTCD requirements. Additional hours outside of the count period may meet the MUTCD specified volume levels.

Warrant #1A (8 Hr. - Min. Vol.) Percent of Warrant		Warrant #1B (8 Hr. - Interruption) Percent of Warrant		Combination (Warrants 1A & 1B) Percent of Warrant		Warrant #2 (Four Hour Vols.)		Warrant #3 (Peak Hour Vols.)	
Major	Minor	Major	Minor	Major	Minor	Warrant Volume	Percent of Warrant	Warrant Volume	Percent of Warrant
0	0	0	0	0	0	0	*****	0	*****
137	83	92	167	115	104	180	69	320	39
136	81	91	163	114	102	180	68	320	38
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
110	69	73	139	92	87	230	45	390	27
119	74	79	148	99	93	210	53	360	31
0	0	0	0	0	0	0	*****	0	*****
121	57	81	113	101	71	210	40	360	24
167	58	111	116	139	73	140	62	260	33
153	49	102	97	127	61	160	46	290	25
165	53	110	107	138	67	140	57	260	31
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
0	0	0	0	0	0	0	*****	0	*****
Warranting Volumes 500	150	Warranting Volumes 750	75	Warranting Volumes 600	120	Warranting Volumes From MUTCD Fig. 4-7		Warranting Volumes From MUTCD Fig. 4-5	
Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	2 .	Total Hours Meeting Warrant =	2 .	Total Hours Meeting Warrant =	0 .	Total Hours Meeting Warrant =	0 .
Warrant Met	No	Warrant Met	No	Warrant Met	No	Warrant Me	No	Warrant Me	No

***** Major Street volume is so low that no Minor Street warrant exists

Comments: (include any information which may be useful to the reviewer)

Major Street = Murdock Drive
Minor Street = Cornerstone Drive
All volumes included.

All approaches considered single lane.
Volumes shown are 2022 combined with site traffic.
AM Peak hour generated trips were added to volumes beginning at hours 7am, 8am, 11am, and 12pm.
PM Peak hour generated trips were added to volumes beginning at hours 2pm, 3pm, 4pm, and 5pm.

Analysis Prepared by: CANNON AND CANNON, INC.
Brian J. Haas. P.E., PTOE
Date: 12/09/20
Time: 13:42

Developed by: T. Darcy Sullivan, P.E. VC/R1
Distributed by: Tennessee Transportation Assistance Program (TTAP)

APPENDIX E – TURN LANE WARRANT SHEETS

TABLE 4B
RIGHT-TURN LANE VOLUME THRESHOLDS
FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 35 MPH OR LESS

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	< 100	100 - 199	200 - 249	250 - 299	300 - 349	350 - 399
Fewer Than 25 25 - 49 50 - 99						
100 - 149 150 - 199						
200 - 249 250 - 299						Yes
300 - 349 350 - 399				Yes	Yes Yes	Yes Yes
400 - 449 450 - 499			Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599		Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

AM Peak

PM Peak

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 600	+ / > 600
Fewer Than 25 25 - 49 50 - 99					Yes	Yes Yes
100 - 149 150 - 199			Yes	Yes Yes	Yes Yes	Yes Yes
200 - 249 250 - 299	Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
300 - 349 350 - 399	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

* Or through volume only if a left-turn lane exists.

AM Peak:
- Right Turn Volume = 8
- Through Volume = 33

Right turn lane IS NOT warranted.

PM Peak:
- Right Turn Volume = 30
- Through Volume = 135

TABLE 5B

RIGHT-TURN LANE VOLUME THRESHOLDS
FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 36 TO 45 MPH

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	<100	100 - 199	200 - 249	250 - 299	300 - 349	350 - 399
Fewer Than 25 25 - 49 50 - 99		AM Peak				
100 - 149 150 - 199						
200 - 249 250 - 299					Yes	Yes Yes
300 - 349 350 - 399			Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499		Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 600	+ / > 600
Fewer Than 25 25 - 49 50 - 99		PM Peak		Yes	Yes Yes	Yes Yes
100 - 149 150 - 199		Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
200 - 249 250 - 299	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
300 - 349 350 - 399	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

* Or through volume only if a left-turn lane exists.

AM Peak:
- Right Turn Volume = 11
- Through Volume = 294

Right turn lane IS NOT warranted.

PM Peak:
- Right Turn Volume = 38
- Through Volume = 475

APPENDIX F – MPC COMMENTS

CANNON & CANNON INC
CONSULTING ENGINEERS · FIELD SURVEYORS

Date: February 23, 2021

Project Name: 875 Cornerstone Drive Apartments

To: Knoxville-Knox County Planning

Subject: TIS Comment Response Document for 875 Cornerstone Drive Apartments
Review Comments Dated: February 18, 2021 (Knoxville-Knox County Planning)

Dear Knoxville-Knox County Planning staff,

The following comment response document is submitted to address comments dated February 18, 2021:

Knoxville-Knox County Planning (February 18, 2021)

1. **Reviewer Comment: On page 4, please correct the discussion of Murdock Drive to "it is classified as a Minor Arterial per Knoxville-Knox County Planning Major Road Plan."**

   Response: Requested correction made and reflected on page 4 of the Revised TIS.

2. **Reviewer Comment: On page 5, please correct "Knoxville-Knox County Metropolitan Planning Commission" to "Knoxville-Knox County Planning".**

   Response: Requested correction made and reflected on page 5 of the Revised TIS.

3. **Reviewer Comment: On page 6, with both traffic counts being completed at the same time, there is some discrepancy with the volumes balancing. The volumes between the two count locations are for the same peak hours and they do not have any other intersections between them. Therefore, for example, we would expect the northbound movement from Murdock Drive at Cornerstone Drive to be the same in the AM and PM as the northbound movement at the project driveway on Cornerstone Drive (i.e. the volume coming out of one intersection equals the volume coming into another intersection). This is true for the AM peak, northbound PM peak, and southbound PM peak volumes. The traffic heading north on Cornerstone Drive from Murdock Drive is 312 vehicles, but only 113 northbound vehicles arrive at the US Cellular driveway. Please revise or explain why the difference since there is no place for traffic to go.**

   Response: This discrepancy is due to a typo for the westbound right turn volume at the intersection of Murdock Drive at Cornerstone Drive when transposing the data collected and shown in Appendix A to FIGURE 4. The westbound right turn volume was depicted as 280 vehicles for the PM peak hour and should have been depicted as 80 vehicles. The peak hour volumes between the intersections of Murdock Drive at Cornerstone Drive and US Cellular Office Access at Cornerstone Drive now balance as expected. Revised FIGURE 4 can be found on page 6.

   This discrepancy in the reported westbound right turn volume resulted in a "domino effect" of revising the subsequent analyzed scenarios depicted in FIGURE 5, FIGURE 6, and FIGURE 9. Most notably, the corrected volumes resulted in the originally proposed westbound right turn lane into

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KNOXVILLE 8550 Kingston Pike
Knoxville, TN 37919
MEMPHIS
BOWLING GREEN FAX 865.670.8866

the site access along Murdock Drive no longer being warranted / recommended based on the revised volumes. The revised turn lane warrant spreadsheet has been provided in Appendix E-3.

4. Reviewer Comment: **On page 17, please reset the numbering of the recommended improvements to begin at 1 instead of 5.**

   Response: Requested correction made and reflected on page 17 of the Revised TIS.

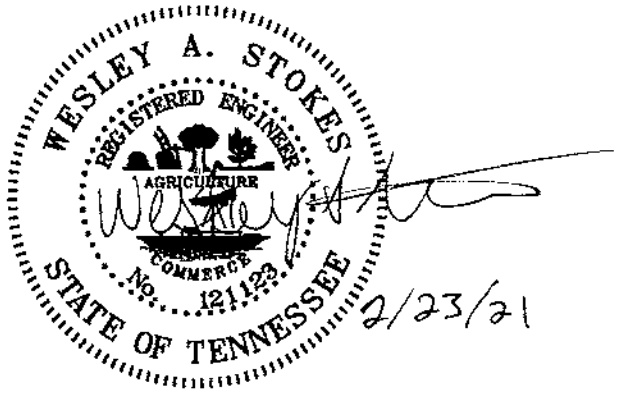
   a. **The right-turn lane taper and storage lengths of the proposed access off Murdock Drive need to be increased. Per TDOT Design Guidelines, the taper length should be WS/3 where W is the lateral offset in feet and S is the speed in MPH. In this case, the recommended taper length is 12 X 40/3 = 160 feet. The guidelines go on to say that the total length of taper plus storage should provide adequate deceleration length for a complete stop. At 40 MPH, that length is 275 feet. We would propose that the right-turn lane at the new driveway be extended, perhaps to 150 feet each for storage and taper lengths, to provide the 275 feet of deceleration length.**

      Response: Right-turn lane no longer warranted / recommended as discussed in previous Comment 3 response.

5. Reviewer Comment: **This current site of the proposed apartment complex has a heavily used greenway on the parcel. Please mention what mitigation will be done to complete the connection to other portions of the greenway. Please add a section discussing Pedestrian connections, which is a requirement for the study per the Transportation Impact Analysis Guidelines.**

   Response: Comment address in revised TIS in new *PEDESTRIAN CONNECTION ASSESSMENT* section on page 16.

Sincerely,



Wesley Stokes, P.E.

Planning
KNOXVILLE | KNOX COUNTY

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

875 Cornerstone Multifamily Develeopment
Applicant Name | Affiliation

01/22/2021
Date Filed

03/11/2021
Meeting Date (if applicable)

File Number(s): 3-C-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

Alan Grissom
Name

Cannon & Cannon, Inc.
Company

8550 Kingston Pike
Address

Knoxville
City

TN
State

37919
ZIP

865-670-8555
Phone

agrissom@cannon-cannon.com
Email

CURRENT PROPERTY INFO

USCC Real Estate Corp.
Owner Name (if different)

P.O. 31369 Chicago, IL 60631
Owner Address

Owner Phone

875 Cornerstone Drive Knoxville, TN 37932
Property Address

131 069
Parcel ID

FUD
Sewer Provider

FUD
Water Provider

N
Septic (Y/N)

STAFF USE ONLY

E/S Cornerstone Dr., N/S Murdock Dr., SE/S Lovell Rd.
General Location

23.30 acres
Tract Size

☐ City ☒ County

6th
District

OB/TO
Zoning District

PP
Existing Land Use

Northwest County
Planning Sector

O
Sector Plan Land Use Classification

Planned Growth
Growth Policy Plan Designation

DEVELOPMENT REQUEST

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

☒ Residential ☐ Non-Residential

Home Occupation (specify) _____

Other (specify) Apartment Complex

Related City Permit Number(s)

SUBDIVISION REQUEST

Proposed Subdivision Name

Unit / Phase Number ☐ Combine Parcels ☐ Divide Parcel Total Number of Lots Created

Related Rezoning File Number

☐ Other (specify) _____

☐ Attachments / Additional Requirements

ZONING REQUEST

☐ Zoning Change _____ Proposed Zoning

☐ Plan Amendment Change _____ Proposed Plan Designation(s)

Proposed Density (units/acre) Previous Rezoning Requests

☐ Other (specify) _____

Pending Plat File Number

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		Total
0401	$1,500	
Fee 2		
Fee 3		$1,500

AUTHORIZATION

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

Applicant Signature — Alan Grissom (Please Print) — 01/22/2021 (Date)

865-670-8555 (Phone Number) — agrissom@cannon-cannon.com (Email)

Staff Signature — Sherry Michienzi (Please Print) — 01/22/2021 (Date)