



**AGENDA
CITY OF HARRISONVILLE
PLANNING & ZONING COMMISSION
REGULAR MEETING
CITY HALL
JULY 20, 2023
6:00 PM**

- 1. Call to Order**
 - A. Roll Call**
- 2. Approval of Minutes**
 - A. Planning & Zoning Commission - Regular Meeting - Jun 15, 2023 6:00 PM**
- 3. Agenda Items**
 - A. Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living Facility - Public Hearing**
 - B. Appl. #PREDEV-23-001- Prelim. Devel. Plan for Multi-Family and a Senior Living Facility - Consideration**
- 4. Discussion Items**
- 5. Adjourn**

Posted on City Hall Bulletin Board this 13th day of July, 2023.

Daniel Barnett, City Clerk



THE CITY OF HARRISONVILLE

WHERE TRADITION MEETS INNOVATION

DRAFT
MINUTES
CITY OF HARRISONVILLE
PLANNING & ZONING COMMISSION
REGULAR MEETING
CITY HALL
JUNE 15, 2023
6:00 PM

1. Call to Order

The meeting was called to order at 6:00 PM by Chair Kevin Wood

Attendee Name	Organization	Title	Status	Arrived
Kevin Wood	Harrisonville	Chair	Present	
Chris Chiodini	Harrisonville	Vice-Chair	Present	
Scott Milner	Harrisonville		Present	
Cheryl Bush	Harrisonville		Absent	
Wilbert Crawford	Harrisonville		Present	
Mike Zaring	Harrisonville	Mayor	Present	
Brian Pulliam	Harrisonville		Present	
Paul Mensching	Harrisonville		Present	
Milton Siegenthaler	Harrisonville		Present	

Also in attendance were Virginia Ford, Applicant; Dave Doerhoff, Alderman Liaison; Christina Stanton, Community Development Director; and Jamie Martin, Recording Secretary.

2. Approval of Minutes

A. Planning & Zoning Commission - Regular Meeting - Apr 20, 2023 6:00 PM

With no additions or corrections, Paul Mensching made a motion to approve the minutes from the April 20, 2023, meeting. Chris Chiodini seconded the motion. The motion passed unanimously.

RESULT:	ACCEPTED [UNANIMOUS]
MOVER:	Paul Mensching
SECONDER:	Chris Chiodini, Vice-Chair
AYES:	Wood, Chiodini, Milner, Crawford, Zaring, Pulliam, Mensching, Siegenthaler
ABSENT:	Cheryl Bush

3. Agenda Items

A. Public Hearing: Appl. #RZ-23-002 - REZONING from EP District to R-1 District at 2701 E. Elm St.

Director Stanton presented the Staff Report. She said that Ms. Ford is seeking approval of a requested Rezoning from Estate Planned District to Single-Family Residential District, with the intent to split into two lots. The property must be rezoned in order for the property to be further divided. The proposed rezoning is supported by the 2040 Comprehensive Plan. The existing sanitary sewer that serves 2701 E. Elm is a 4-inch lateral line. The newly created lot will have to have a second lateral line constructed for service on the Lot 2 property. The line will need to connect to the existing sanitary sewer located between Lots 40 and 41 in East Elm Estates. The proposed new lots meet or exceed zoning district lot size, lot width, and impervious coverage. She stated that while the lots meet the lot requirements, there are currently legally existing a house and three detached accessory structures. These structures meet or exceed all setback requirements, however, the R-1 District only allows for two detached accessory structures. Recommendation from Staff and Legal were to either recommend approval with the condition that one of the detached structures be removed, or recommend approval with the condition the applicant obtain a variance. Director Stanton said that the approval of the requested rezoning without either of the recommendations would be creating a legal non-conforming situation with the number of detached accessory structures.

The Public Hearing was closed at 6:06 PM.

B. Consideration: Appl. #RZ-23-002 - REZONING from EP District to R-1 District at 2701 E. Elm St.

Chris Chiodini made a motion to recommend the approval of the rezoning application to the Board of Alderman with the conditions that Lot 2 installs a sewer lateral, and that Ms. Ford applies for a variance for the accessory structures on Lot 1.

Brian Pulliam seconded the motion.

A roll call vote was taken and the motion passed unanimously.

RESULT:	RECOMMENDED FOR BOARD APPROVAL [UNANIMOUS]
MOVER:	Chris Chiodini, Vice-Chair
SECONDER:	Brian Pulliam
AYES:	Wood, Chiodini, Milner, Crawford, Zaring, Pulliam, Mensching, Siegenthaler
ABSENT:	Cheryl Bush

C. Public Hearing: Code Creation: Section 405.574 Maximum Allowable Affordable Housing Units

Director Stanton presented the Staff Report for the Code Creation of Section 405.574 Maximum Allowable Affordable Housing Units. She stated that on July 8, 2022, the Board of Aldermen Established a one-year moratorium on applications to establish subsidized housing in Harrisonville, with direction for City staff to complete a full evaluation of the need, or lack thereof, for subsidized housing in the Harrisonville community. Staff commissioned an update of the City's Housing Study from 2008. At the May 15th work session, Staff presented the recently completed housing study. Then the Board asked staff to bring back additional statistics and data points to help determine the appropriate percentage to utilize as a cap for subsidized rentals. It was determined that delinquent utility accounts could not be utilized as it reverts to the landlord under current policies, and that Free and Reduced Lunches are open to a fairly wide group and was not a good data point either. Director Stanton said that at the June 5th, Board of Aldermen work session, staff continued discussions regarding imposing a limitation on the percentage of subsidized housing units to be allowed in all future new multi-family developments. She said much of the discussion was on the changes in the poverty rate and how, in a

normalized population, the poverty rate tends to be between 12 and 14 percent. Staff recommended approval of the proposed ordinance creating Section 405.574 Maximum Allowable Affordable Housing Units.

Kevin Wood asked Director Stanton if the cap for was for family housing or senior housing. Director Stanton said that it would be for all new multi-family housing. Mr. Wood said that he agrees that there should be a cap, but the senior community or disabled should not be included.

Chris Chiodini said that 55+ housing, affordable, workforce, and low income housing are all different. He suggested that staff look into all of the different types of housing. After much discussion about affordable senior housing, the Public Hearing was closed at 6:40 PM.

D. Consideration: Code Creation: Section 405.574 Maximum Allowable Affordable Housing Units

Wilbert Crawford mad a motion to send the Code Creation back to the Board of Aldermen to further investigate senior and disable housing. Chris Chiodini seconded the motion.

A roll call vote was taken and the motion passed unanimously.

RESULT:	TABLED [UNANIMOUS]
MOVER:	Wilbert Crawford
SECONDER:	Chris Chiodini, Vice-Chair
AYES:	Wood, Chiodini, Milner, Crawford, Zaring, Pulliam, Mensching, Siegenthaler
ABSENT:	Cheryl Bush

E. Planning Commissioner Training Discussion

Director Stanton gave the Commissioners "Planning & Zoning Procedures for Missouri Municipalities". She then spoke to the Commission about some of the items that come before them including: Major Plats, Rezoning, Preliminary Development Plans, Special Use Permits, Amendments to the zoning or subdivision codes, and the City's Comprehensive Plan.

4. Discussion Items

Director Stanton told Chairman Wood that the City is vacating the City ROW at the City owned rail spur located east of Precision Road and west of Brookhart Drive.

This vacation of the ROW is so a parcel can be created.

5. Adjourn

With nothing further to come before the Commission, Chris Chiodini made a motion to adjourn. Wilbert Crawford seconded. The meeting was adjourned at 6:59 PM.

Respectfully submitted,

Jamie Martin, Recording Secretary

Minutes Acceptance: Minutes of Jun 15, 2023 6:00 PM (Approval of Minutes)

STAFF REPORT

TO: Planning & Zoning Commission
FROM: Christina Stanton,
DATE: July 13, 2023
SUBJECT: Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living Facility

Type of Item: *Public Hearing*

A. Action Item (ID # 4579)

Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living Facility

Attachments:

1800 E Mechanic St PDP 7-20-23PZ Packet (PDF)



To: Planning and Zoning Commission

From: Christina Stanton, AICP, Community Development Director

Date: July 20, 2023

Re: Appl. #PREDEV-23-001 – PRELIM. DEVEL. PLAN for Multi-Family and a Senior Living Facility on property located at 1800 E. Mechanic Street

GENERAL INFORMATION

Applicant: R.L. Buford

Requested Actions: Approval of Requested Preliminary Development Plan for Apartments and a Senior Living Facility

Date of Application: May 11, 2023

PROPOSAL

R.L. Buford is seeking approval of a preliminary development plan for apartments and an eighty (80) unit senior living facility on property located at 1800 E. Mechanic Street. The proposed preliminary development plan consists of eight (8) 3-story apartment buildings with a total of 288 units (96 units 2-3 bedrooms, 96 units 1 bedroom, 96 units studio—Lots 1 and 2) and a 40,000 sqft. eighty (80) unit senior living facility (Lot 3). The apartment complex includes the following amenities: clubhouse, pool, two pickleball courts, beach volleyball, playground, and dog park.

Please see the attached zoning and aerial maps.

The surrounding properties are currently zoned as follows:

North (across Elm St.): G (Government), R-1 (Single-Family Residential) District, and C-O (Non-Retail Business) District—High School, single-family residential, and offices

East: C-1 (Local Business) District—Offices

South (across MO-7/Mechanic Street): C-2 (Service Business) District—Dollar General, gas station, Southland Shopping Center

West: R-1 (Single-Family Residential) and R-2 (Two-Family Residential) Districts—Single-Family Residential

PREVIOUS ACTIONS

- September 22, 2014—The Board of Aldermen approved an Ordinance (#3283) to allow for a Special Use Permit for the establishment of a nursing home and assisted living establishment located at 1800 E. Mechanic Street. This was for the project known as the Harrisonville Senior Living Village, which never came to fruition.
- September 22, 2014—The Board of Aldermen approved an Ordinance (#3282-14) to rezone the property located north of the intersection of Oriole and Mechanic Streets from Single-Family Residential (R-1) District to Planned Apartment (then R-4P, now RP-4) District. This was for the

project known as the Harrisonville Senior Living Village, which never came to fruition however the zoning remains as established.

- May 13, 1991—The Board of Aldermen approved an Ordinance (#1825) which established new zoning districts and associated regulations. The subject property's zoning was changed from Low Density Single-Family Residential (R-1A) District (which no longer exists) to Single-Family Residential (R-1) District.
- August 16, 1978—The Board of Aldermen approved an Ordinance (#1194) which established new zoning districts and associated regulations. The subject property's zoning was changed from the previously established Residential District No. 2 to Low Density Single-Family Residential (R-1A) District.
- June 21, 1965—The Final Plat of *Johnson Estates, Lots 1-18* was recorded with the Cass County Recorder of Deed's Office.
- March 10, 1965—The Board of Aldermen approved an Ordinance (#646) determining the zoning classification of all properties annexed into the City since April 7, 1959. The subject property was established as Residential District No. 2.

KEY ISSUES

- This property is currently zoned Planned Medium Density Apartment (RP-4) District.
- The applicant is proposing an apartment development consisting of eight (8) 3-story apartment buildings with a total of 288 units (96 units 2-3 bedrooms, 96 units 1 bedroom, 96 units studio—Lots 1 and 2) and a 40,000 sqft. eighty (80) unit senior living facility (Lot 3).
- The City's 2040 Comprehensive Plan shows the property and surrounding area as Community Mixed Use, which allows for a broad range of retail, service, office, and residential with an emphasis on town center design to promote pedestrian safety, walkability, and quality design.
- The applicant is planning to divide the property into three lots and provide an extension of the public street, Oriole Street, as shown on the Exhibits.

ANALYSIS

Zoning. The property is currently zoned Planned Medium Density Apartment (RP-4) District. The proposed use of an apartment complex and a senior living facility are appropriate uses for this District. However, since the applicants are seeking to demolish the existing structure and redevelop the property with a different use a preliminary development plan is required.

Additionally, it should be noted that while planned districts are to “provide for and encourage latitude and flexibility in the location of buildings, structures, roads, drives, variations in yards and open spaces” (Section 405.065) there are a number of development standards that are required to be the same as the equivalent zoning district, in this case that district would be R-4.

- Section 405.075.B states: “The intensity of land use, the floor area and bulk of buildings, the concentration of population, the percentage of lot coverage, the amount of open space, light and air shall be generally equal to that required in the equivalent zoning district.”
- Section 405.075.C states: “The density of residential dwelling units, the parking requirements and the performance standards shall be the same as in the equivalent district.” (Emphasis added)

Lot	Lot Area (in sqft.)	Bldg. Footprint Area (in sqft.)	Parking Lot Area (in sqft.)	% Bldg. Coverage	Maximum Allowed Bldg. Coverage	% Lot Coverage	% Open Space
1	351,057	82,006	86,154	23.36	35%	47.90	52.10
2	53,131	11,258	17,702	21.19	35%	54.51	45.49
3	126,331	40,000	47,087	31.66	35%	68.94	31.06

Parking. Section 405.210 of the City's Municipal Code requires two (2) off—street parking spaces for each two (2) or more bedroom dwelling unit and one (1) space for each unit having one (1) bedroom. The

Preliminary Development Plan acknowledges this requirement but is fifty-one (51) spaces short (forty-five (45) acknowledged and six (6) short on the plan's count) for the multi-family portion. However, the development plan indicates that forty-five (45) spaces of the one-hundred-thirty (130) contained in Lot 3 are planned to be shared parking to meet the acknowledged parking deficit.

The Traffic Impact Analysis reports that there are 80 units of senior living planned in the 40,000 sqft. building on Lot 3, while the Preliminary Development Plan states that there are 78 units planned. The excess parking available to be shared on Lot 3 is 50-52, depending on the total number of senior living units, so most if not all parking needed can be accommodated at ultimate build-out. Staff is concerned that the multi-family may need the additional 50-52 parking spaces prior to the development of Lot 3. Section 405.075.E.5 states: "A portion of the parking area required under this Chapter may remain unimproved until such time as the Board of Aldermen deems it must be improved to serve the demand adequately. The foregoing deviations may be granted by the Planning and Zoning Commission only where there is ample evidence that said deviation will not adversely affect neighboring property, nor will it constitute the mere granting of a privilege....In all cases such deviations shall be in keeping with good land planning principles and must be specifically set out in the minutes of the Commission, as well as on plans and other exhibits in the record."

Comprehensive Plan. The City's 2040 Comprehensive Plan shows this area as "Community Mixed Use". According to page 42 of the City's Comprehensive Plan, "These places should be arranged to integrate a broad range of retail, service, office, and residential uses together in a town center format". Given the existing nearby commercial uses the use of the property as multi-family and a senior living facility is compatible with the city's vision of this area being "Community Mixed Use".

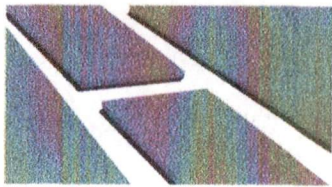
STAFF RECOMMENDATION

Staff recommends approval of the proposed Preliminary Development Plan for the 288 apartment units and the 40,000 sqft. Senior living facility with the following condition:

- 1) A Preliminary Plat and Final Plat shall be submitted, reviewed, and approved prior to the issuance of any development related (building or infrastructure) permits.
- 2) Easements shall be provided as required by Section 410.400 of the City's Municipal Code.
- 3) The subdivision name shall "not duplicate or closely approximate the name of any existing subdivision" in accordance with Sections 410.270.A.1 and 410.290.F.1 of the City's Municipal Code.
- 4) Parking shall be installed on Lot 3 prior to the development of Lot 3 if the Board of Aldermen deems it necessary to meet the demands of the apartment buildings.
- 5) Eastbound and westbound left turn lanes of 140' in length with a 100' taper shall be constructed at the intersection of Oriole Street and MO-7 as recommended in the Traffic Impact Analysis (TIA).
- 6) The engineers design and the owners shall construct the site's storm drainage in a manner that will not adversely impact the adjacent and downstream residents.
- 7) No more than twelve percent (12.00%) of the total number of housing units shall be "affordable units". Affordable units are defined as units rented to those with a state, or federal, government housing subsidy or voucher.

ATTACHMENTS

Application
Preliminary Development Plan
Landscape Plan
Elevations
Traffic Impact Analysis (TIA)
Planned Zoning Districts Regulations
Zoning Map
Aerial Map



City of

Harrisonville

est.
1836

COMMUNITY DEVELOPMENT DEPARTMENT

APPLICATION TYPE: (check type)

- ☐ Residential Preliminary Plat ☒ Commercial Site Plan
☐ Residential Final Plat

1. FILING FEE IN THE AMOUNT OF \$ _____, PAYABLE TO THE CITY OF HARRISONVILLE, MISSOURI.

An application may be withdrawn at any time upon written request; however, no refund will be made.

THE MAPS AND DATA LISTED ON THE CHECK LIST SHEET MUST BE SUBMITTED AS PART OF THIS APPLICATION.

2. PROJECT NAME:

Gardens of Harrisonville

3. PROPERTY LOCATION/ADDRESS:

1800 E. Mechanic St.

4. CURRENT ZONING OF PROPERTY (Rezoning App. required if changing zoning):

RP-4

5. PROPOSED USE(S) (e.g., single family, multi-family, retail, office, industrial):

Multi Family

6. LEGAL DESCRIPTION (attach if description is metes and bounds description):

PT LT 5 NW E OF JOHNSON EST 449/95 449/75

7. PROVIDE THE FOLLOWING INFORMATION (if applicable):

Size of Building(s) (sq. ft.): 33,774Total number of lots: 29 Buildings

Acreage in common area: _____

Total acreage: _____

8. APPLICANT (DEVELOPER/BUILDER) RL BufordPHONE (816) 741-6152 FAX _____CONTACT PERSON Lindsay VogtADDRESS PO Box 14069 CITY/STATE/ZIP Parkville MO 64152E-MAIL lindsay@rlbuford.com

APPLICATION PAGE2

9. PROPERTY OWNER The Gardens of Hamisonville, LLC
 PHONE (816) 769-6132 FAX _____
 CONTACT PERSON Steve Warger
 ADDRESS PO Box 616 CITY/STATE/ZIP Raymore Mo 64083
 E-MAIL stewwarger@gmail.com

10. ENGINEER/SURVEYOR RL Butford
 PHONE 816 741-6152 FAX _____
 CONTACT PERSON Rob Young
 ADDRESS PO Box 14069
 CITY/STATE/ZIP Parkville MO 64152
 E-MAIL roberlbutford.com

11. OTHER CONTACTS _____ PHONE _____ FAX _____
 CONTACT PERSON _____
 ADDRESS _____ CITY/STATE/ZIP _____

The legal property owner AND the applicant must sign the application, if other than the owner.

The property owner may grant permission for the filing of the application by means of a signed and notarized affidavit to that effect.

Steven M Warger

PROPERTY OWNER SIGNATURE

STEVEN M WARGER

PROPERTY OWNER - PRINT

Lindsay Vogt

APPLICANT SIGNATURE

Lindsay Vogt

APPLICANT - PRINT

Receipt # _____ Date Filed: _____ Processed by: _____ Application



City of

Harrisonville

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1836

COMMERCIAL SITE PLAN CHECKLIST SUBMITTAL COMMUNITY DEVELOPMENT DEPARTMENT

DEVELOPER

HARRISONVILLE CD

Check-Off Column	Planning and Zoning Requirements	Met	Not Met	N/A
✓	North arrow, scale, and legend. All items drawn to scale.	✓		
✓	Show existing structure (if any) and landmarks. Show zoning and present use of abutting properties.	✓		
✓	Show footprint of proposed structure(s) including setbacks to property lines, adjacent buildings, easements and street/alley right-a-ways.	✓		
✓	Show existing & proposed streets w/ dimensions. Show existing & proposed utilities with size & type of material.	✓		
✓	Topography of site on 2 feet labeled contours, including benchmark with elevation.	✓		
✓	Erosion control measures included with plan.	✓		
✓	Show existing & proposed storm water facilities, including size type of pipe, detention facilities, including pre & post development flows, storage volume, high water level & impact of downstream discharge area.	✓		
✓	Show existing & proposed water lines including meter location & size. Provide Flow Test results.		✓	
✓	Show existing & proposed sewer lines including connection to City main & any cleanouts.	✓		
✓	Show location of backflow preventers. Identify Water District	✓		
✓	Landscaping & screening plan (i.e., proposed location of dumpsters, dumpster enclosures, fences and detailed planting schedule as per ordinance.	✓		
✓	Show proposed usage, type, and intensity of building(s). Show proposed exterior lighting and signage.	✓		
✓	Show existing & proposed fire hydrants. Show size of main. Show fire flow of hydrants. Show distance to proposed structure(s) and Fire Department Connections.		✓	
	A traffic study may be required. A detailed narrative indicating number of trips to the facility per day should be prepared by a design professional. Site Plan should show proposed number of parking spaces, ingress and egress of both vehicles and pedestrians to the site.			

Check-Off Column	Planning and Zoning Requirements	Met	Not Met	N/A
	Completed application form with signatures			
	Completed Commercial Site Plan Checklist			
	Filing Fee Paid			
	Five (5) paper copies of site plan – 24"x36" One (1) reduced copy of plan on 11"x17" paper One .pdf digital copy – emailed			
	Five (5) paper copies of landscaping and screening plan-24"x36" and One (1) reduced copy of plan on 11"x17" paper One .pdf digital copy – emailed			
	Five (5) paper copies of building elevations-24"x36" One (1) reduced copy of plan on 11"x17" paper One .pdf digital copy – emailed			
	(With Final Plat for recording) One (1) geo-referenced digital copy in with Projected Coordinates: <u>NAD 1983 StatePlane Missouri West FIPS 2403 Feet</u>			

NOTE:

- ☐ Applications for building permit, planned development, or special use permit must include a site plan. Low density residential or minor renovations may be excluded from this requirement.
- ☐ 5 copies Site Plan sealed by architect or engineer licensed in state of Missouri must be submitted after final review and approval and before submission of construction plans. (Seal must be clear and legible.)

(FOR OFFICE USE ONLY)

Planning Commission Recommendation:

Approved: _____ Date: _____

Denied: _____ Date: _____

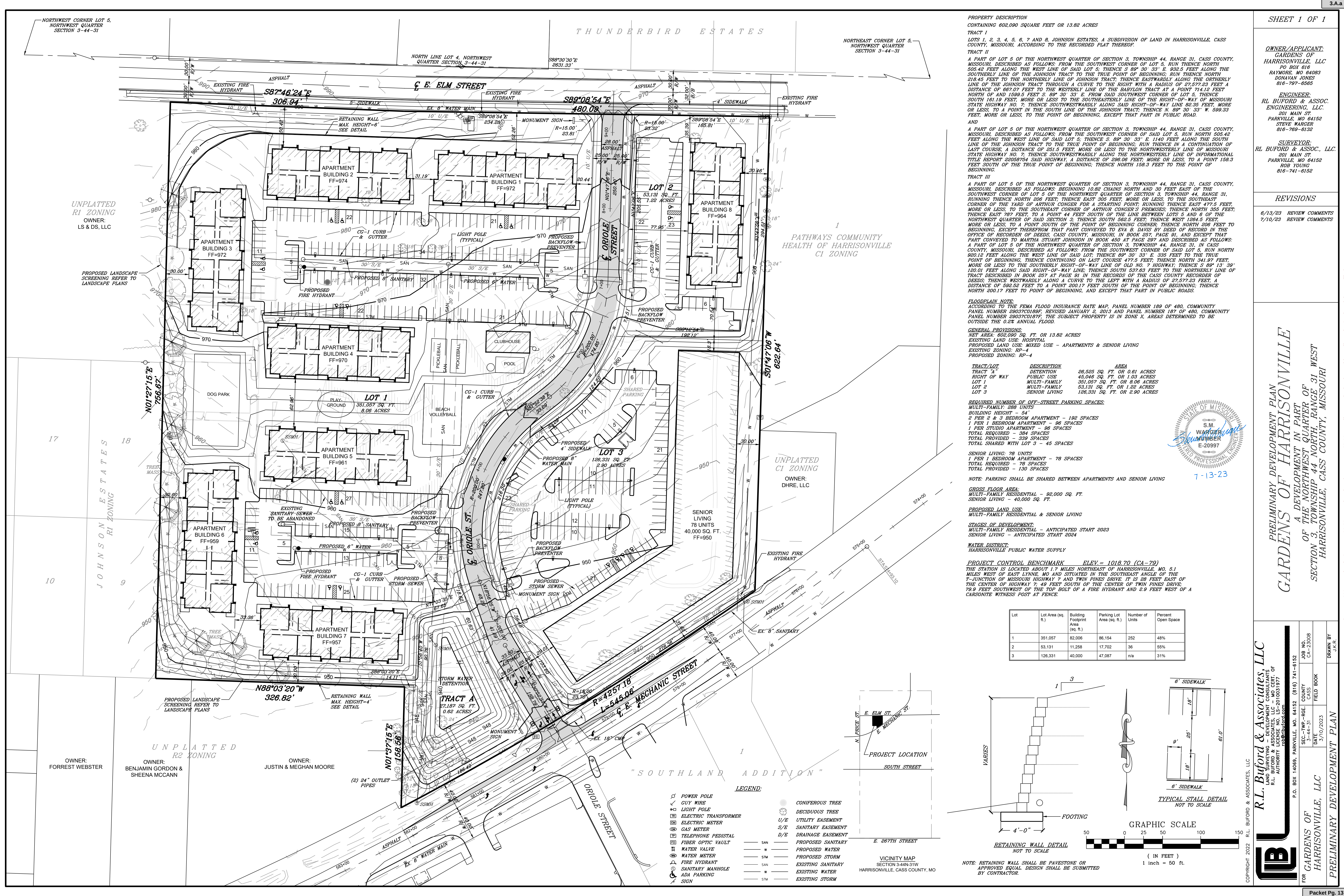
Continued: _____ Date: _____

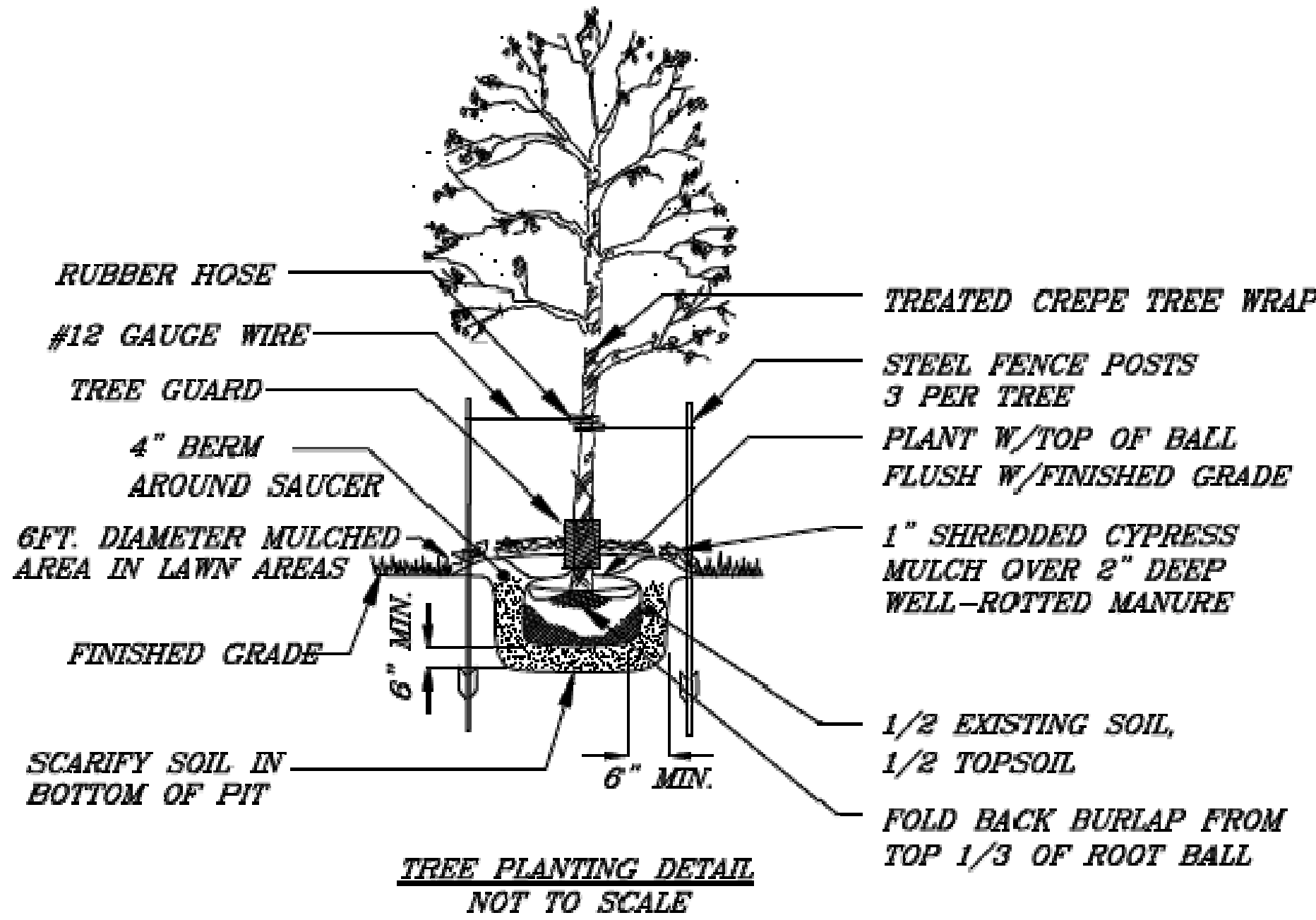
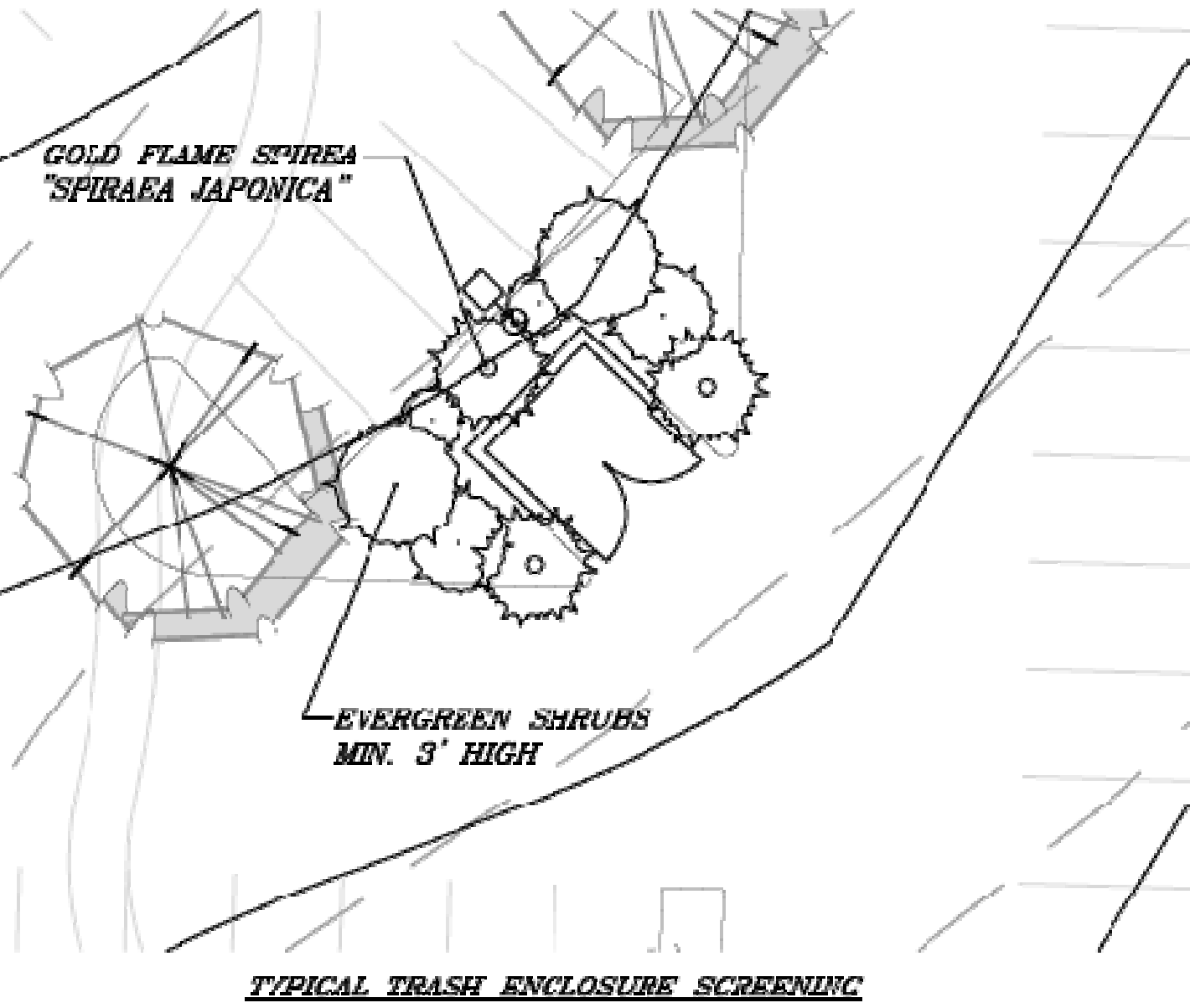
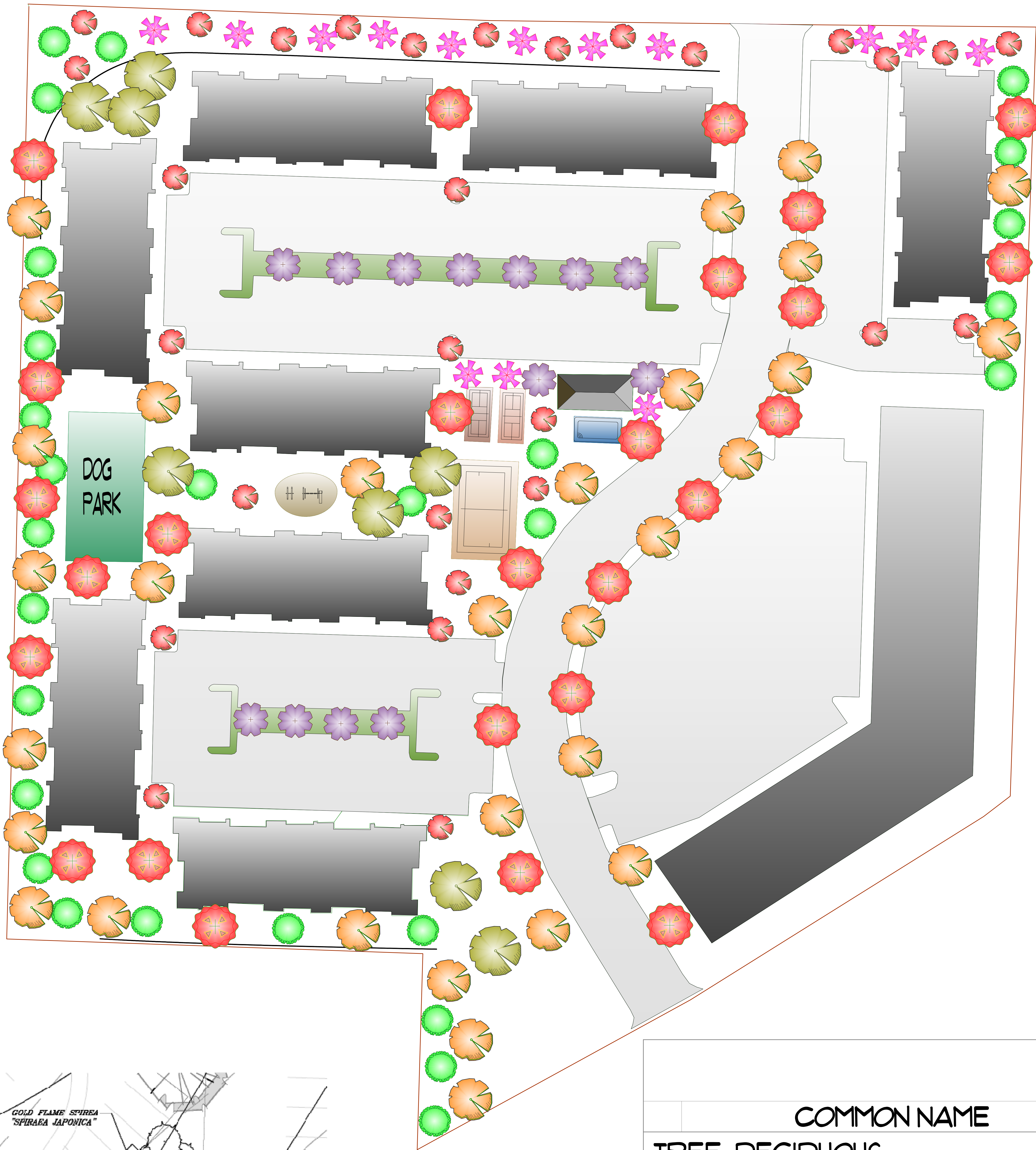
Board Aldermen Action:

Approved: _____ Date: _____

Denied: _____ Date: _____

Continued: _____ Date: _____

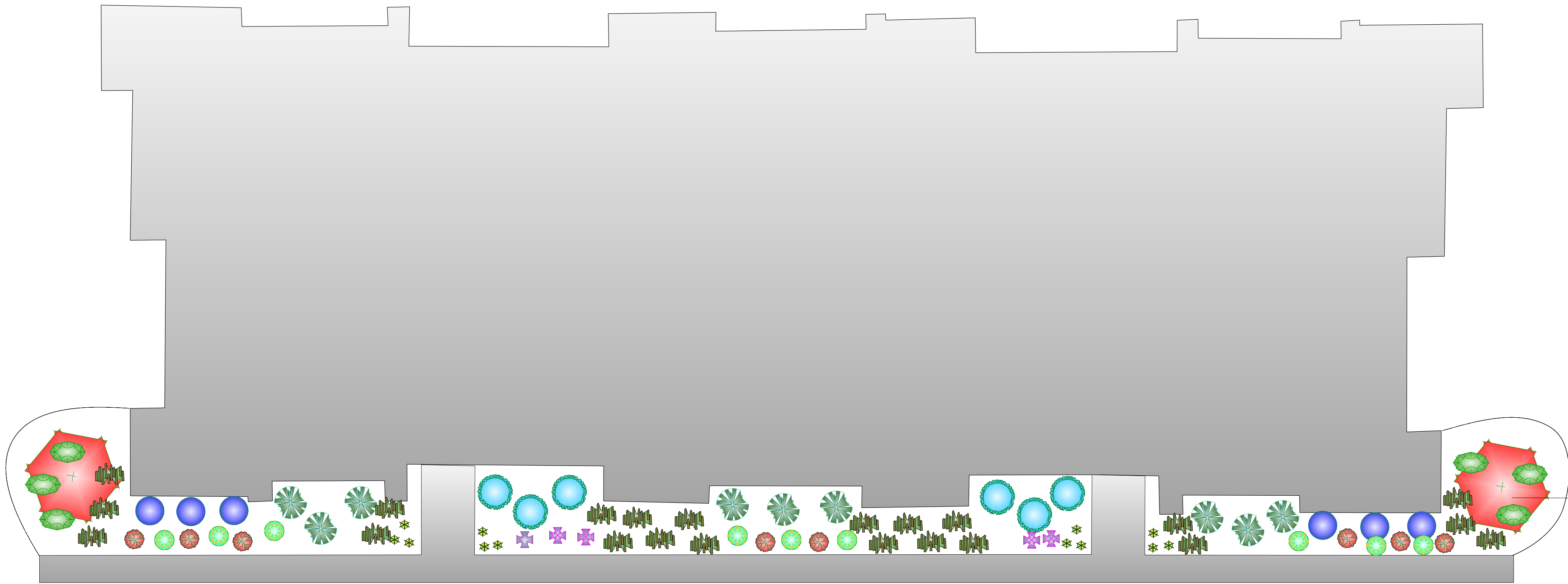




1. EXISTING UNDERGROUND, OVERHEAD UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE STARTING ANY WORK.
2. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL GIVE 72-HOUR ADVANCE NOTICE TO ALL THOSE COMPANIES/UTILITIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
3. ALL PLANT MATERIAL SHALL BE OF EXCELLENT QUALITY, FREE OF DISEASE AND INFESTATION, AND TRUE TO TYPE, VARIETY, SIZE SPECIFIED, AND FORM PER AMERICAN NURSERY ASSOCIATION STANDARDS.
4. ALL TREES AND SHRUBS SHALL BE LAID OUT IN A UNIFORM AND CONSISTENT PATTERN, FOLLOWING THE LANDSCAPE PLAN ACCURATELY. CAREFULLY HAND DIG AS REQUIRED WHERE UTILITIES ARE LOCATED.
5. ALL SHRUB BEDS IN LAWN AREAS SHALL BE GIVEN A SHOVEL CUT LANDSCAPE EDGE.
6. ALL PLANTS SHALL RECEIVE 3" MIN. OF DOUBLE SHREDDED DARK HARDWOOD MULCH IN LANDSCAPE BEDS. MULCH SHALL BE A CONSISTENT 3" DEPTH THROUGHOUT. FOR TREES PLANTED IN TURF AREAS, A 3" RING OF MULCH SHALL BE FORMED INTO A SAUCER IN A MINIMUM RING TWICE THE DIAMETER OF THE ROOT BALL FROM THE TRUNK. ELEVATION OF TOP OF MULCH SHALL BE 12" BELOW ANY ADJACENT PAVEMENT. ADD SNAPSHOT OR PREEN BEFORE AND AFTER PLANTING TO ALL LANDSCAPE BEDS.
7. CONTRACTOR SHALL THOROUGHLY WATER IN EACH PLANT IMMEDIATELY FOLLOWING INSTALLATION. COORDINATE WATERING WITH OWNER'S REPRESENTATIVE/GEN. CONTRACTOR UNTIL SUBSTANTIAL COMPLETION.
8. CONTRACTOR SHALL RE-VEGETATE ALL AREA OF THE SITE DISTURBED DURING CONSTRUCTION AS INDICATED ON THE LANDSCAPING PLANTING PLAN. TURF-TYPE TALL FESCUE SEED CONSISTING OF 90% K-31 FESCUE AND 10% PERENNIAL RYE SHALL BE INSTALLED IN ALL AREAS NOT OTHERWISE DESIGNATED AS ANOTHER MATERIAL.
9. PROPOSED TREES SHALL NOT BE PLACED OVER EXISTING OR PROPOSED UTILITY SERVICE LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND UTILITY LOCATIONS AND HAVE THEM MARKED DURING TREE PLANTING OPERATIONS.
10. NO PLANT MATERIAL SUBSTITUTIONS ARE ALLOWED WITH OUT LANDSCAPE ARCHITECT, OWNER'S AND OR CITY'S COMMUNITY DEVELOPMENT DEPARTMENT PRIOR WRITTEN APPROVAL.
11. ALL TURF AREAS AND PLANT AREAS ARE TO RECEIVE AN AUTOMATIC IRRIGATION SYSTEM. CONTRACTOR MUST SUPPLY A DESIGNED SYSTEM AND HAVE OWNER'S APPROVAL BEFORE INSTALLATION.

LEGEND

	COMMON NAME	QTY	BOTANICAL NAME	SIZE
TREE, DECIDUOUS				
	BIRCH, HERITAGE RIVER	8	BETULA NIGRA 'CULLY HERITAGE'	2"
	CRABAPPLE, PINK FLOWERING	14	MALUS 'PINK PERFECTION'	2"
	CRABAPPLE, SPRING SNOW	13	MALUS X 'SPRING SNOW'	2"
	MAPLE, AUTUMN BLAZE	31	ACER X FREEMANII 'JEFFERSRED'	2"
	MAPLE, RED	26	ACER RUBRUM 'KARPICK'	2"
	REDBUD - EASTERN	29	CERCIS CANADENSIS	2"
TREE, EVERGREEN				
	PINE, EASTERN WHITE	28	PINUS STROBUS	10 GAL.



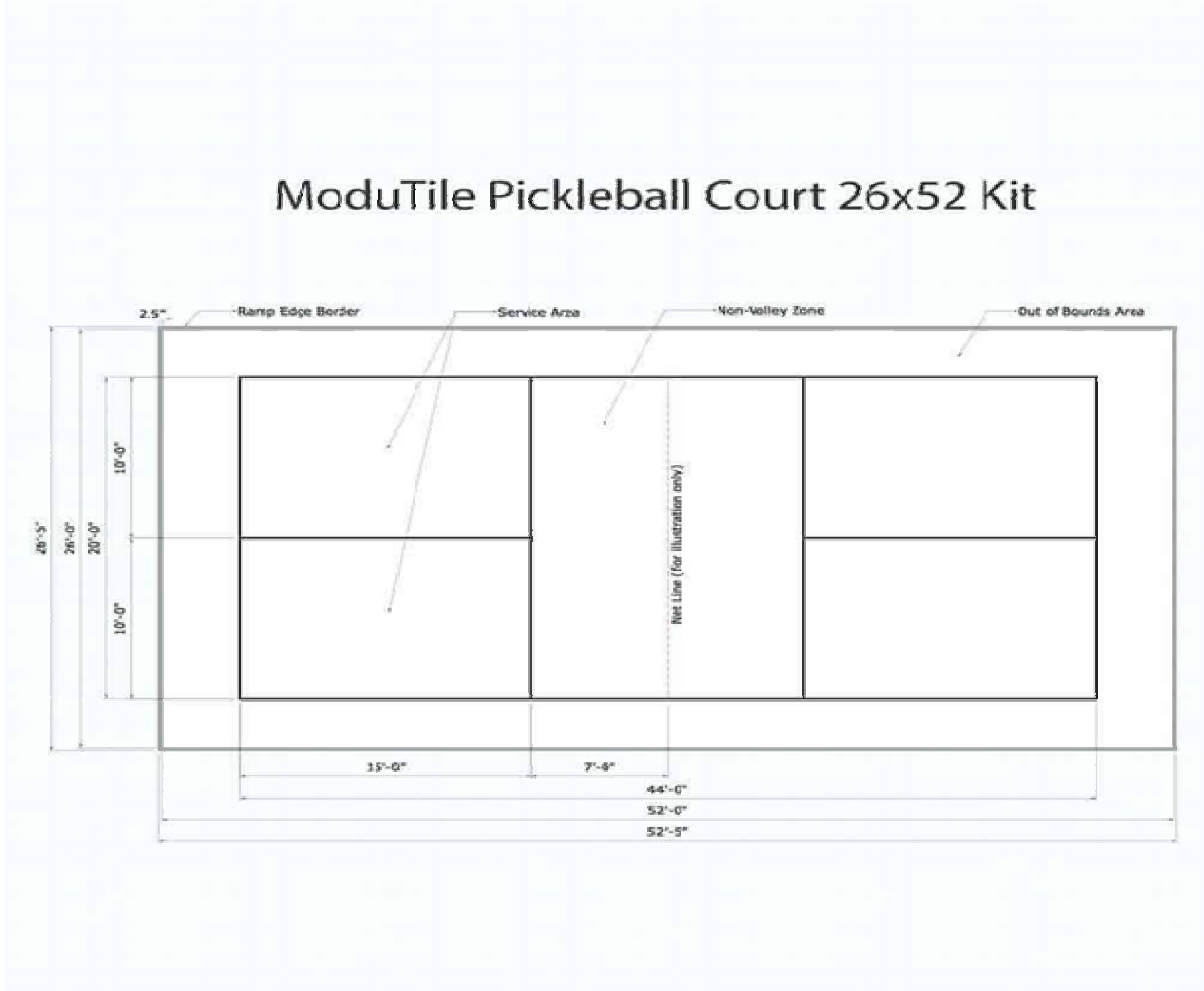
ALL LANDSCAPE BEDS TO BE OZARK RIVER ROCK.
DEWITT OR EQUAL WEED BARRIER WILL BE PLACED UNDER ROCK.

PROPERTY PLANT TOTAL
8 BUILDINGS

LEGEND

	COMMON NAME	QTY	BOTANICAL NAME	SIZE
FLOWER, GRASS				
	GRASS, 'KARL FOERSTER'	176	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	EACH
FLOWER, PERENNIAL				
	DAYLILY, STELLA D'ORO	96	HEMEROCALLIS STELLA D'ORO	EACH
	LIRIOPE, MAJESTIC	48	LIRIOPE SPICATA	EACH
SHRUB, DECIDUOUS				
	BARBERRY, CRIMSON PYGMY	64	BERBERIS THUNBERGII 'CRIMSON PYGMY' ('ATROPURPUREA	3 GAL.
	COTONEASTER, TOM THUMB	48	COTONEASTER 'TOM THUMB'	3 GAL.
	SPIRAEA, LIMEMOUND	72	SPIRAEA BUMALDA 'LIME MOUND'	3 GAL.
SHRUB, EVERGREEN BROADLEAF				
	YEW, FAIRVIEW	72	TAXUS X MEDIA	7 GAL.
SHRUB, EVERGREEN CONIFER				
	JUNIPER, BLUE RUG	48	JUNIPERUS HORIZONTALIS 'WILTONII'	5 GAL.
	SPRUCE, DWARF BLUE	48	PICEA DWARF BLUE	5 GAL.

- EXISTING UNDERGROUND, OVERHEAD UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE STARTING ANY WORK.
- PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL GIVE 72-HOUR ADVANCE NOTICE TO ALL THOSE COMPANIES/UTILITIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- ALL PLANT MATERIAL SHALL BE OF EXCELLENT QUALITY, FREE OF DISEASE AND INFESTATION, AND TRUE TO TYPE, VARIETY, SIZE SPECIFIED, AND FORM PER AMERICAN NURSERY ASSOCIATION STANDARDS.
- ALL TREES AND SHRUBS SHALL BE LAID OUT IN A UNIFORM AND CONSISTENT PATTERN, FOLLOWING THE LANDSCAPE PLAN ACCURATELY. CAREFULLY HAND DIG AS REQUIRED WHERE UTILITIES ARE LOCATED.
- ALL SHRUB BEDS IN LAWN AREAS SHALL BE GIVEN A SHOVEL CUT LANDSCAPE EDGE.
- ALL PLANTS SHALL RECEIVE 3" MIN. OF DOUBLE SHREDDED DARK HARDWOOD MULCH. IN LANDSCAPE BEDS MULCH SHALL BE A CONSISTENT 3" DEPTH THROUGHOUT. FOR TREES PLANTED IN TURF AREAS, A 3" RING OF MULCH SHALL BE FORMED INTO A SAUCER IN A MINIMUM RING TWICE THE DIAMETER OF THE ROOT BALL FROM THE TRUNK. ELEVATION OF TOP OF MULCH SHALL BE 12" BELOW ANY ADJACENT PAVEMENT. ADD SNAPSHOT OR PREEN BEFORE AND AFTER PLANTING TO ALL LANDSCAPE BEDS.
- CONTRACTOR SHALL THOROUGHLY WATER IN EACH PLANT IMMEDIATELY FOLLOWING INSTALLATION. COORDINATE WATERING WITH OWNER'S REPRESENTATIVE/GEN. CONTRACTOR UNTIL SUBSTANTIAL COMPLETION.
- CONTRACTOR SHALL RE-VEGETATE ALL AREA OF THE SITE DISTURBED DURING CONSTRUCTION AS INDICATED ON THE LANDSCAPING PLANTING PLAN. TURF-TYPE TALL FESCUE SEED CONSISTING OF 90% K-31 FESCUE AND 10% PERENNIAL RYE SHALL BE INSTALLED IN ALL AREAS NOT OTHERWISE DESIGNATED AS ANOTHER MATERIAL.
- PROPOSED TREES SHALL NOT BE PLACED OVER EXISTING OR PROPOSED UTILITY SERVICE LINES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND UTILITY LOCATIONS AND HAVE THEM MARKED DURING TREE PLANTING OPERATIONS.
- NO PLANT MATERIAL SUBSTITUTIONS ARE ALLOWED WITH OUT LANDSCAPE ARCHITECT, OWNERS AND OR CITY'S COMMUNITY DEVELOPMENT DEPARTMENT PRIOR WRITTEN APPROVAL.
- ALL TURF AREAS AND PLANT AREAS ARE TO RECIEVE AN AUTOMATIC IRRIGATION SYSTEM. CONTRACTOR MUST SUPPLY A DESIGNED SYSTEM AND HAVE OWNERS APPROVAL BEFORE INSTALLATION.



PICKLEBALL COURT
5" OF SMOOTH DURABLE CONCRETE
DIMENSIONS: 26'X52'
(NET AND COURT WILL BE:
INSTALLED PER MANUFACTURES SPECIFICATION)
COURT TO BE DESIGNED AND SUBMITTED TO
OWNERS BEFORE CONSTRUCTION.
QTY OF: 2



BARCO BRAND A-FRAME PICNIC TABLE
ITEM NUMBER:1ZK5605
DIMENSIONS: 72"LX59"WX30.5"H
COLOR AS SHOWN
PURCHASE FROM "TREE TOP PRODUCTS
(INSTALLED PER MANUFACTURES SPECIFICATION)
QTY OF: 6



PILOT ROCK HEAVY-DUTY MULTI-LEVEL GRILL
ITEM NUMBER:122669
DIMENSIONS: 16"X16"X8"
PURCHASE FROM "SPORTSMAN'S GUIDE"
(INSTALLED PER MANUFACTURES SPECIFICATION)
QTY OF: 4



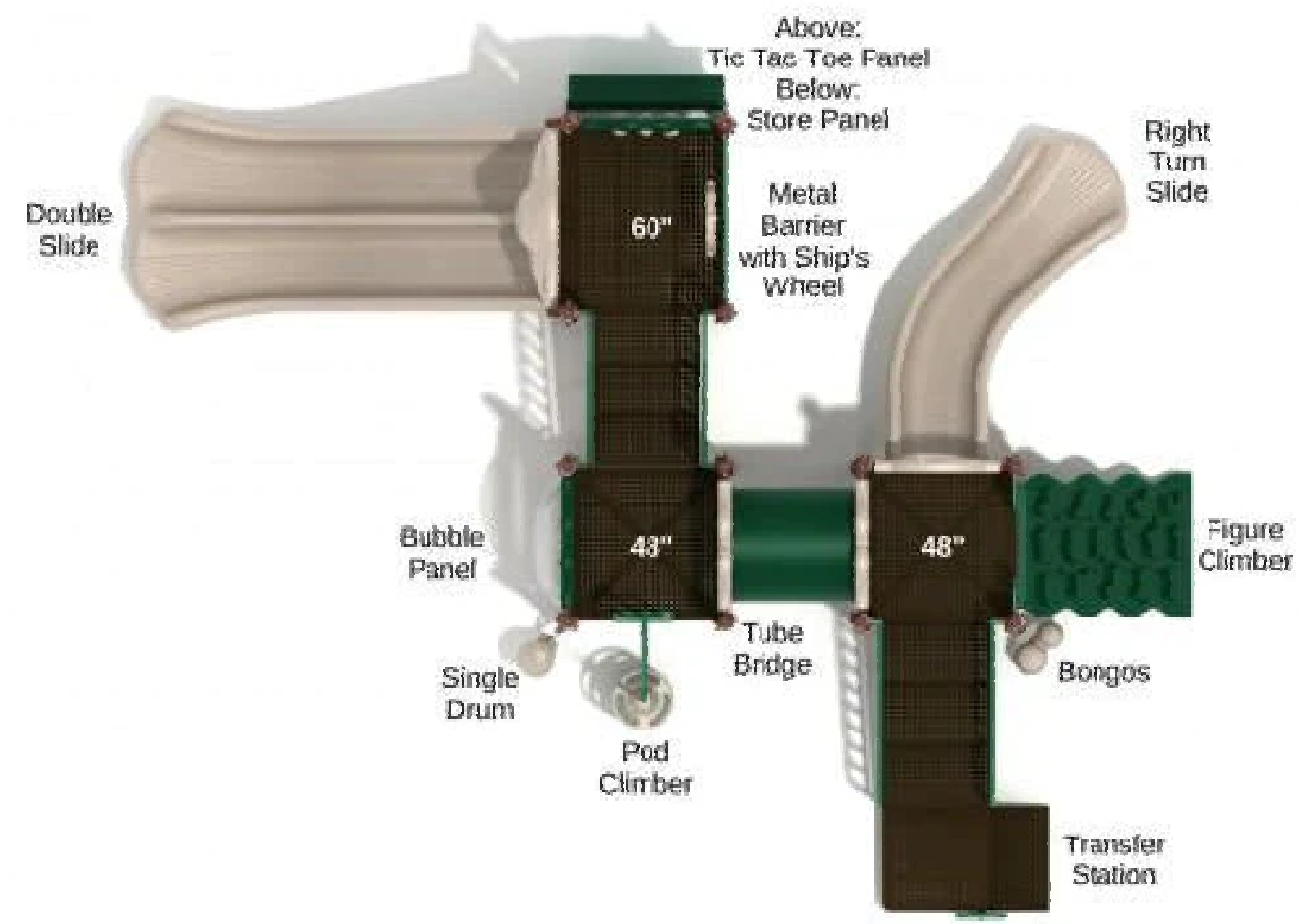
PARK BENCH (CHAMPION BENCHES)
ITEM NUMBER:2ZK2161
DIMENSIONS: 72"L X 13.75"W X 17.25"H
SURFACE MOUNT
PURCHASE FROM (THE BENCH FACTORY)
(INSTALLED PER MANUFACTURES SPECIFICATION)
QTY OF: 6

Revision #:
Date: 6/12/2023

Scale:
1/16" = 1'

Landscape Plan: LS.003
The Gardens of Harrisonville

Landscape Design by: Donavan Jones
Jabal Companies LLC



GRANITE MANOR PLAY SYSTEM
ITEM NUMBER: PKPØØ4N
DIMENSIONS: 29' X 28'8"
PURCHASE FROM "WILLY GOAT PRODUCTS"
(INSTALLED PER MANUFACTURES SPECIFICATION)

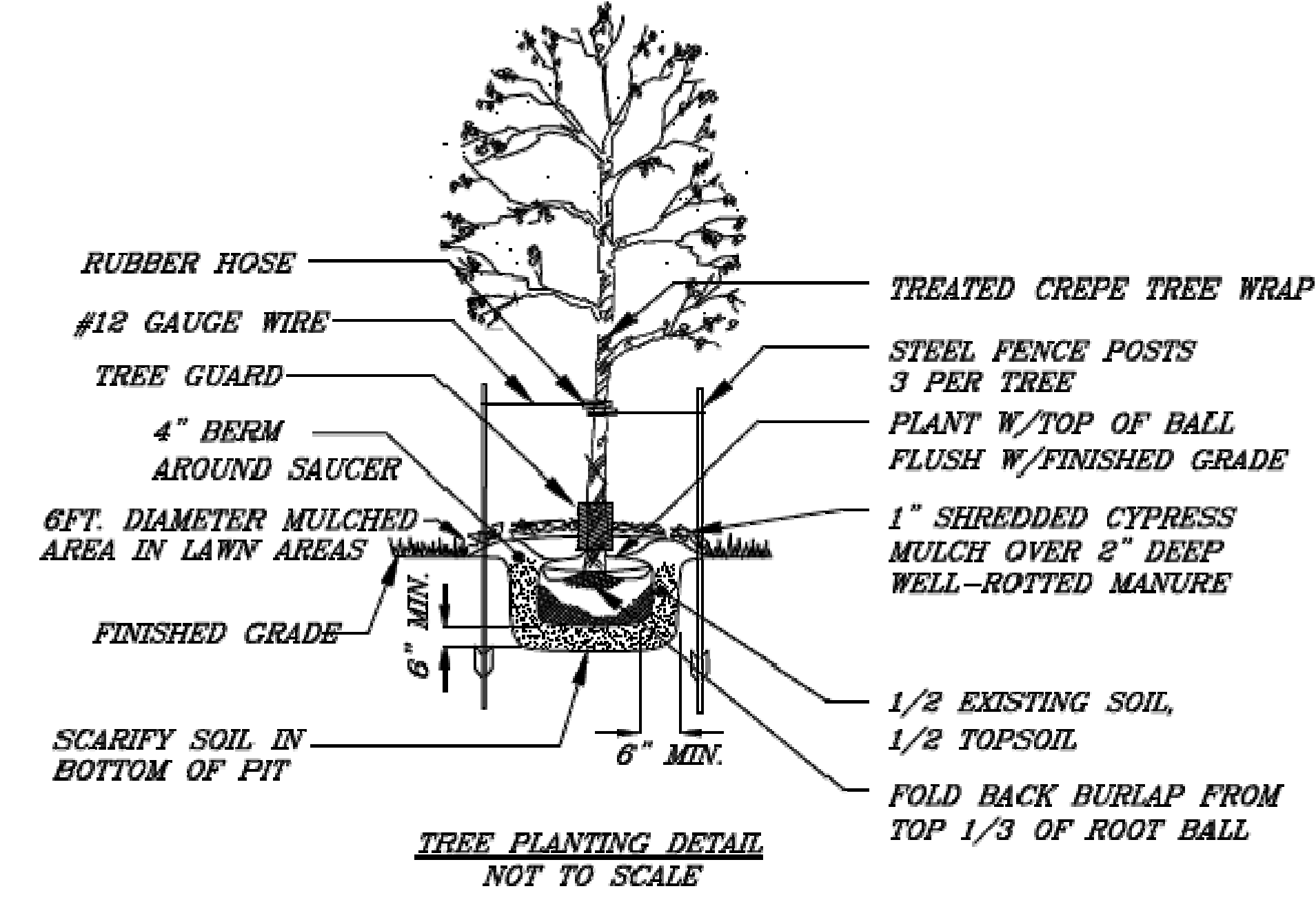
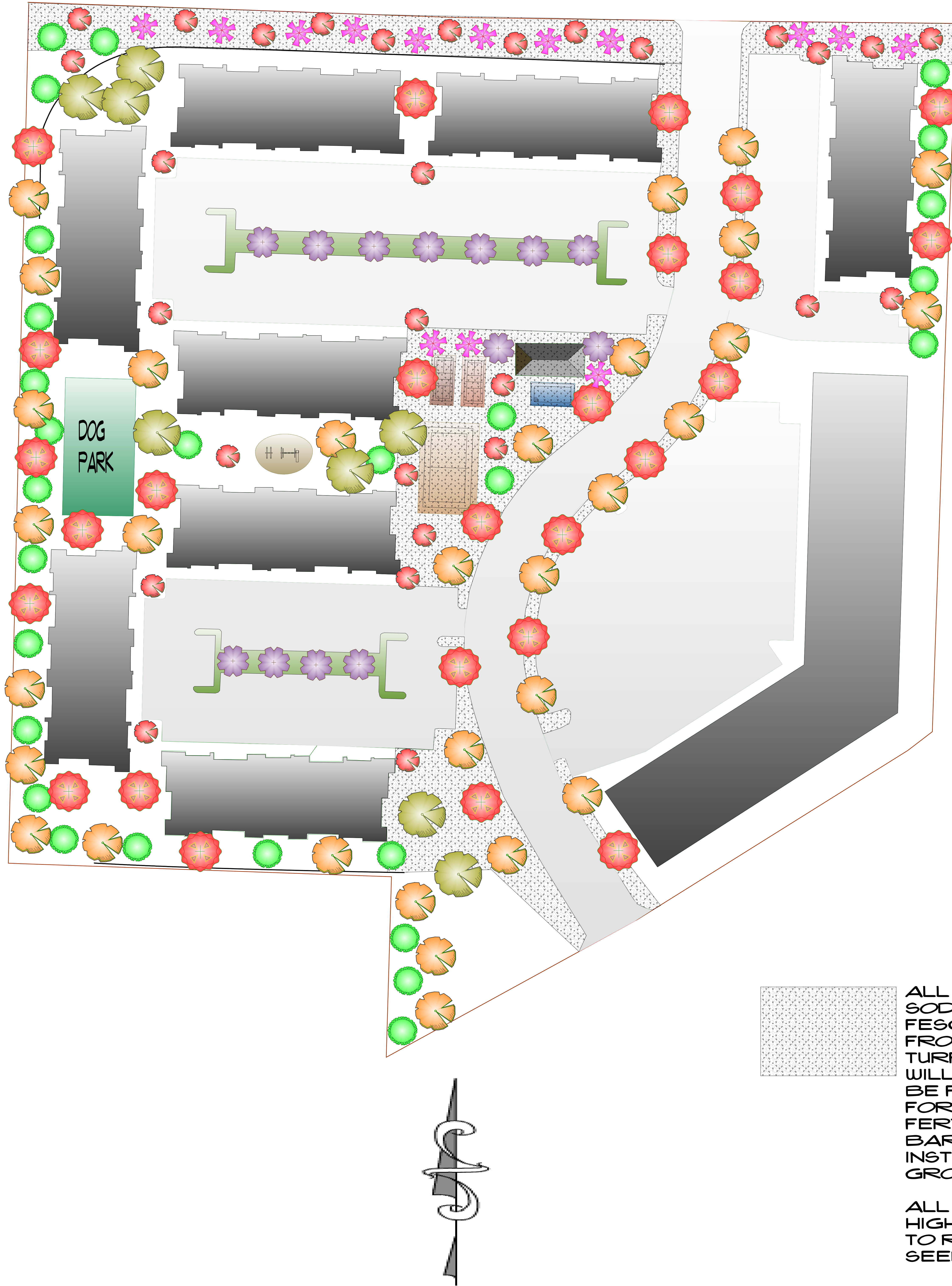
CANTILEVER SWING SET
ITEM NUMBER: PSW22ØWS PB
4 BELT / 2 BUCKET
DIMENSIONS: 32' X 43' 5"
PURCHASE FROM "WILLY GOAT PRODUCTS"
(INSTALLED PER MANUFACTURES SPECIFICATION)



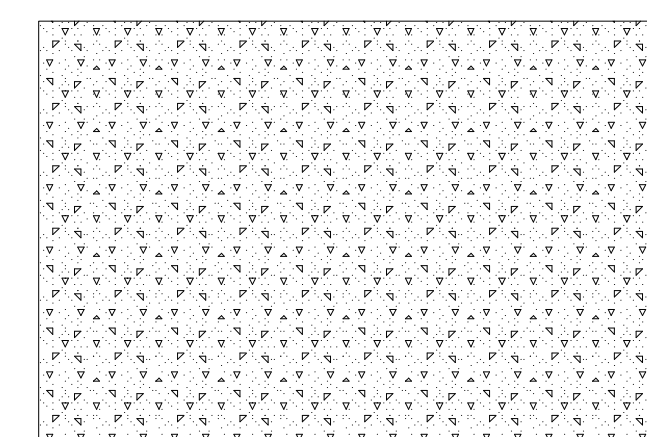
PLASTIC PLAYGROUND BORDER
ITEM NUMBER: APS-BORDER 12 2Ø
COLOR: BLACK
DIMENSIONS: 52" X 4" X 12" TALL
PURCHASE FROM "WILLY GOAT PRODUCTS"
(INSTALLED PER MANUFACTURES SPECIFICATION)

PLAY GROUND MULCH
FROM LOCAL SUPPLER
COLOR: TAN
DIMENSIONS: 6" IN DEPTH

Revision #: Date: 6/12/2023	Scale: 1/16" = 1'	Landscape Plan: LS.004 The Gardens of Harrisonville	Landscape Design by: Donavan Jones Jabal Companies LLC
--------------------------------	----------------------	--	---



1. EXISTING UNDERGROUND, OVERHEAD UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTOR TO VERIFY EXISTENCE AND LOCATION OF ALL UTILITIES BEFORE STARTING ANY WORK.
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4. ALL TREES AND SHRUBS SHALL BE LAID OUT IN A UNIFORM AND CONSISTENT PATTERN, FOLLOWING THE LANDSCAPE PLAN ACCURATELY. CAREFULLY HAND DIG AS REQUIRED WHERE UTILITIES ARE LOCATED.
5. ALL SHRUB BEDS IN LAWN AREAS SHALL BE GIVEN A SHOVEL CUT LANDSCAPE EDGE.
6. ALL PLANTS SHALL RECEIVE 3\"/>



ALL AREAS MARKED ARE TO BE SODDED WITH TURF TYPE TALL FESCUE SOD. SOD TO BE GROWN FROM LOCAL TURF FARM "HELTS TURF" ALL GRADE BELOW SOD WILL BE SMOOTH GRADED AND BE FREE FROM ALL ROCKS AND FOREIGN MATERIAL. 12-12-12 FERTILIZER TO BE INSTALLED ON BARE DIRT BEFORE SOD IS INSTALLED TO HELP ROOT GROWTH.

ALL OTHER AREAS NOT HIGHLIGHTED ON THE PLAN ARE TO RECEIVE TURF TYPE FESCUE SEEDED AS PER LINE ITEM 8.

powers
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archi
ecture

1720 Peachtree Rd. NW
Suite 305
Atlanta, GA 30309
404.902.7222
www.powersbrown.com

PROJECT TITLE

HARRISONVILLE
MULTI-FAMILY

PROJECT ADDRESS

A PROJECT FOR

27, LCC

GENERAL NOTES

△	DATE	REVISION

PROJECT NO: 236035
DRAWN BY: VM
CHECKED BY: BM

SHEET NAME

OVERALL BUILDING
ELEVATIONS - BUILDING 1

SEAL

SHEET NUMBER

A201

ELEVATION GENERAL NOTES

- EQUIPMENT SUCH AS CONDUIT, VENTS, GRILLS, METERS AND PLUMBING VENTS ATTACHED TO THE BUILDING FACE OR PROTRUDING FROM THE ROOF SHALL BE PAINTED TO MATCH SURROUNDING BUILDING SURFACES
- LOCATION OF ALL EXHAUST AND ALL OTHER EXTERIOR PENETRATIONS TO BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION
- ALL WINDOWS TO BE 2'-0" SILL HEIGHT FROM T.O. FINISH FLOOR, UNLESS NOTED OTHERWISE
- BRICK CONTROL JOINTS TO BE PER SPECS & PER ELEVATION DWGS. GC TO PROVIDE ELEVATION LAYOUT FOR CONTROL JOINT LOCATIONS AS PART OF BRICK SUBMITTAL
- BRICK SHALL BE COURSING IN ALL LOCATIONS W/ OUTSIDE CORNERS. CUT BRICK AS NECESSARY @ INSIDE CORNERS. BRICK SHALL COURSE @ ALL OPENINGS, U.N.O.
- FIBER CEMENT CORNER TRIM TO BE AT ALL SIMILIAR & DISSIMILIAR CORNERS BETWEEN FC PANEL AND FC LAP SIDING



C2 OVERALL ELEVATION - EAST - BUILDING 1
SCALE: 1/8" = 1'-0"

ELEVATION KEYNOTE LEGEND	
Key Value	Keynote Text
E1	BRICK RUNNING BOND VENEER
E2	BRICK SOLDIER COURSE AT FC TRANSITION
E8	BALCONY RAILING (49") HIGH
E9	FIBER CEMENT PANEL DARK GREY
E10	FIBER CEMENT PANEL WHITE
E11	FIBER CEMENT LAP SIDING YELLOW
E12	FIBER CEMENT LAP SIDING LIGHT GREY
E19	METAL DOWNSPOUT

D

C

B

A

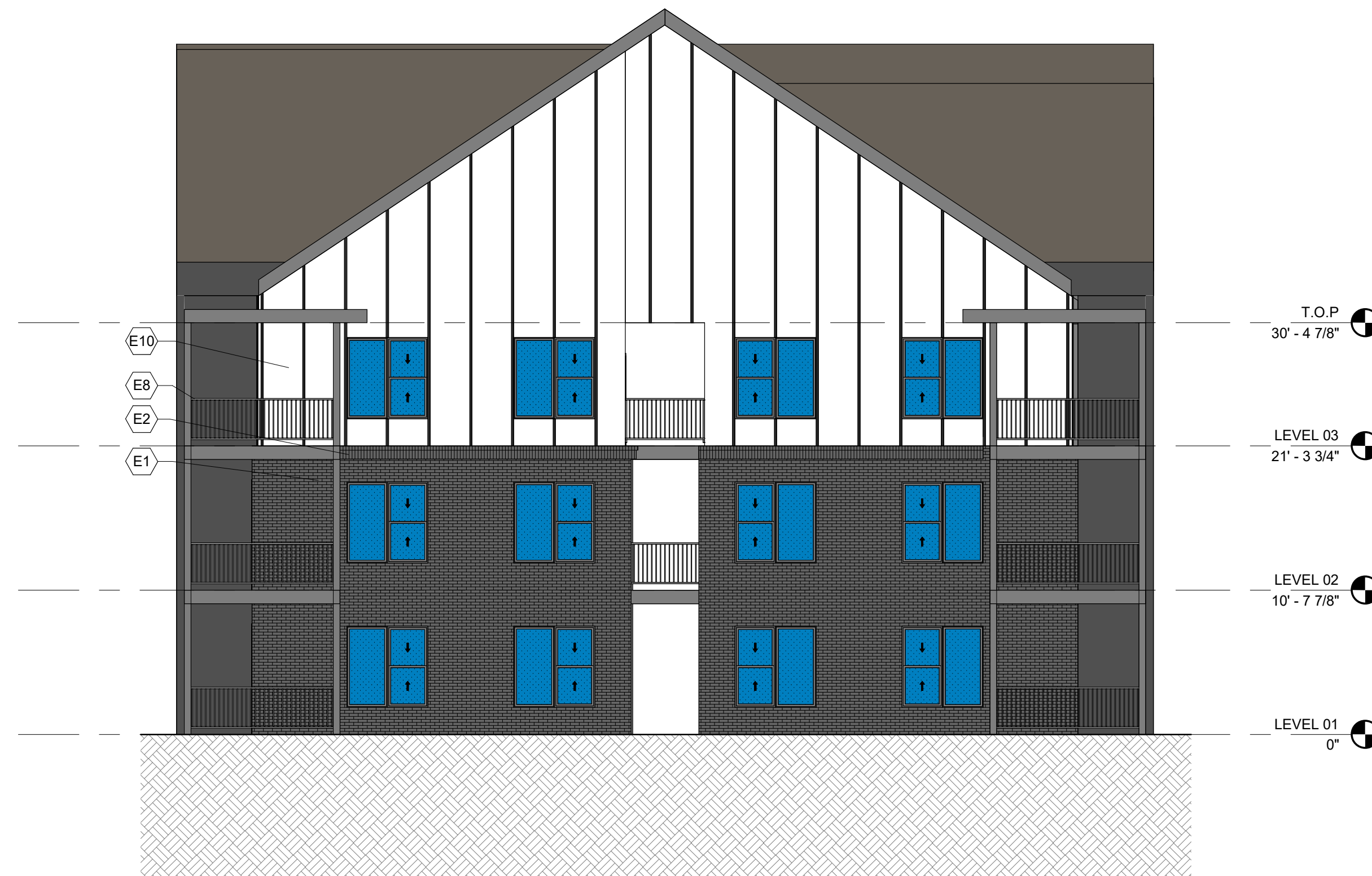


A4 OVERALL ELEVATION - NORTH - BUILDING 1
SCALE: 1/8" = 1'-0"

ELEVATION KEYNOTE LEGEND	
Key Value	Keynote Text
E1	BRICK RUNNING BOND VENEER
E2	BRICK SOLDIER COURSE AT FC TRANSITION
E8	BALCONY RAILING (49") HIGH
E9	FIBER CEMENT PANEL DARK GREY
E10	FIBER CEMENT PANEL WHITE
E11	FIBER CEMENT LAP SIDING YELLOW
E12	FIBER CEMENT LAP SIDING LIGHT GREY
E19	METAL DOWNSPOUT

ELEVATION GENERAL NOTES

1. EQUIPMENT SUCH AS CONDUIT, VENTS, GRILLS, METERS AND PLUMBING VENTS ATTACHED TO THE BUILDING FACE OR PROTRUDING FROM THE ROOF SHALL BE PAINTED TO MATCH SURROUNDING BUILDING SURFACES
2. LOCATION OF ALL EXHAUST AND ALL OTHER EXTERIOR PENETRATIONS TO BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION
3. ALL WINDOWS TO BE 2'-0" SILL HEIGHT FROM T.O. FINISH FLOOR, UNLESS NOTED OTHERWISE
4. BRICK CONTROL JOINTS TO BE PER SPECS & PER ELEVATION DWGS. GC TO PROVIDE ELEVATION LAYOUT FOR CONTROL JOINT LOCATIONS AS PART OF BRICK SUBMITTAL
5. BRICK SHALL BE COURSING IN ALL LOCATIONS W/ OUTSIDE CORNERS. CUT BRICK AS NECESSARY @ INSIDE CORNERS. BRICK SHALL COURSE @ ALL OPENINGS, U.N.O.
6. FIBER CEMENT CORNER TRIM TO BE AT ALL SIMILAR & DISSIMILAR CORNERS BETWEEN CF PANEL AND FC LAP SIDING



C2 OVERALL ELEVATION - EAST - BUILDING 2
SCALE: 1/8" = 1'-0"

[illegible]

PROJECT NO:	236035
DRAWN BY:	VM
CHECKED BY:	BM
SHEET NAME	

OVERALL BUILDING ELEVATIONS - BUILDING 2

SEAL	SHEET NUMBER
	A204

1. EQUIPMENT SUCH AS CONDUIT, VENTS, GRILLS, METERS AND PLUMBING VENTS ATTACHED TO THE BUILDING FACE OR PROTRUDING FROM THE ROOF SHALL BE PAINTED TO MATCH SURROUNDING BUILDING SURFACES
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6. FIBER CEMENT CORNER TRIM TO BE AT ALL SIMILAR & DISSIMILAR CORNERS BETWEEN FC PANEL AND FC LAP SIDING



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

A4

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

PROJECT NO:	236035
DRAWN BY:	VM
CHECKED BY:	BM

SHEET NAME
OVERALL BUILDING ELEVATIONS - BUILDING 2

A205

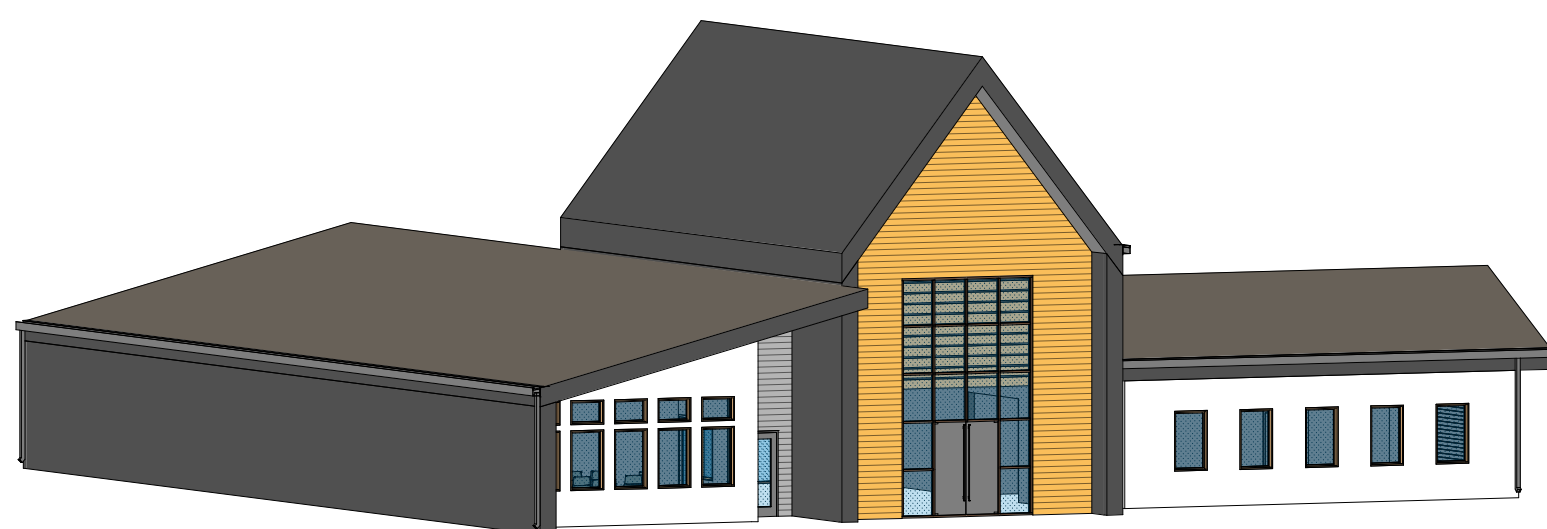
ELEVATION KEYNOTE LEGEND	
Key Value	Keynote Text
E1	BRICK RUNNING BOND VENEER
E2	BRICK SOLDIER COURSE AT FC TRANSITION
E8	BALCONY RAILING (49") HIGH
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E11	FIBER CEMENT LAP SIDING YELLOW
E12	FIBER CEMENT LAP SIDING LIGHT GREY
E19	METAL DOWNSPOUT

ELEVATION GENERAL NOTES

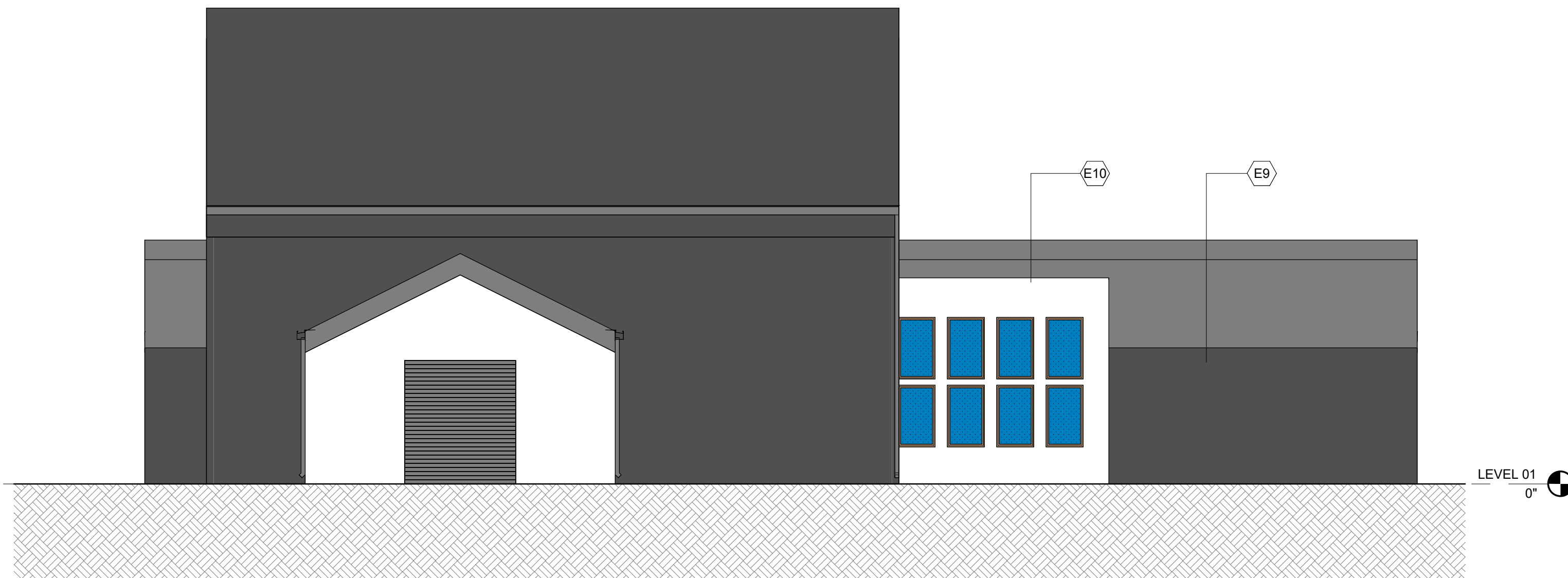
1. EQUIPMENT SUCH AS CONDUIT, VENTS, GRILLS, METERS AND PLUMBING SHALL ATTACHED TO THE BUILDING FACE OR PROTRUDING FROM THE ROOF SHALL BE PAINTED TO MATCH SURROUNDING BUILDING SURFACES
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C2 OVERALL ELEVATION - SOUTH - CLUBHOUSE
SCALE: 1/8" = 1'-0"



A4 CLUBHOUSE - 3D VIEW
SCALE:



A2 OVERALL ELEVATION - EAST - CLUBHOUSE - OPTION A
SCALE: 1/8" = 1'-0"

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404.902.7222
www.powersbrown.com

PROJECT TITLE

HARRISONVILLE MULTI-FAMILY

PROJECT ADDRESS

A PROJECT FOR

27, LCC

GENERAL NOTES

[illegible]

PROJECT NO: 236035

DRAWN BY: NC

CHECKED BY: BM

SHEET NAME

OVERALL BUILDING ELEVATIONS - CLUBHOUSE - OPTION A

SEAL

SHEET NUMBER

A207

PROJECT TITLE

HARRISONVILLE
MULTI-FAMILY

PROJECT ADDRESS

A PROJECT FOR

GENERAL NOTES

[illegible]

PROJECT NO: 236035

DRAWN BY: NC

CHECKED BY: BM

SHEET NAME

OVERALL BUILDING ELEVATIONS - CLUBHOUSE - OPTION A

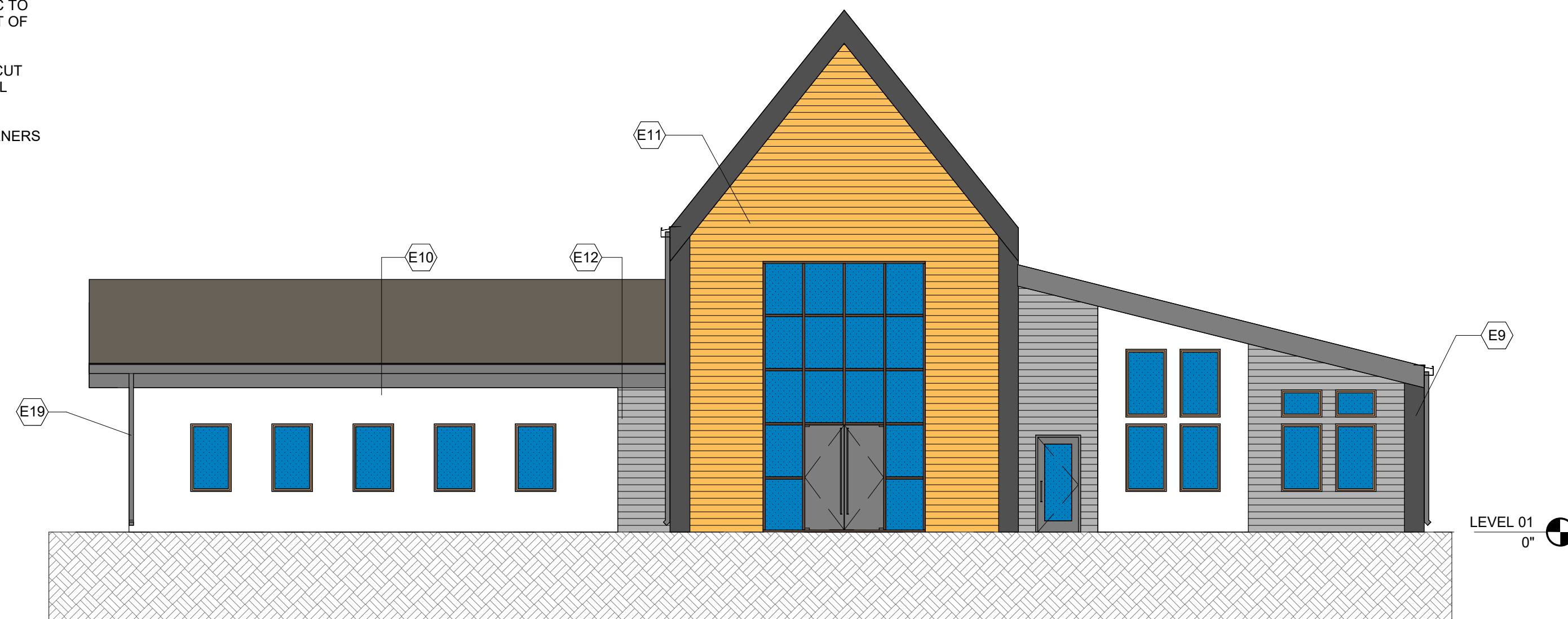
SEAL

SHEET NUMBER	
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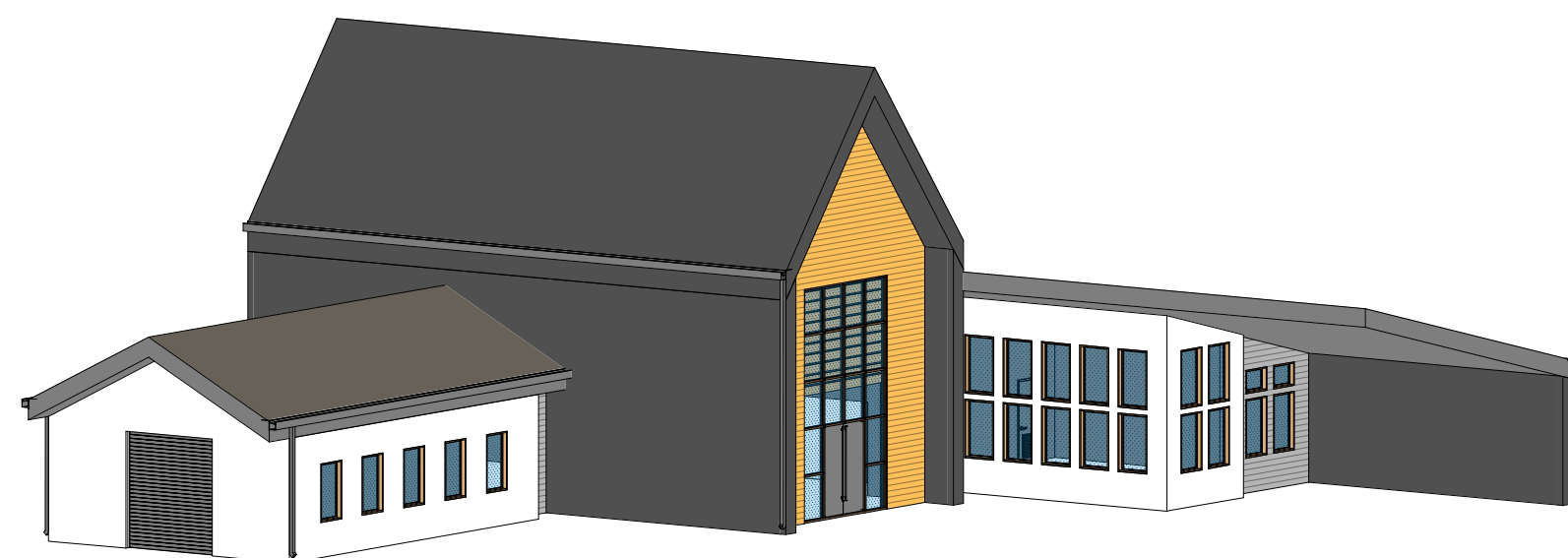
A208

ELEVATION GENERAL NOTES

1. EQUIPMENT SUCH AS CONDUIT, VENTS, GRILLS, METERS AND PLUMBING VENTS ATTACHED TO THE BUILDING FACE OR PROTRUDING FROM THE ROOF SHALL BE PAINTED TO MATCH SURROUNDING BUILDING SURFACES
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C2 OVERALL ELEVATION - NORTH - CLUBHOUSE
SCALE: 1/8" = 1'-0"



A2 OVERALL ELEVATION - WEST - CLUBHOUSE - OPTION A
SCALE: 1/8" = 1'-0"

A4 CLUBHOUSE - 3D VIEW 2

SCALE:

GARDENS OF HARRIOSNVILLE

TRAFFIC IMPACT ANALYSIS

July 11, 2023

RECEIVED

JUL 11 2023

CITY OF HARRISONVILLE

Prepared For:
Warger Associates

Prepared By:
Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747



7-11-23



July 11, 2023

Mr. Steve Warger

RE: Garden's of Harrisonville – Harrisonville, MO

Dear Mr. Warger,

In response to your request, Priority Engineers, Inc. has completed a traffic impact analysis for the above referenced project. The purpose of the analysis is to determine the potential traffic impacts associated with this development on the intersections and streets surrounding this site, primarily during the AM and PM peak hours. The following report documents our analysis and recommendations.

We appreciate the opportunity to work with you on this project. Please contact us with any questions or if you require additional information.

Sincerely,

PRIORITY ENGINEERS, INC.

A handwritten signature in black ink, appearing to read 'Kristin L. Skinner'.

Kristin L. Skinner, P.E., PTOE
President

Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747
816.738.4400

Table of Contents

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4) TRIP GENERATION	2
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Left Turn Lane Guidelines for Two-Lane Roads less than or equal to 40mph
(MoDOT EPG 940.9.1)
Right Turn Lane Guidelines for Two-Lane Roadways (MoDOT EPG 940.9.8)
Peak Hour Signal Warrant (MO 7 & Oriole)

Figure 23

Figure 24

Figure 25

APPENDIX II

Peak Hour Traffic Counts
Synchro Report

1) INTRODUCTION

The purpose of this study is to examine the potential traffic impacts associated with the proposed Gardens of Harrisonville development. The site is to be constructed where the former Cass Regional Hospital building is located on the north side of Missouri Route 7 (Mechanic Street), opposite of Oriole Street.

The study area is shown in Figure 1. The site layout is shown in Figure 2.

2) EXISTING CONDITIONS

The existing site is currently a vacant building which previously was used as a hospital. The site is bordered to the south by Missouri Route 7. MO-7 is classified as a Minor Arterial by the Mid America Regional Council (MARC). MO-7 has a two-lane cross section with open drainage and a posted speed limit of 35 miles per hour. The site is bordered to the north by Elm Street. Elm Street has a posted speed limit of 35 miles per hour, but is posted as a school zone adjacent to this property from 6:30 AM to 4:00 PM. Elm Street has a two-lane cross section with curb and gutter and an enclosed drainage system. Elm Street is classified by MARC as a Local Road.

The site is bordered to the west by single family residential homes. To the northwest, is the Harrisonville Senior High School and the main entrance to the Cass Career Center. To the north, is a single family home with commercial development to the northeast. The remainder of the surrounding property is commercial in nature.

The property currently has two main access points and a third service entrance. The main entrance onto MO-7 is currently offset from Oriole Street by approximately 20' between centerlines. The entrance onto Elm Street is located approximately 175' east of the Cass Career Center Drive and 150' west of the single-family driveway. The service entrance roughly aligns with a residential driveway.

Peak Hour turning movement counts for the intersections of MO-7 and Oriole Street and Elm Street and the Cass Career Center Drive were collected on May 23rd and May 24th of this year. The AM Peak Hour was found to be from 7:00 to 8:00 and the PM Peak Hour was found to be from 4:30 to 5:30. The complete traffic counts are shown in Appendix II. The peak hour traffic volumes and existing lane configurations are shown in Figures 3-6.

3) PROPOSED DEVELOPMENT

The proposed development will contain 288 units of multifamily housing. The remaining space is expected to either be developed as a 40,000 square foot library, or an additional 80 units dedicated to senior adult housing.

The entrance onto MO-7 will be aligned with Oriole Street in conjunction with this development and Oriole Street will be continued north to Elm Street. Oriole Street will connect to Elm Street at approximately the same location as the existing service drive.

The proposed site plan is shown in Figure 2.

4) TRIP GENERATION

The vehicle trips generated by the proposed development were estimated using the Institute of Transportation Engineers' (ITE) Trip Generation, 11th Edition. Land Use (220) Multifamily Housing (Low-Rise) was selected for the 288 apartment units. The proposed development was analyzed with both a 40,000 square foot Library (Land Use 590) and with Senior Adult Housing – Multifamily (Land Use 252). The estimated AM and PM peak hour traffic volumes associated with each scenario are shown in Tables 1 and 2.

Table 1: Trip Generation (with Library)								
Land Use	Intensity	Daily	AM Peak			PM Peak		
			Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	288 Units	1921	112	27	85	144	91	53
Library	40,000 SF	2785	55	39	16	356	171	185
Total		4706	167	66	101	500	262	238

It is worth noting that the proposed library is significantly larger than the average 15,000 square feet listed in ITE data and it is likely that the library trips are overestimated.

Table 2: Trip Generation (with Senior Housing)								
Land Use	Intensity	Daily	AM Peak			PM Peak		
			Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise)	288 Units	1921	112	27	85	144	91	53
Senior Adult Housing - Multifamily	80 Units	256	16	5	11	20	11	9
Total		2177	128	32	96	164	102	62

5) TRIP DISTRIBUTION AND ASSIGNMENT

Trips generated by the proposed Gardens of Harrisonville Development were distributed based on existing traffic flows and a general analysis of the surrounding area. The trips were distributed onto the existing street system approximately as follows:

- 35 percent to and from the north via MO 7
- 50 percent to and from the south via MO 7
- 5 percent to and from the south via Oriole Street
- 5 percent to and from the east via Elm Street
- 5 percent to and from the west via Elm Street

The proposed traffic volumes for library scenario can be seen in Figures 7 and 8. The proposed traffic volumes for the senior housing scenario can be seen in Figures 11 and 12.

6) AUXILIARY LANES

Section 940 of the MoDOT Engineering Policy Guide (EPG) was consulted to determine the need for turn lanes at the intersection of MO-7 and Oriole Street. Based on the criteria of 940.9.1, a left turn lane will be warranted with either a library or with senior housing. Based on the criteria outlined in 940.9.8, a right turn lane will not be warranted with either development use.

An eastbound and westbound left turn lane has been included in the analysis of each of the proposed and future scenarios.

7) LEVEL OF SERVICE AND VOLUME/CAPACITY ANALYSES

Capacity analysis was used to quantify the impacts of the increased traffic on the intersections studied. The methodology outlined in the Highway Capacity Manual, 6th Edition, was used as a basis to perform the analysis for this study. Capacity analysis defines the quality of traffic operation for an intersection using a grading system called Level of Service (LOS). The LOS is defined in terms of average vehicle delay. Levels of service A through F have been established with A representing the best and F the worst.

Table 3: Level of Service Definitions		
Level of Service	Unsignalized Intersection	Signalized Intersection
A	< 10 Seconds	< 10 Seconds
B	< 15 Seconds	< 20 Seconds
C	< 25 Seconds	< 35 Seconds
D	< 35 Seconds	< 55 Seconds
E	< 50 Seconds	< 80 Seconds
F	≥ 50 Seconds	≥ 80 Seconds

The study intersections were evaluated using Synchro based on part on Highway Capacity Manual methods. The analysis reports are included in Appendix II.

Existing Conditions

The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 5 and 6 in Appendix I. Currently, all stop-controlled movements are a level of service C or better in both the AM and the PM Peak Hours with a design queue of less than one vehicle except for northbound Oriole Street in the AM Peak Hour. In the existing AM Peak Hour, northbound Oriole Street has a level of service D and a design queue of 33'.

Existing + Proposed Development Conditions (with Library)

The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 9 and 10 in Appendix I. The stop-controlled movements onto Elm Street are a level of service B or better in both the AM and the PM Peak Hours with a design queue of less than one vehicle. At the intersection of MO-7 & Oriole Street, the northbound movement is a level of service E in the AM Peak Hour with a design queue of 60', while the southbound movement is a level of service E with a design queue of 40' for the left/through lane and a level of service B

with less than one vehicle design queue for the southbound right turn lane. In the PM Peak Hour, the northbound movement at this intersection is a level of service E with a 50' design queue, while the southbound movement is a level of service F with a 125' design queue for the left/through lane and a level of service B with less than one vehicle queued for the right turn lane.

Existing + Proposed Development Conditions (with Senior Housing)

The levels of service, lane configuration, and queue lengths for existing conditions are shown in Figures 13 and 14 in Appendix I. The stop-controlled movements onto Elm Street are a level of service B or better in both the AM and the PM Peak Hours with a design queue of less than one vehicle. At the intersection of MO-7 & Oriole Street, the northbound movement is a level of service E in the AM Peak Hour with a design queue of 48', while the southbound movement is a level of service E with a design queue of 30' for the left/through lane and a level of service B with less than one vehicle design queue for the southbound right turn lane. In the PM Peak Hour, the northbound movement at this intersection is a level of service C with less than a one vehicle design queue, while the southbound movement is a level of service D with less than a one vehicle design queue for the left/through lane and a level of service B with less than one vehicle queued for the right turn lane.

8) FUTURE CONDITIONS

Mid America Regional Council (MARC) population growth projections were consulted when considering a future scenario. MARC anticipates Harrisonville to experience a 0.73% annual growth rate between 2020 and 2040.

A growth factor of 1% per year for 20 years was applied to the background traffic volumes and the intersections were reevaluated. The traffic volumes, levels of service, lane configuration, and queue lengths for the horizon year (2043) are shown in Figures 17-18 and 21-23 in Appendix I.

As traffic volumes on MO-7 increase, stop controlled movements will continue to experience low levels of service during peak hours. The maximum queue anticipated would be 180' for the southbound left/through lane onto MO-7 from the development if a library were constructed. Alternate routes to exit the site are available through Elm Street and the signalized intersection of MO-7 and Elm Street.

9) SIGNAL WARRANTS

Section 902.3.5 of the MoDOT Engineering Policy Guide (EPG) was consulted for the intersection of MO-7 with Oriole Street. It is important to note that Warrant Three, Peak Hour is normally intended to be used for instances where an unusually large amount of traffic is generated in a short amount of time such a factory or an office complex. In this instance, Warrant 3 is the only Warrant that could be evaluated with the available traffic data. A summary of this analysis is found in Figure 25. The peak hour signal warrant is only met in the PM Peak Hour if the library is constructed. It is probable that delays for the southbound left/through lane would encourage drivers to use the north exit from the development onto Elm Street and exit onto northbound MO 7 at the MO 7 and Elm Street signal.

10) SIGHT DISTANCE

Stopping sight distance and intersection sight distance were measured for the proposed entrances into the development. Intersection sight distance represents the distance and time required for the driver to make the decision to turn and to complete the turn without slowing oncoming traffic. Stopping sight distance represents the distance and time required to observe a two-foot-tall object in the roadway and to then safely come to a stop. Both Elm Street and MO-7 have a posted speed limit of 35. The measurements and calculations are illustrated in Table 4 below.

Table 4: Sight Distance Values				
	Measured Stopping Sight Distance	AASHTO Required Distance (40 mph design speed)	Measured Intersection Sight Distance	AASHTO Required Distance (40 mph design speed)
North Entrance onto Elm Street				
To the east	>600'	305'	>600'	445'
To the west	415'	305'	430'	385'
South Entrance onto MO-7 Street				
To the east	>600'	305'	>600'	385'
To the west	>600'	305'	>600'	445'

While acceptable sight distance is available at both entrances into the development, careful consideration should be given to sight distance obstructions when planning future landscaping and signing, as well as maintaining the vegetative growth within the right-of-way of MO-7.

11) ACCIDENT HISTORY

A review was made of the available accident data within the MSHP's STARS reporting database. The review was made for a five-year period between June 1, 2018 and June 1, 2023 for the study intersections. During this time period there was a single crash on Elm Street, a fixed object crash during daylight hours with property damage only.

For the study intersection on MO-7, both MO-7 and CST Mechanic ST were searched. Similarly for this intersection, crashes at either Hospital Drive or CST Oriole ST were included. In total there were eleven accidents during this five-year period. Eight of the crashes occurred in daylight hours with the remaining crashes occurring under dark lighted conditions. Only two of the crashes were of a personal injury severity with the remaining crashes being property damage only. Two of the crashes were involving a fixed object with the remaining crashes involving a motor vehicle in transit.

12) RECOMMENDATIONS & CONCLUSIONS

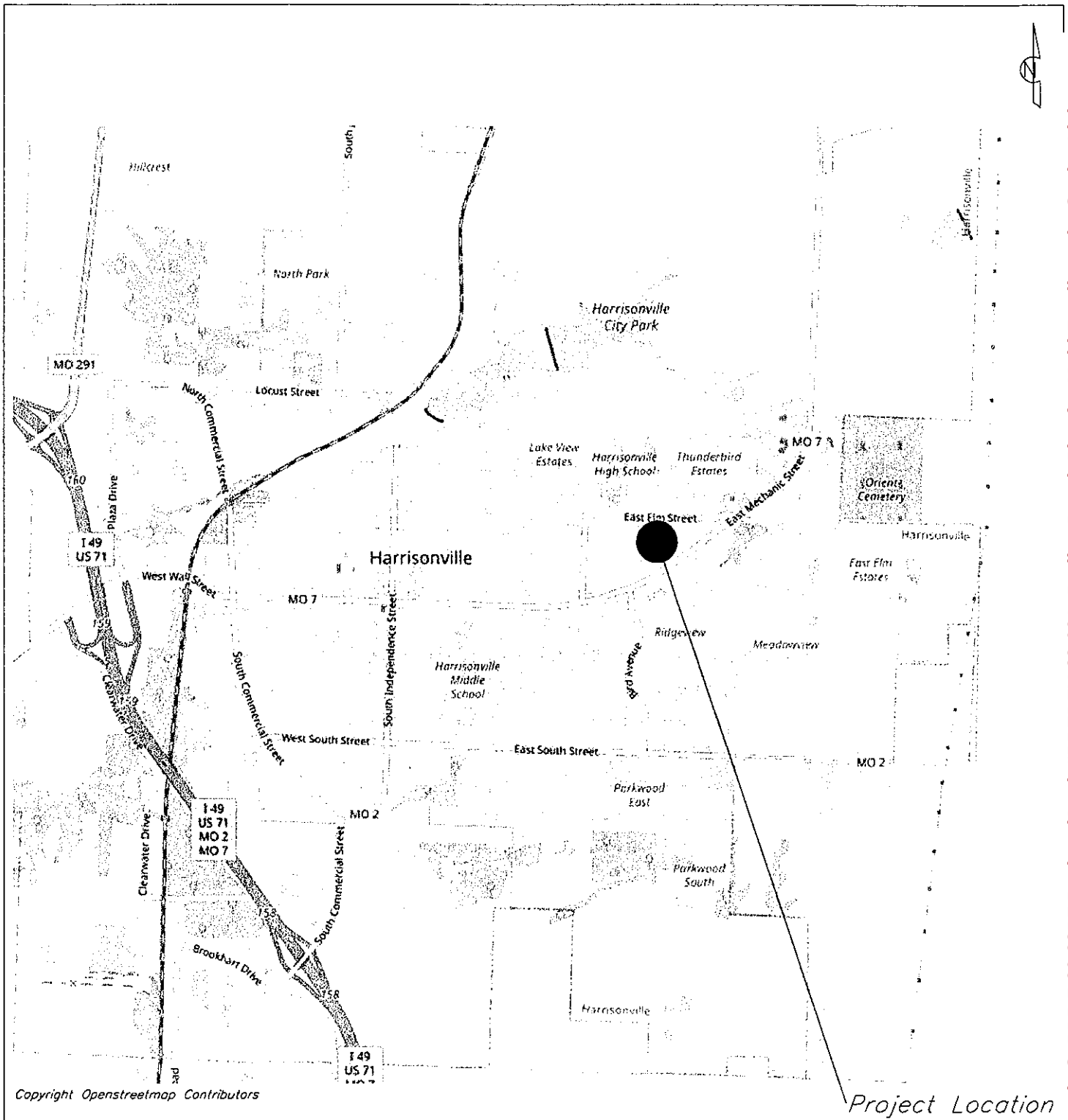
This study documents the impact of the proposed Gardens of Harrisonville development. This development includes a 40,000 square foot building which may be developed as a library. Alternatively, this same area within the site may be developed as 80 units of senior housing. Both possibilities were analyzed within this study.

The southern entrance into the site will be realigned with Oriole Street with this development. An eastbound left turn lane threshold is met with either development option. Eastbound and westbound left turn lanes should be constructed at the intersection of Oriole Street and MO-7. Each turn lane should be 140' in length with a 100' taper.

No additional traffic improvements are required as a result of this development.

APPENDIX I

Project Location	Figure 1
Site Plan	Figure 2
Existing AM Peak Hour Traffic Volumes	Figure 3
Existing PM Peak Hour Traffic Volumes	Figure 4
Existing AM Peak Hour Lane Configurations & Levels of Service	Figure 5
Existing PM Peak Hour Lane Configurations & Levels of Service	Figure 6
Existing + Proposed Development (with Library) AM Peak Hour Traffic Volumes	Figure 7
Existing + Proposed Development (with Library) PM Peak Hour Traffic Volumes	Figure 8
Existing + Proposed Development (with Library) AM Peak Hour Lane Configurations & Levels of Service	Figure 9
Existing + Proposed Development (with Library) PM Peak Hour Lane Configurations & Levels of Service	Figure 10
Existing + Proposed Development (with Senior Housing) AM Peak Hour Traffic Volumes	Figure 11
Existing + Proposed Development (with Senior Housing) PM Peak Hour Traffic Volumes	Figure 12
Existing + Proposed Development (with Senior Housing) AM Peak Hour Lane Configurations & Levels of Service	Figure 13
Existing + Proposed Development (with Senior Housing) PM Peak Hour Lane Configurations & Levels of Service	Figure 14
Future (2043) (with Library) AM Peak Hour Traffic Volumes	Figure 15
Future (2043) (with Library) PM Peak Hour Traffic Volumes	Figure 16
Future (2043) (with Library) AM Peak Hour Lane Configurations & Levels of Service	Figure 17
Future (2043) (with Library) PM Peak Hour Lane Configurations & Levels of Service	Figure 18
Future (2043) (with Senior Housing) AM Peak Hour Traffic Volumes	Figure 19
Future (2043) (with Senior Housing) PM Peak Hour Traffic Volumes	Figure 20
Future (2043) (with Senior Housing) AM Peak Hour Lane Configurations & Levels of Service	Figure 21
Future (2043) (with Senior Housing) PM Peak Hour Lane Configurations & Levels of Service	Figure 22
Left Turn Lane Guidelines for Two-Lane Roads less than or equal to 40mph (MoDOT EPG 940.9.1)	Figure 23
Right Turn Lane Guidelines for Two-Lane Roadways (MoDOT EPG 940.9.8)	Figure 24
Peak Hour Signal Warrant (MO 7 & Oriole)	Figure 25



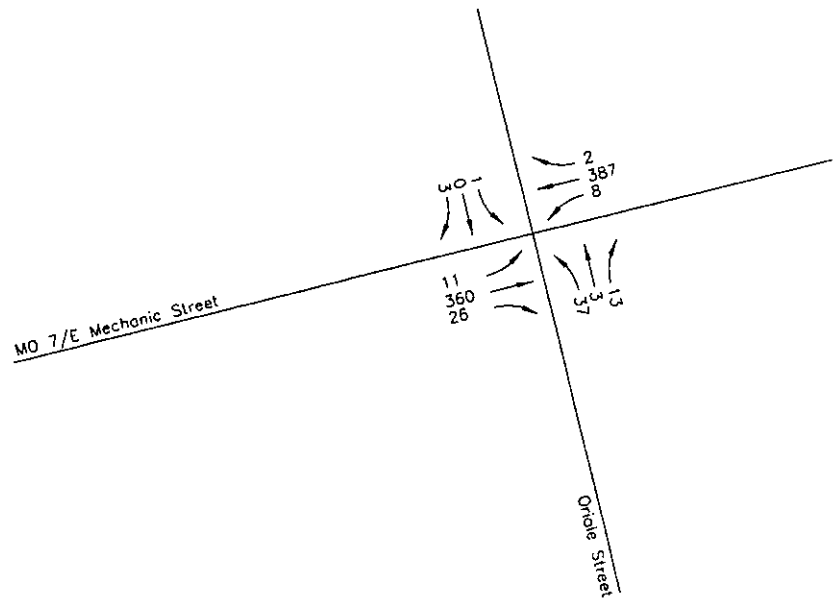
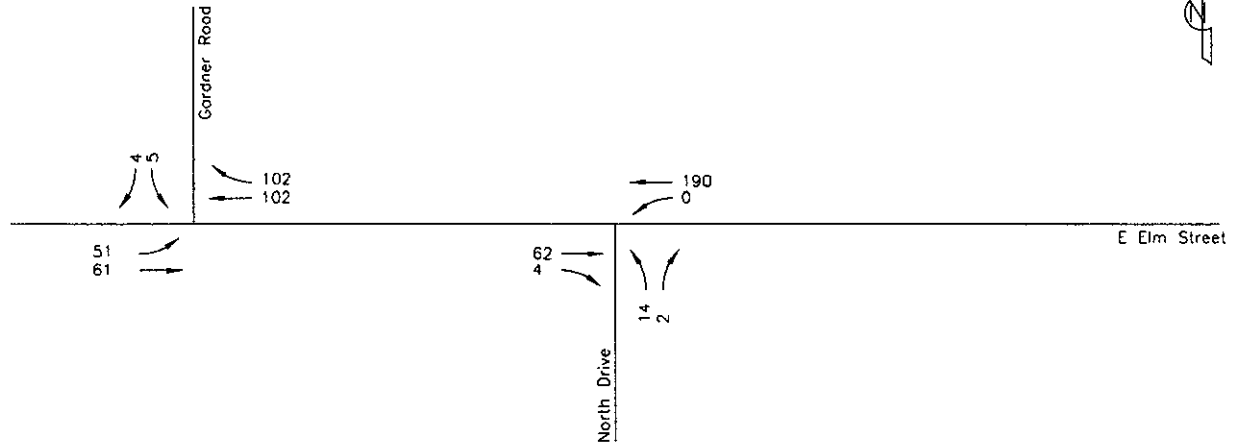
Project Location	Gardens of Harrisonville Harrisonville, MO	No Scale	 Priority ENGINEERS
		Figure 1	



P.O. BOX 14069, PARKVILLE, MO. 64152 (816) 741-6152



Priority



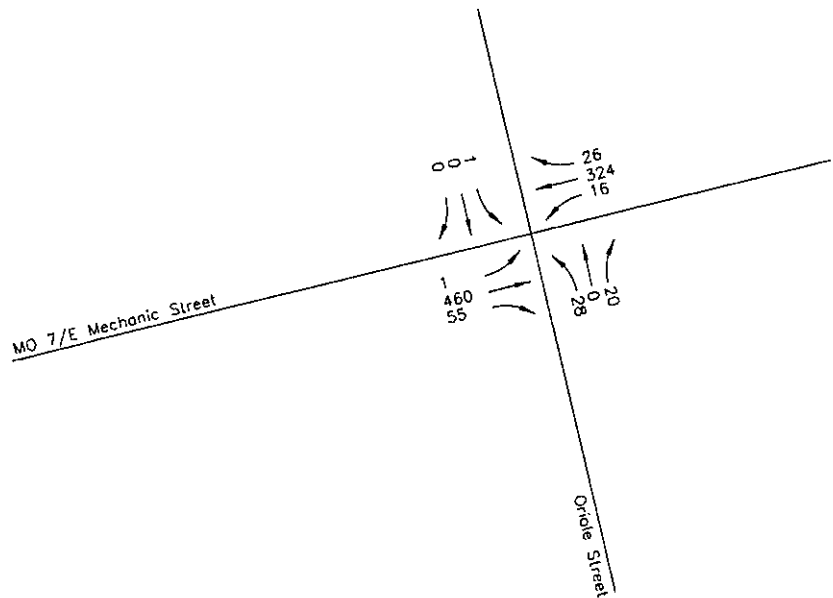
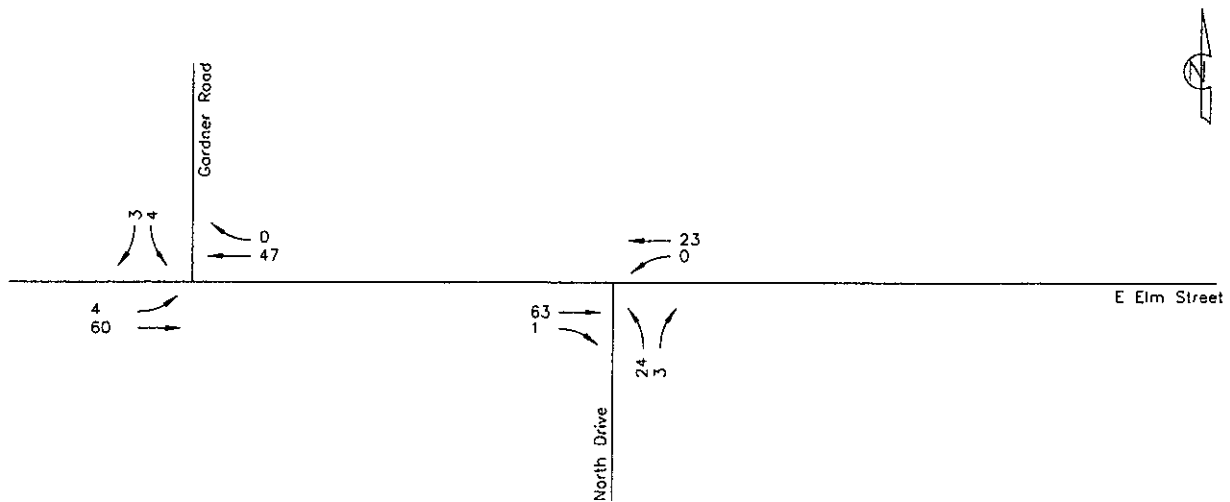
Existing AM Peak Hour
Traffic Volumes

Gardens of
Harrisonville
Harrisonville, MO

No Scale
Figure 3



Priority
ENGINEERS



LEGEND

➤ Total Volume

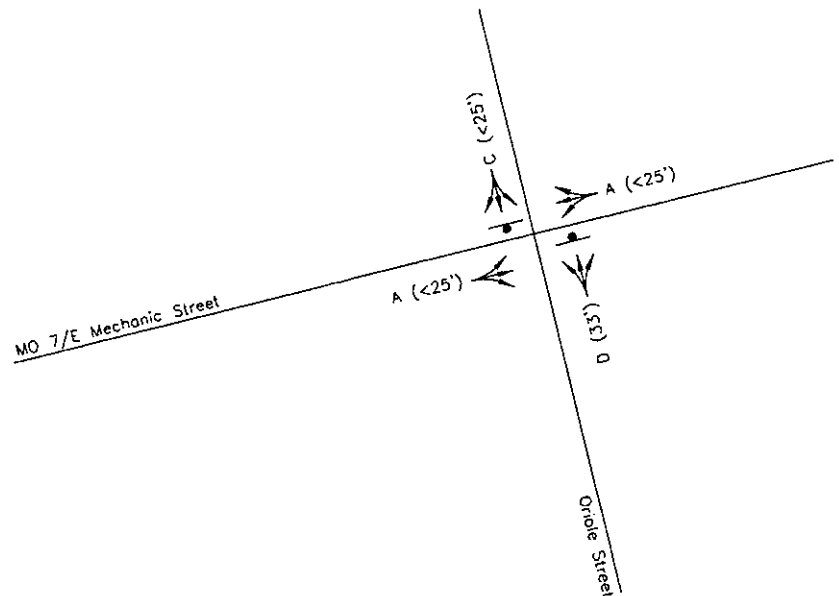
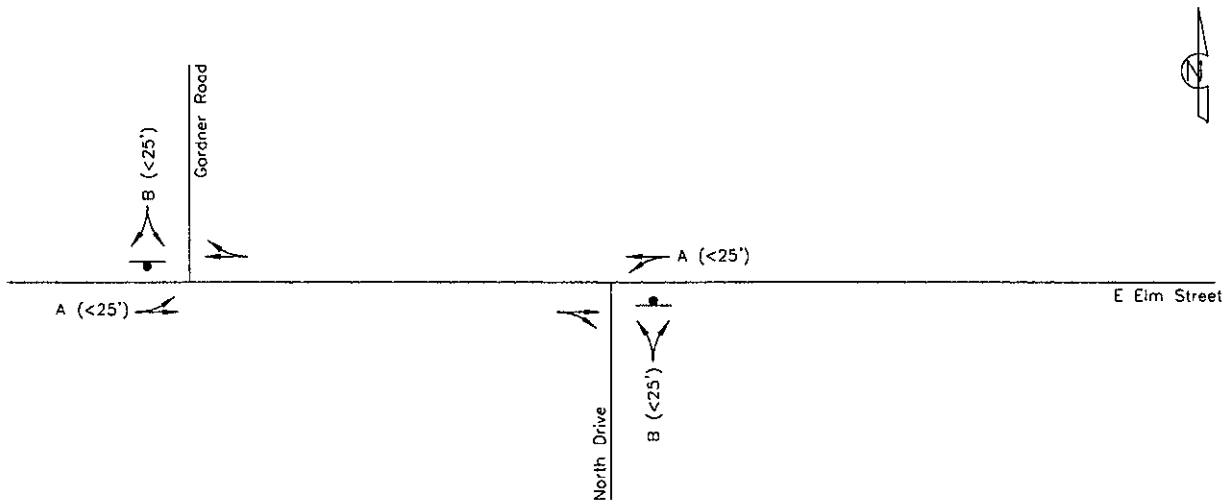
Existing PM Peak Hour
Traffic Volumes

Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 4





LEGEND

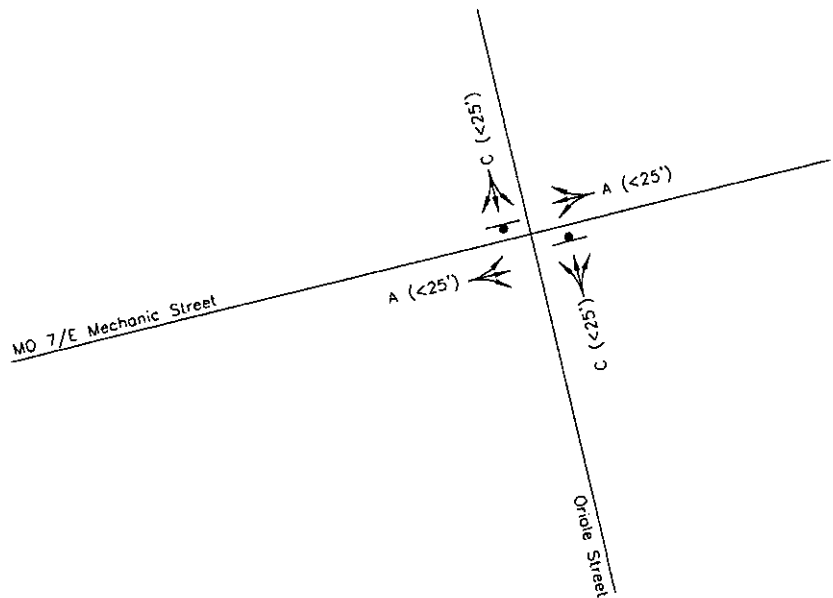
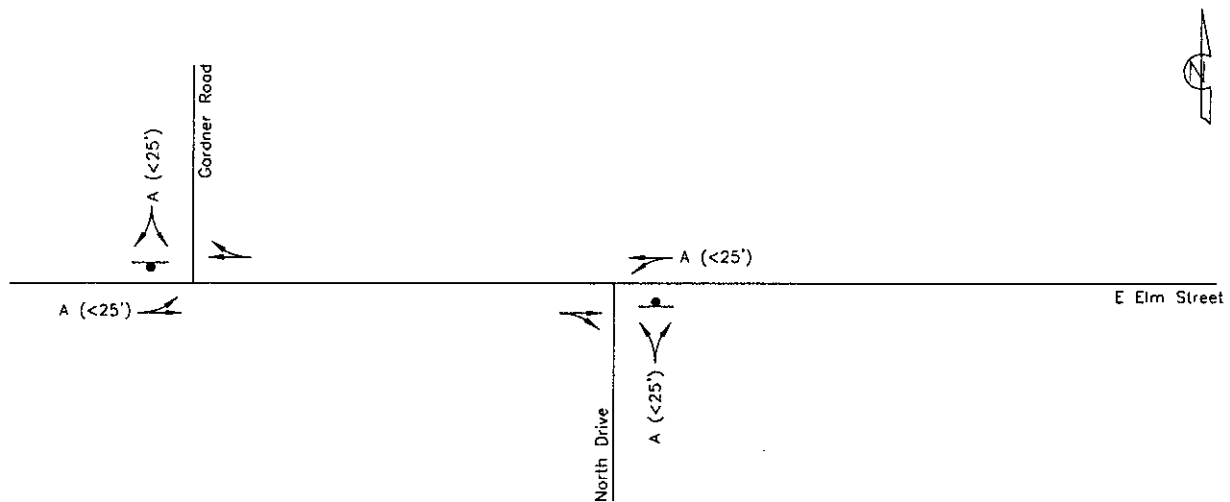
-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Existing AM Peak Hour
Lane Configurations &
Levels of Service

Gardens of
Harrisonville
Harrisonville, MO

No Scale
Figure 5





LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Existing PM Peak Hour
Lane Configurations &
Levels of Service

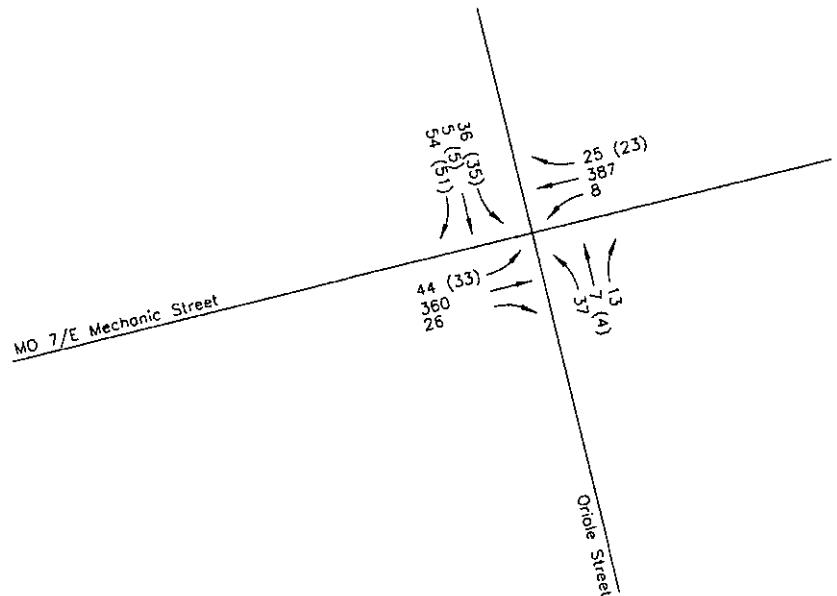
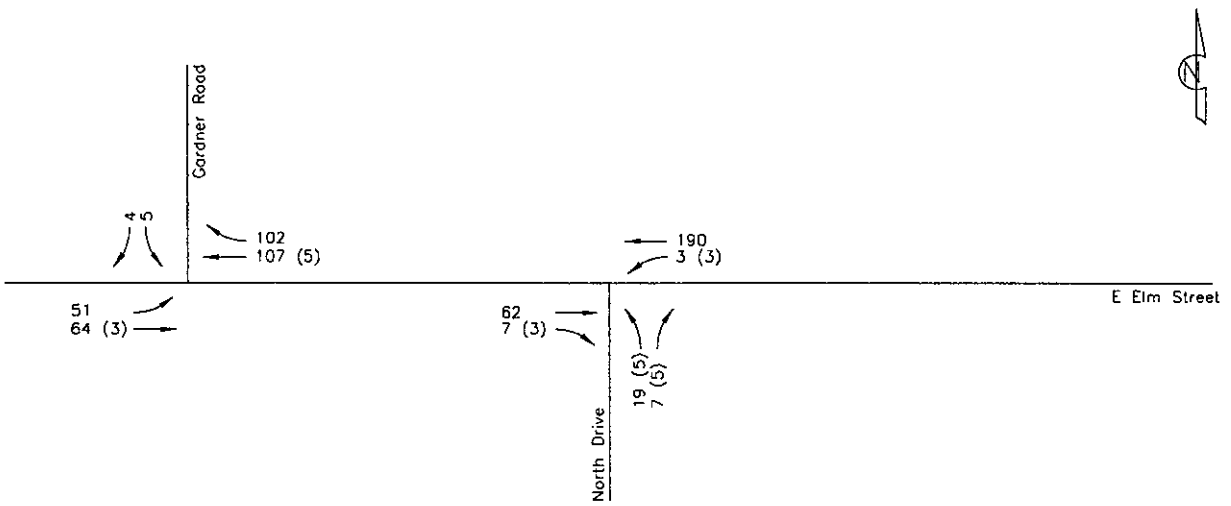
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 6



Priority
ENGINEERS



LEGEND

Total Volume (New Trips)

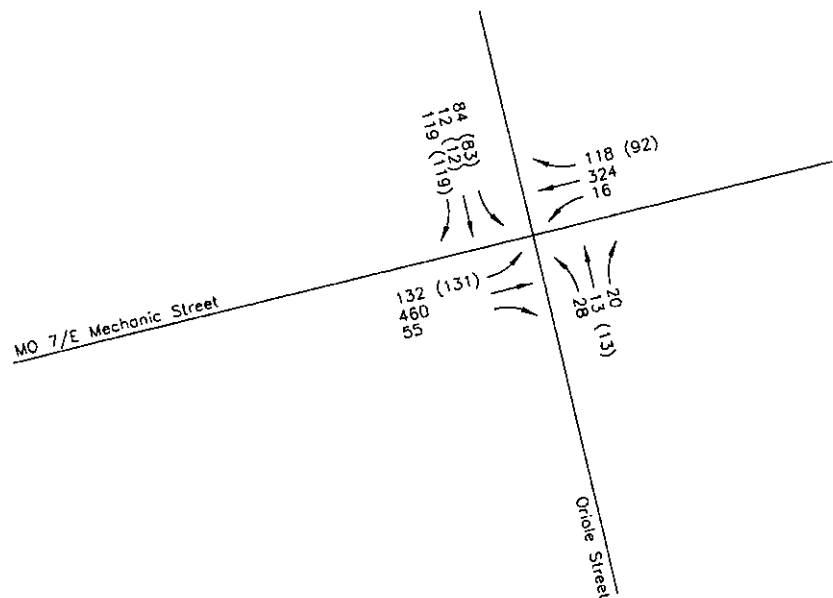
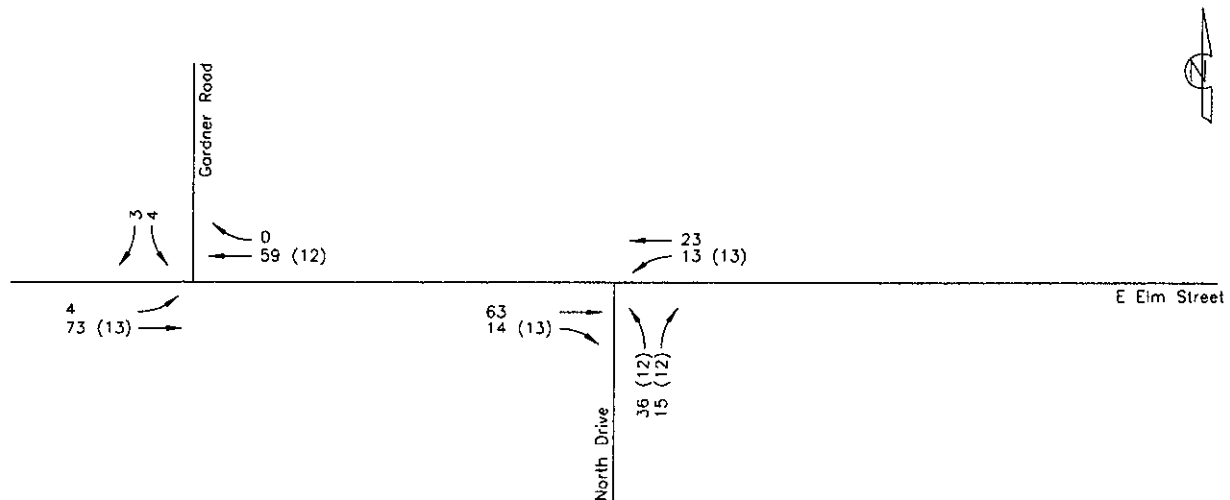
Existing + Proposed Development
(with Library)
AM Peak Hour Traffic Volumes

Gardens of
Harrisonville
Harrisonville, MO

No Scale
Figure 7



Priority
ENGINEERS



LEGEND

 Total Volume (New Trips)

Existing + Proposed Development
(with Library)
PM Peak Hour Traffic Volumes

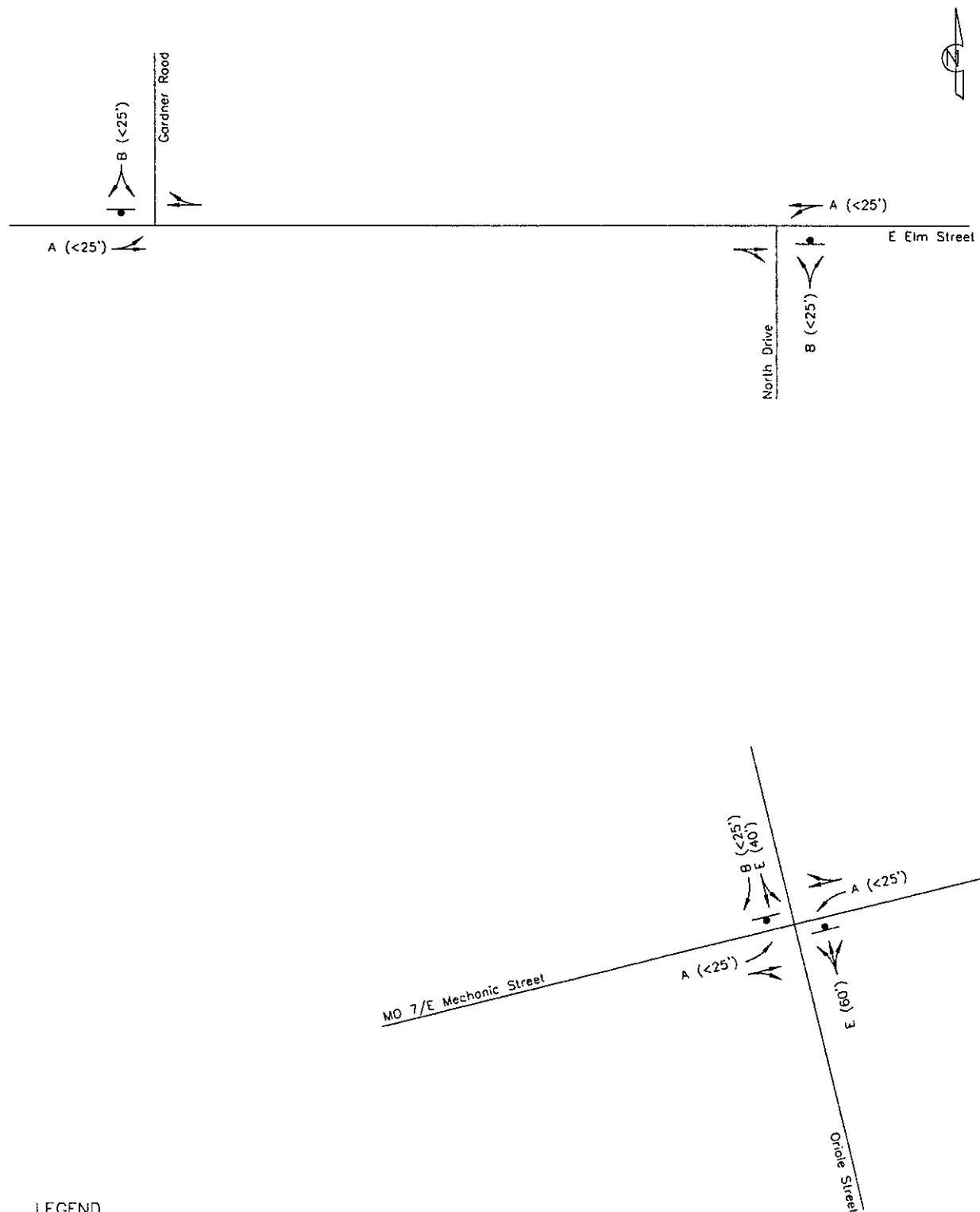
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 8



Priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

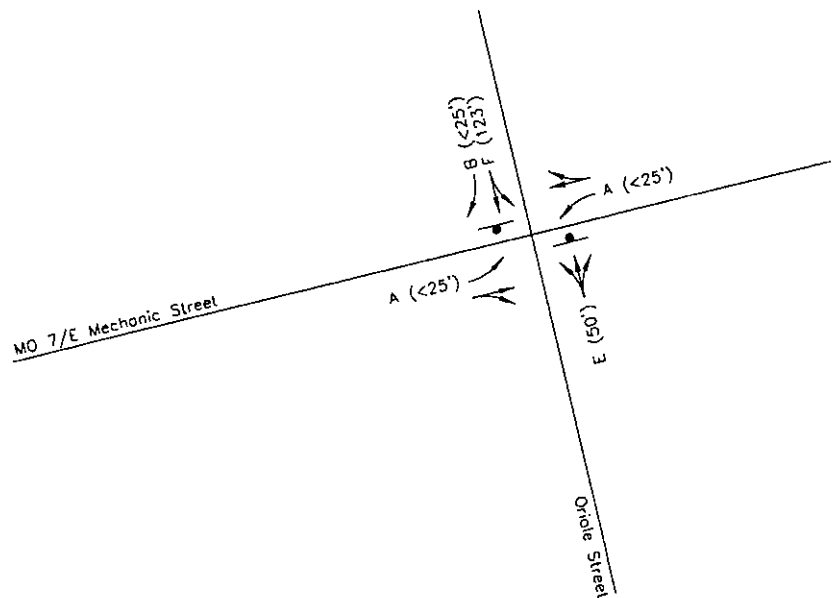
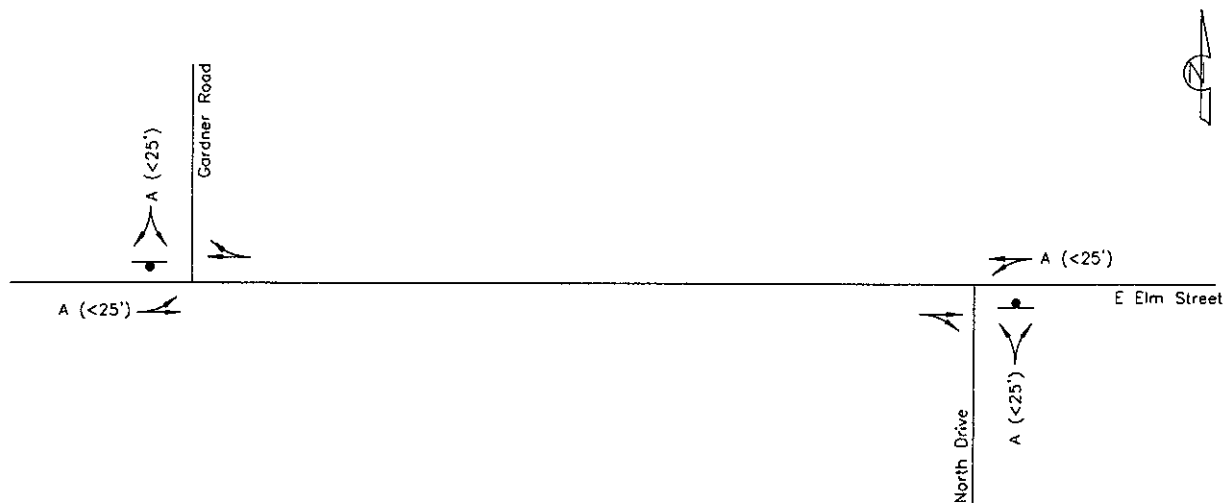
Existing + Proposed Development
(with Library)
AM Peak Hour Lane Configurations
& Levels of Service

Gardens of
Harrisonville
Harrisonville, MO

No Scale
Figure 9



priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Existing + Proposed Development
(with Library)
PM Peak Hour Lane Configurations
& Levels of Service

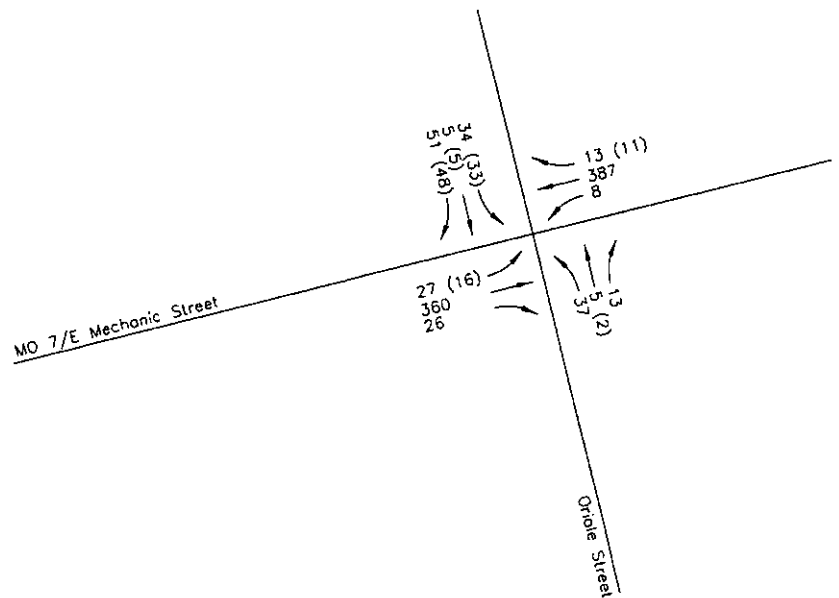
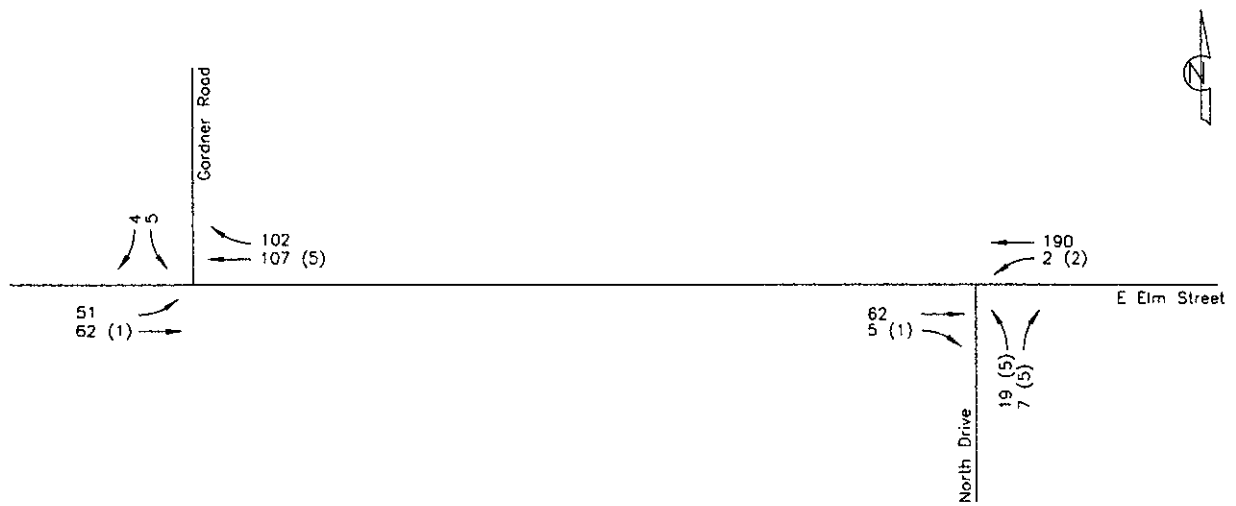
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 10



Priority
ENGINEERS



LEGEND

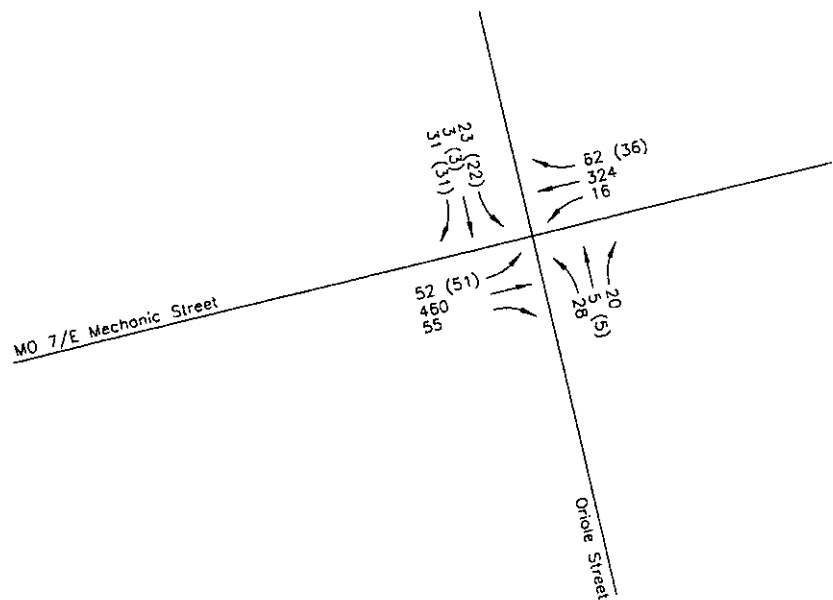
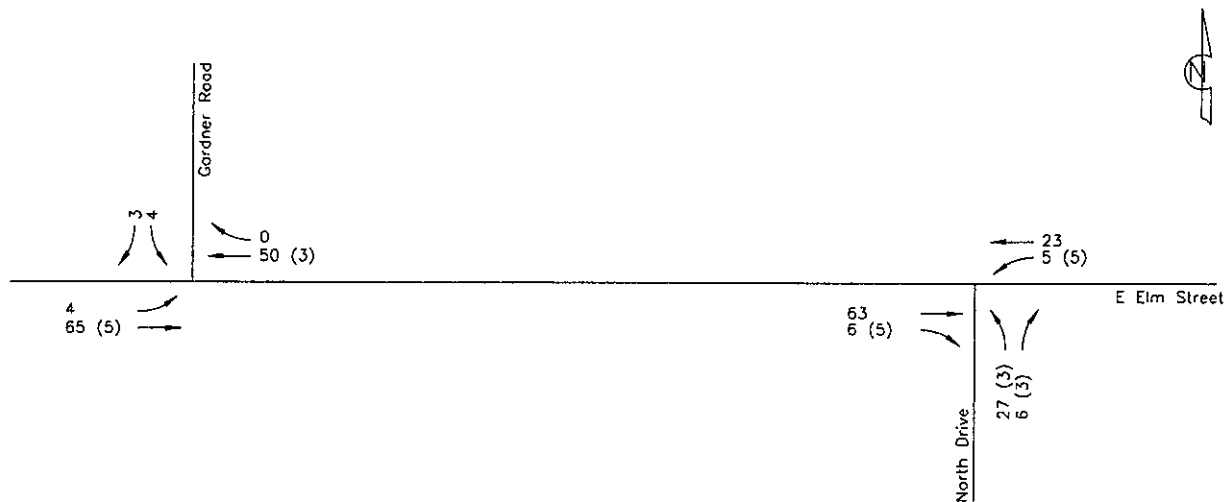
Total Volume (New Trips)

Existing + Proposed Development
(with Senior Housing)
AM Peak Hour Traffic Volumes

Gardens of
Harrisonville
Harrisonville, MO

No Scale
Figure 11





LEGEND

Total Volume (New Trips)

Existing + Proposed Development
(with Senior Housing)
PM Peak Hour Traffic Volumes

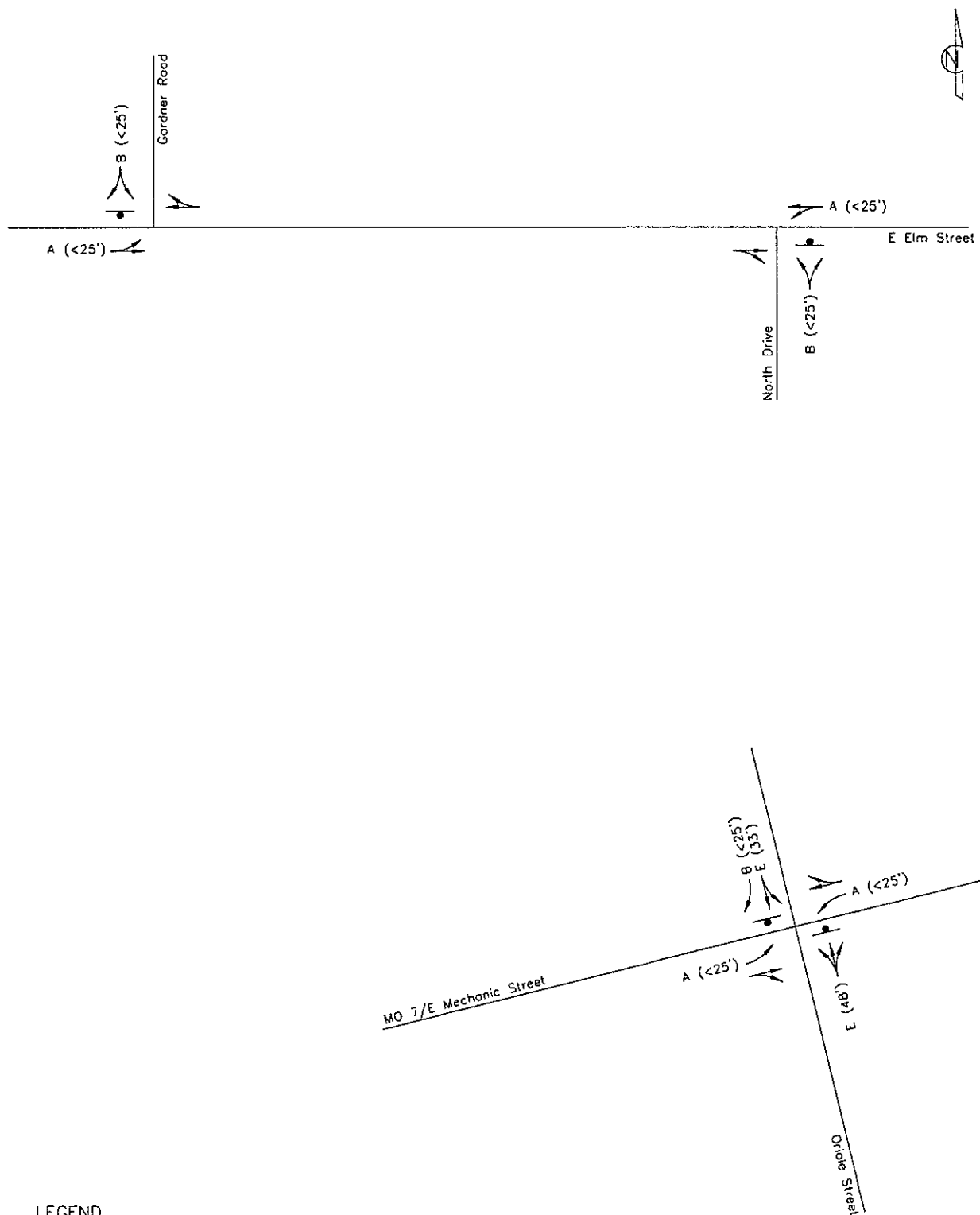
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 12



Priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Existing + Proposed Development
(with Senior Housing)
AM Peak Hour Lane Configurations
& Levels of Service

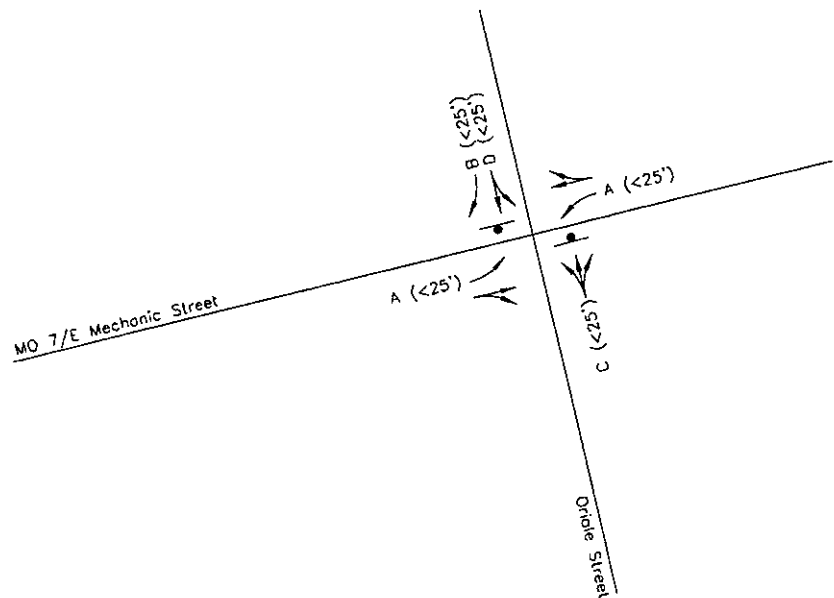
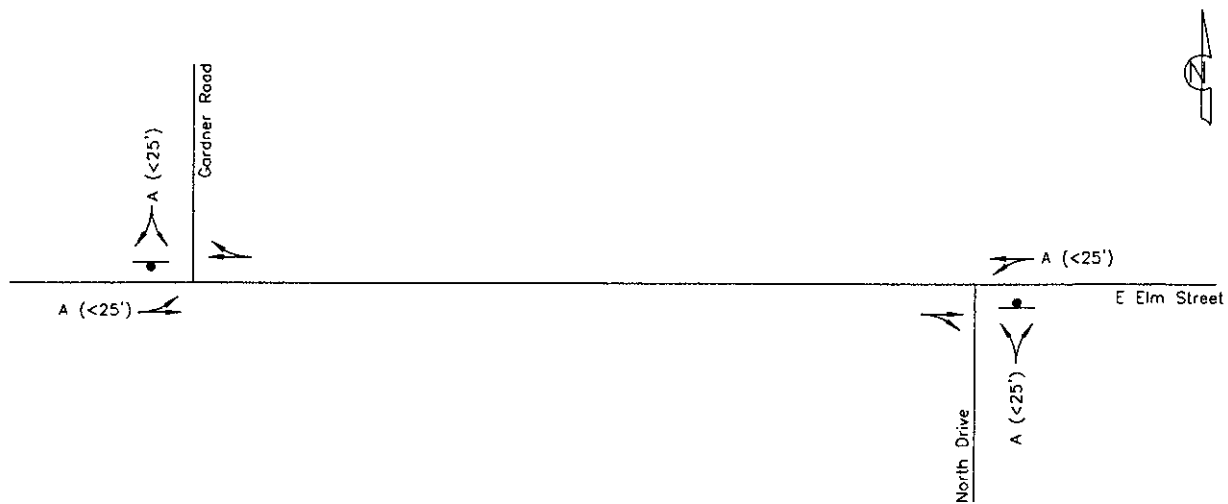
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 13



Priority
ENGINEERS



LEGEND

- HCM LOS (95th Percentile Queue in Vehicles)
- Stop Sign
- Ⓐ Traffic Signal LOS

Existing + Proposed Development
(with Senior Housing)
PM Peak Hour Lane Configurations
& Levels of Service

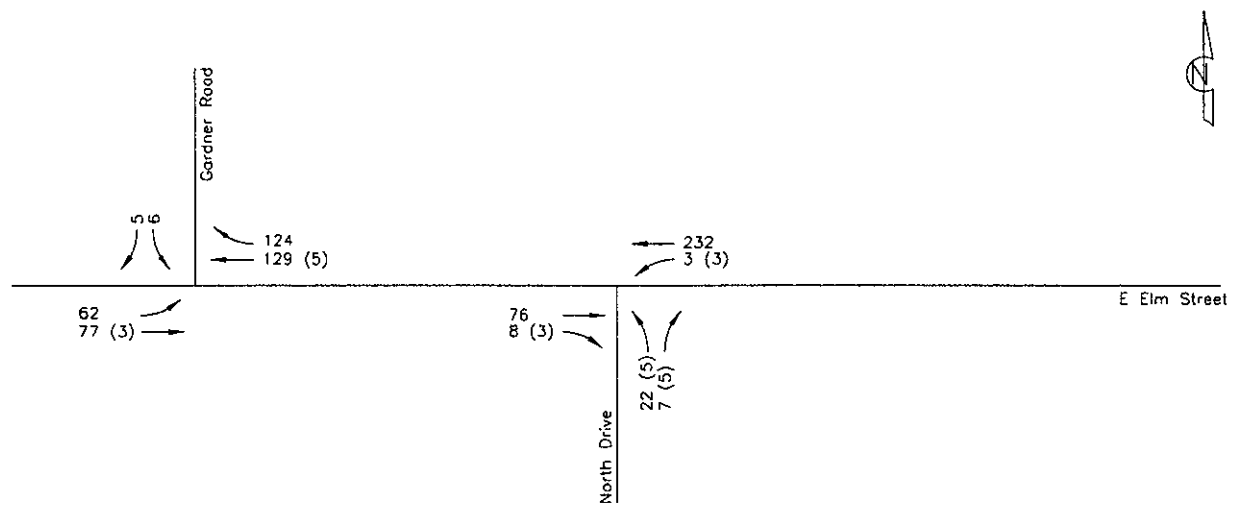
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 14



Priority
ENGINEERS



LEGEND



Total Volume (New Trips)

Future (2043)
(with Library)
AM Peak Hour Traffic Volumes

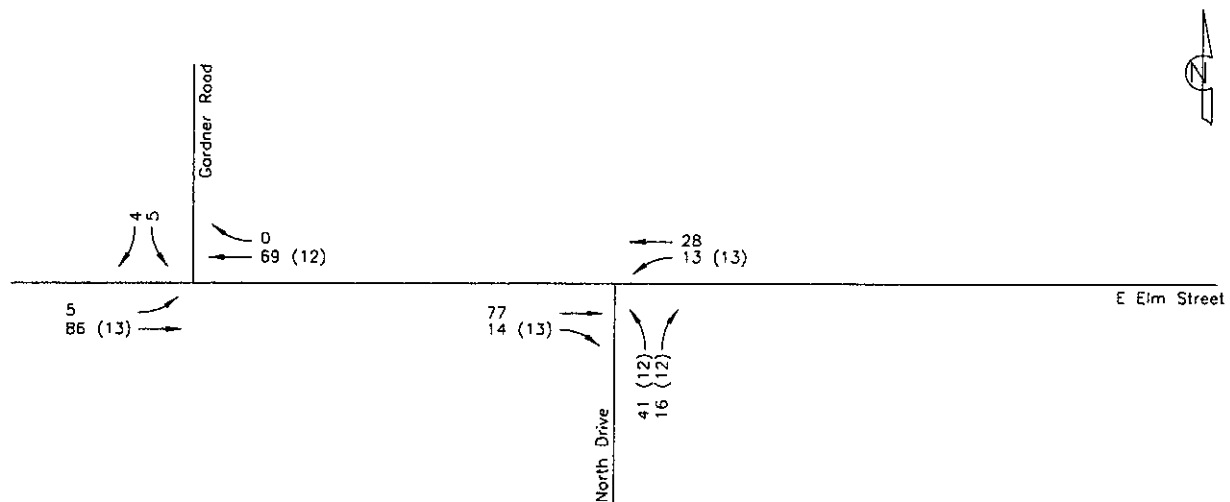
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 15



Priority
ENGINEERS



LEGEND

Three parallel arrows pointing right: Total Volume (New Trips)

Future (2043)
(with Library)
PM Peak Hour Traffic Volumes

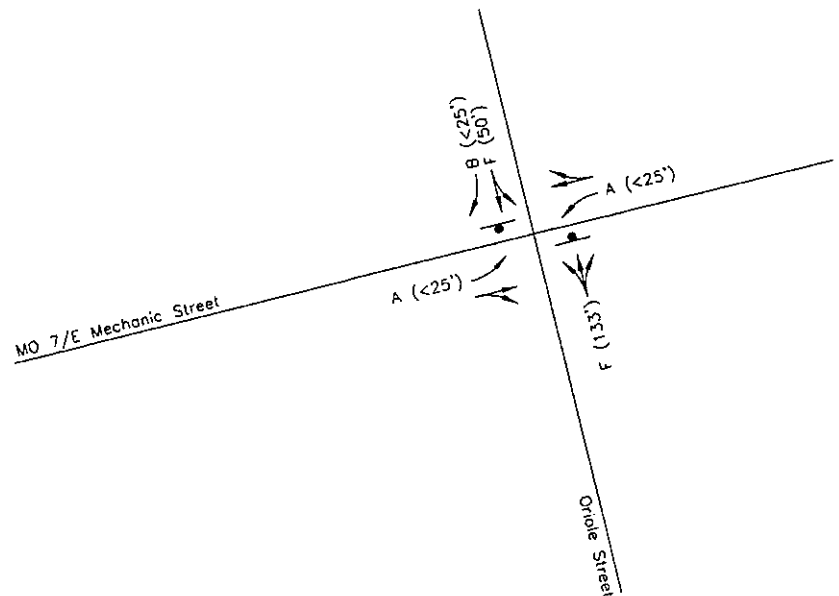
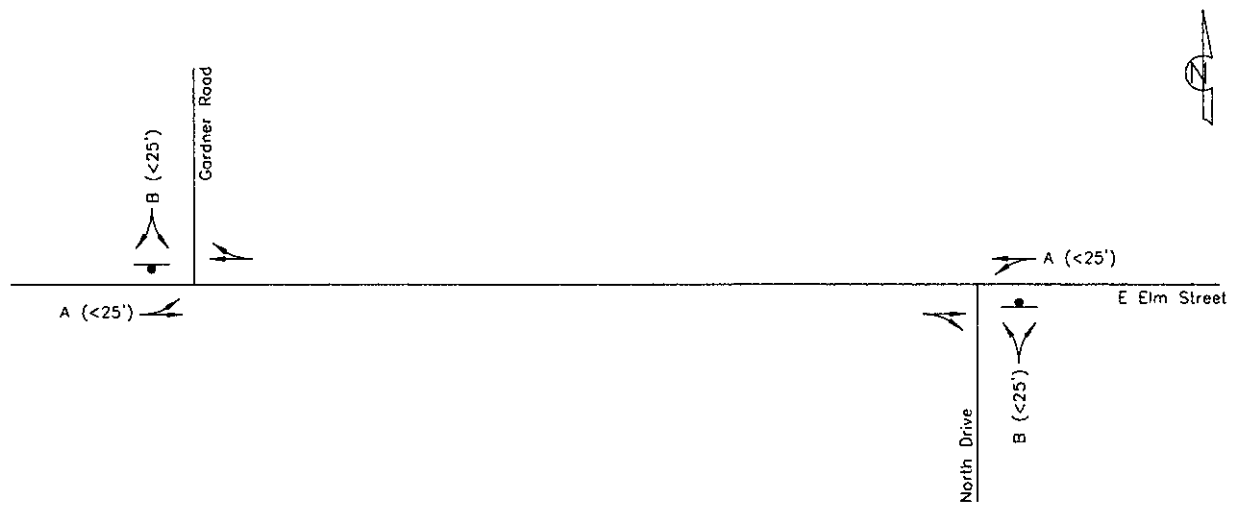
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 16



Priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Future (2043)
(with Library)
AM Peak Hour Lane Configurations
& Levels of Service

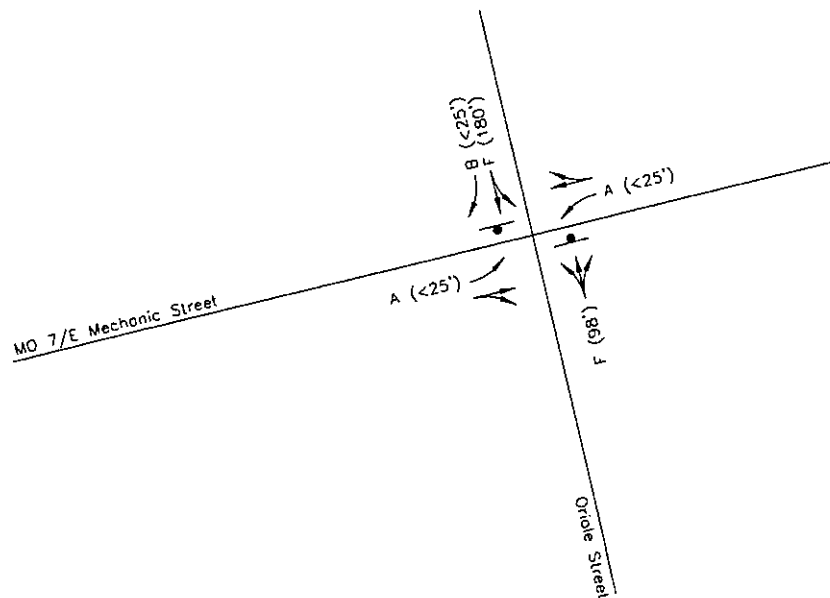
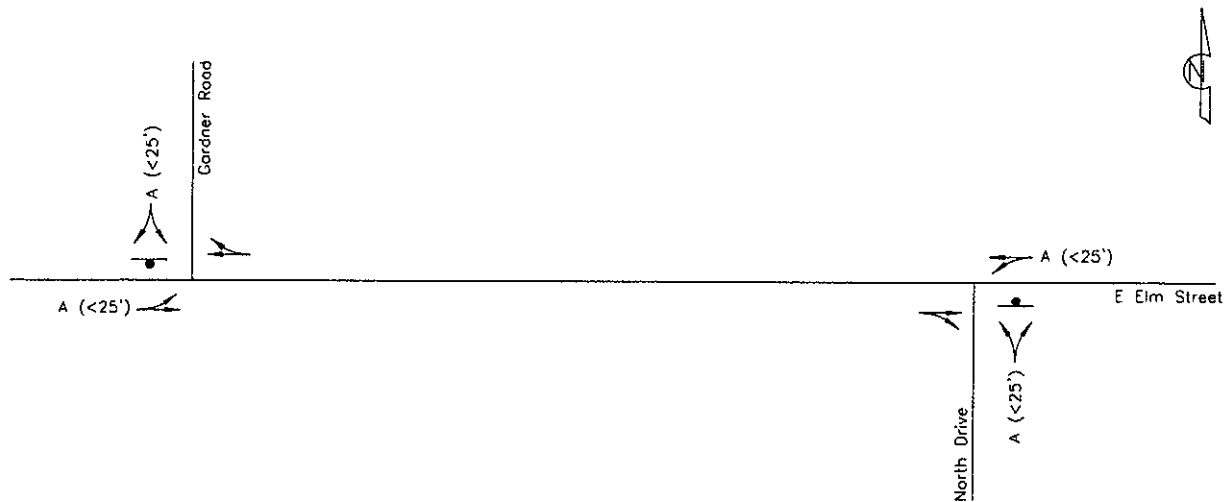
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 17



Priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Future (2043)
(with Library)
PM Peak Hour Lane Configurations
& Levels of Service

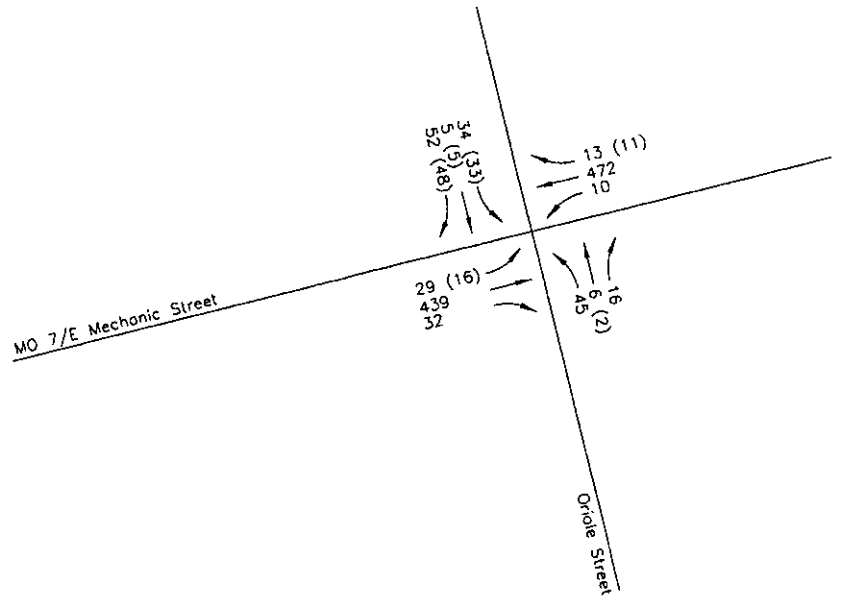
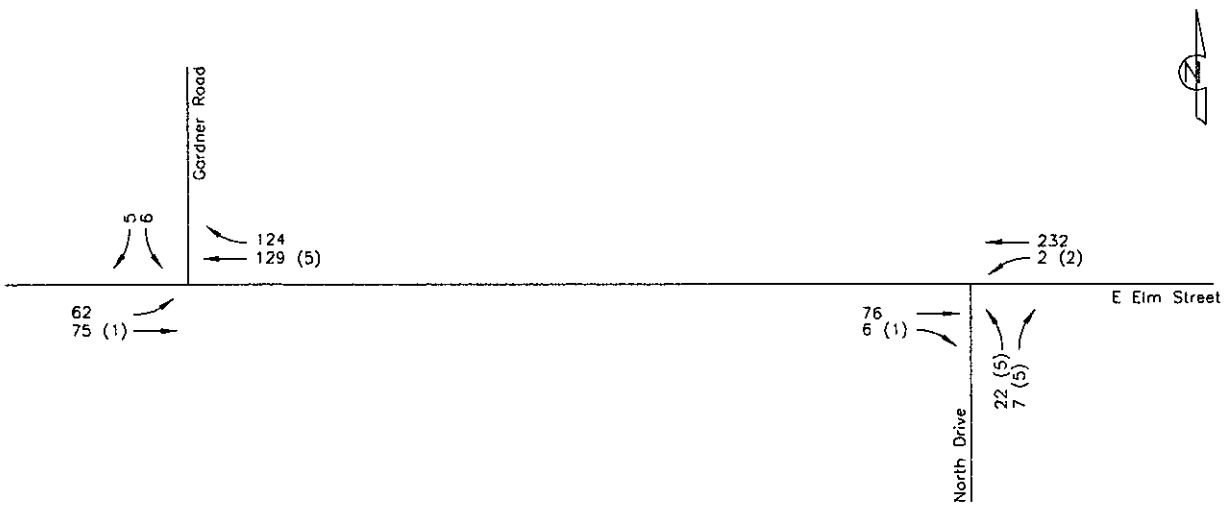
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 18



Priority
ENGINEERS



LEGEND

 Total Volume (New Trips)

Future (2043)
(with Senior Housing)
AM Peak Hour Traffic Volumes

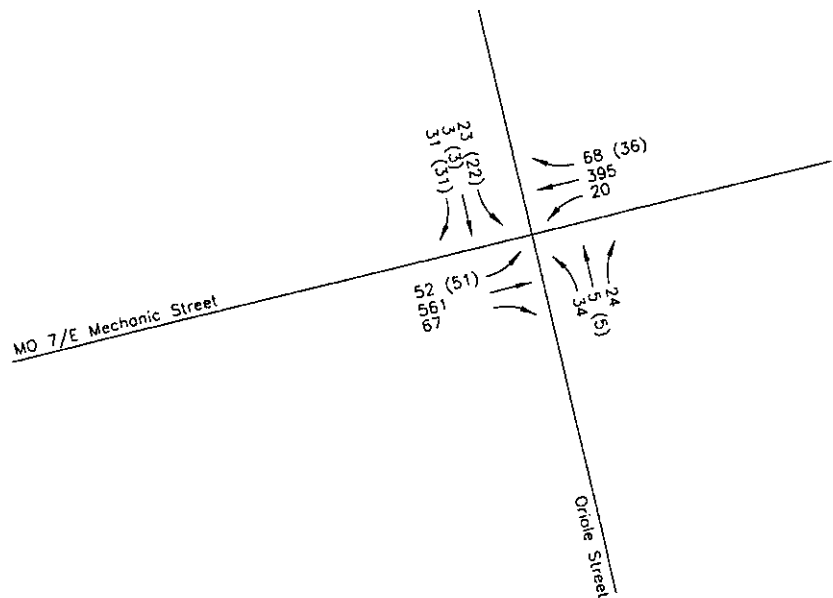
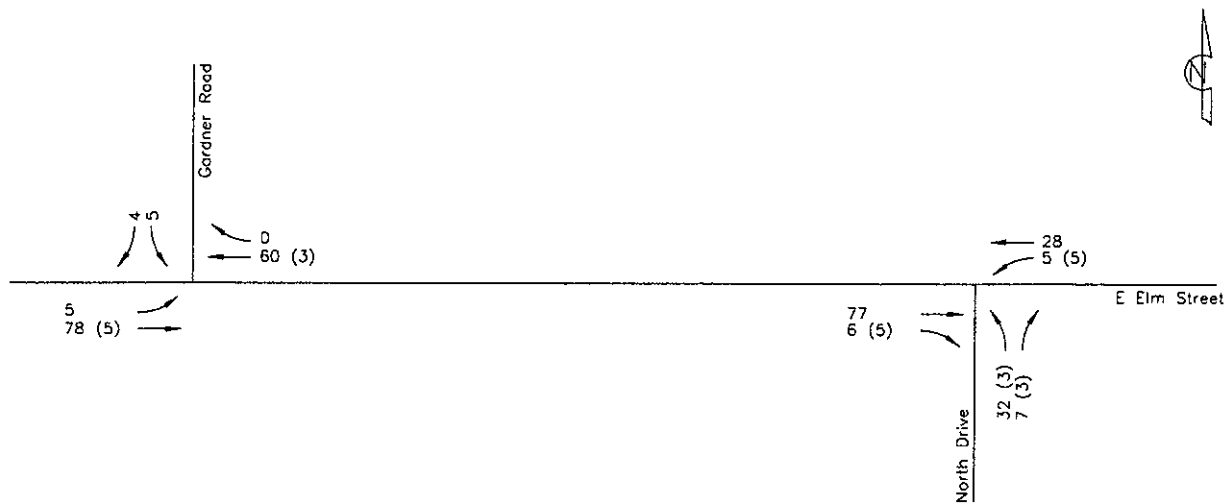
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 19



Priority
ENGINEERS



LEGEND

Total Volume (New Trips)

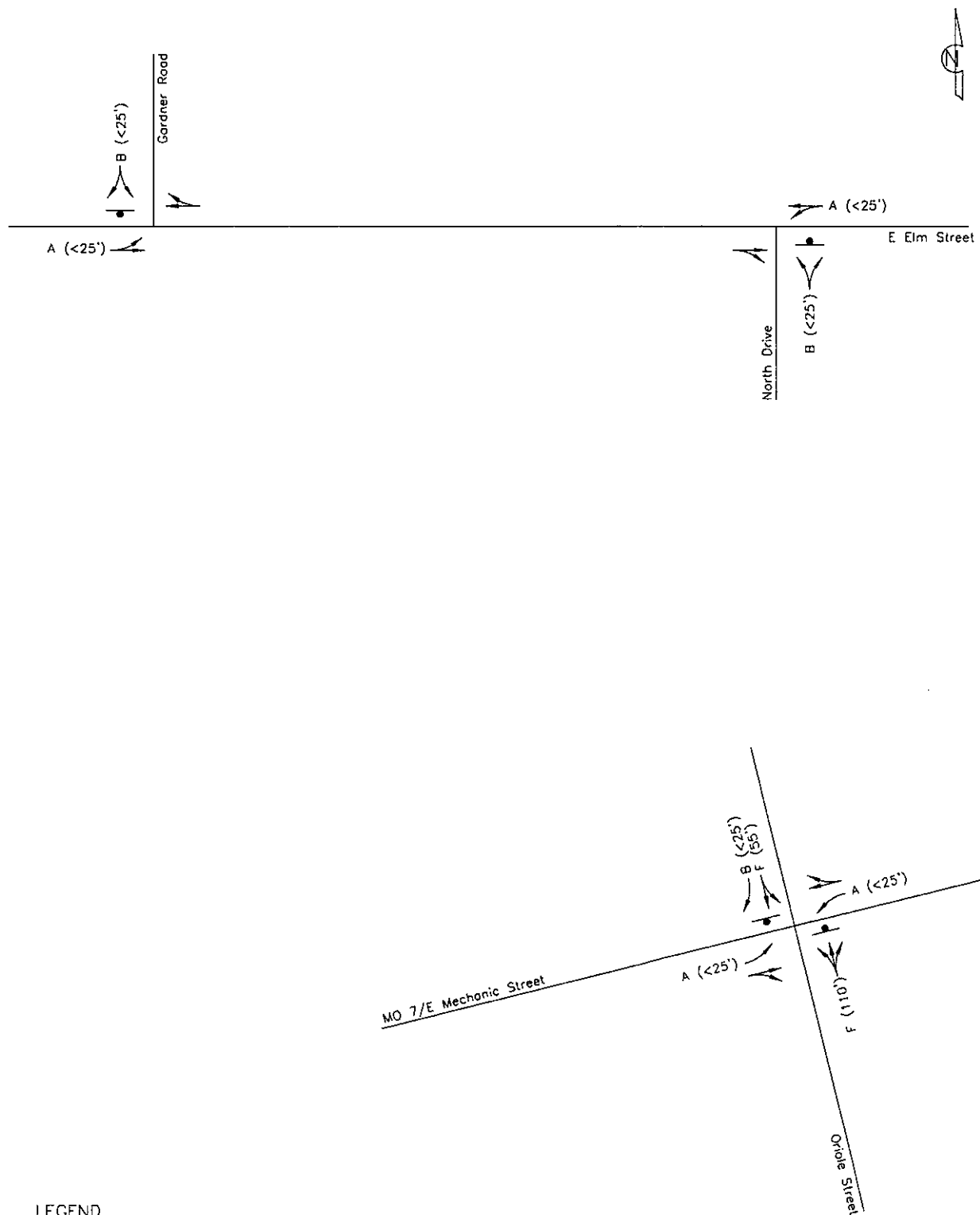
Future (2043)
 (with Senior Housing)
 PM Peak Hour Traffic Volumes

Gardens of
 Harrisonville
 Harrisonville, MO

No Scale

Figure 20





LEGEND

- HCM LOS (95th Percentile Queue in Vehicles)
- ⊞ Stop Sign
- Ⓐ Traffic Signal LOS

Future (2043)
(with Senior Housing)
AM Peak Hour Lane Configurations
& Levels of Service

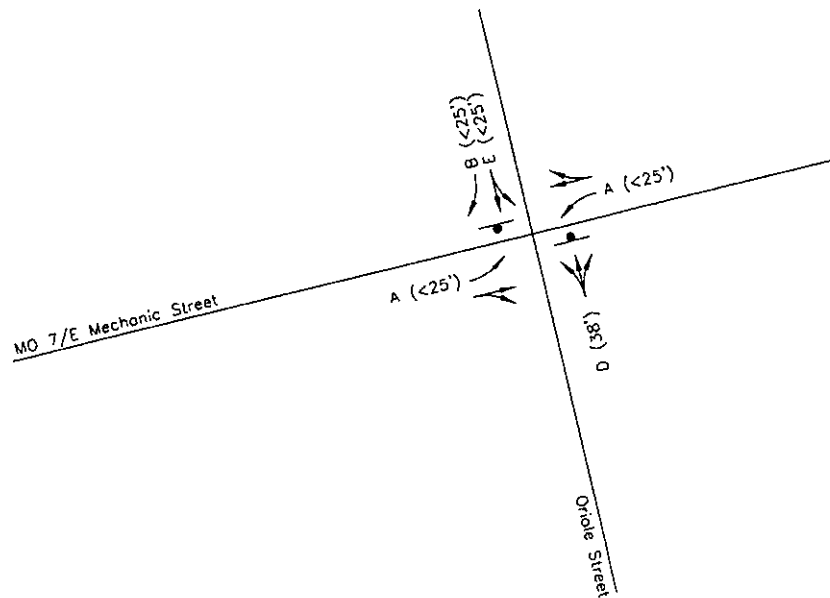
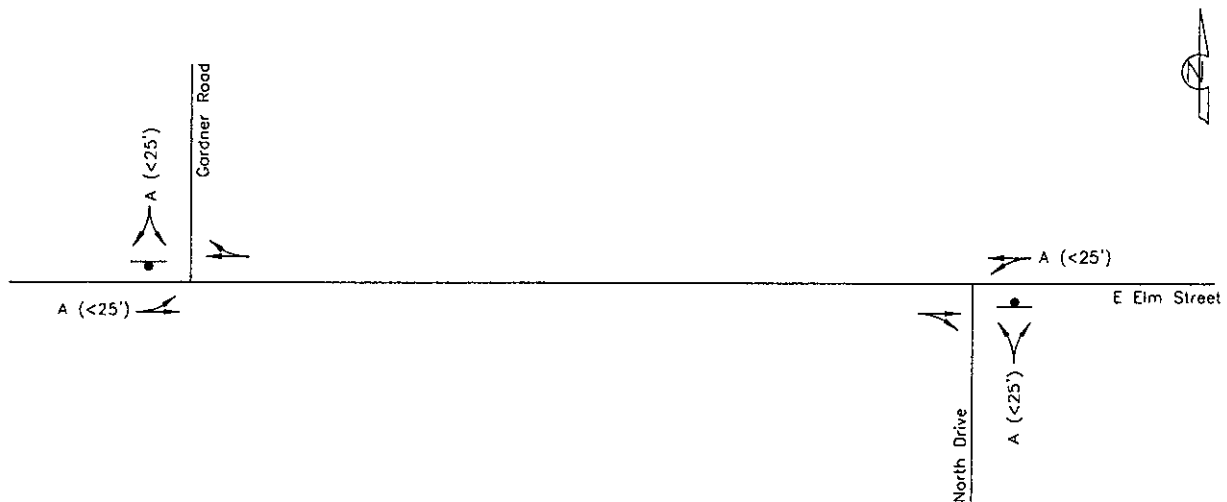
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 21



Priority
ENGINEERS



LEGEND

-  HCM LOS (95th Percentile Queue in Vehicles)
-  Stop Sign
-  Traffic Signal LOS

Future (2043)
(with Senior Housing)
PM Peak Hour Lane Configurations
& Levels of Service

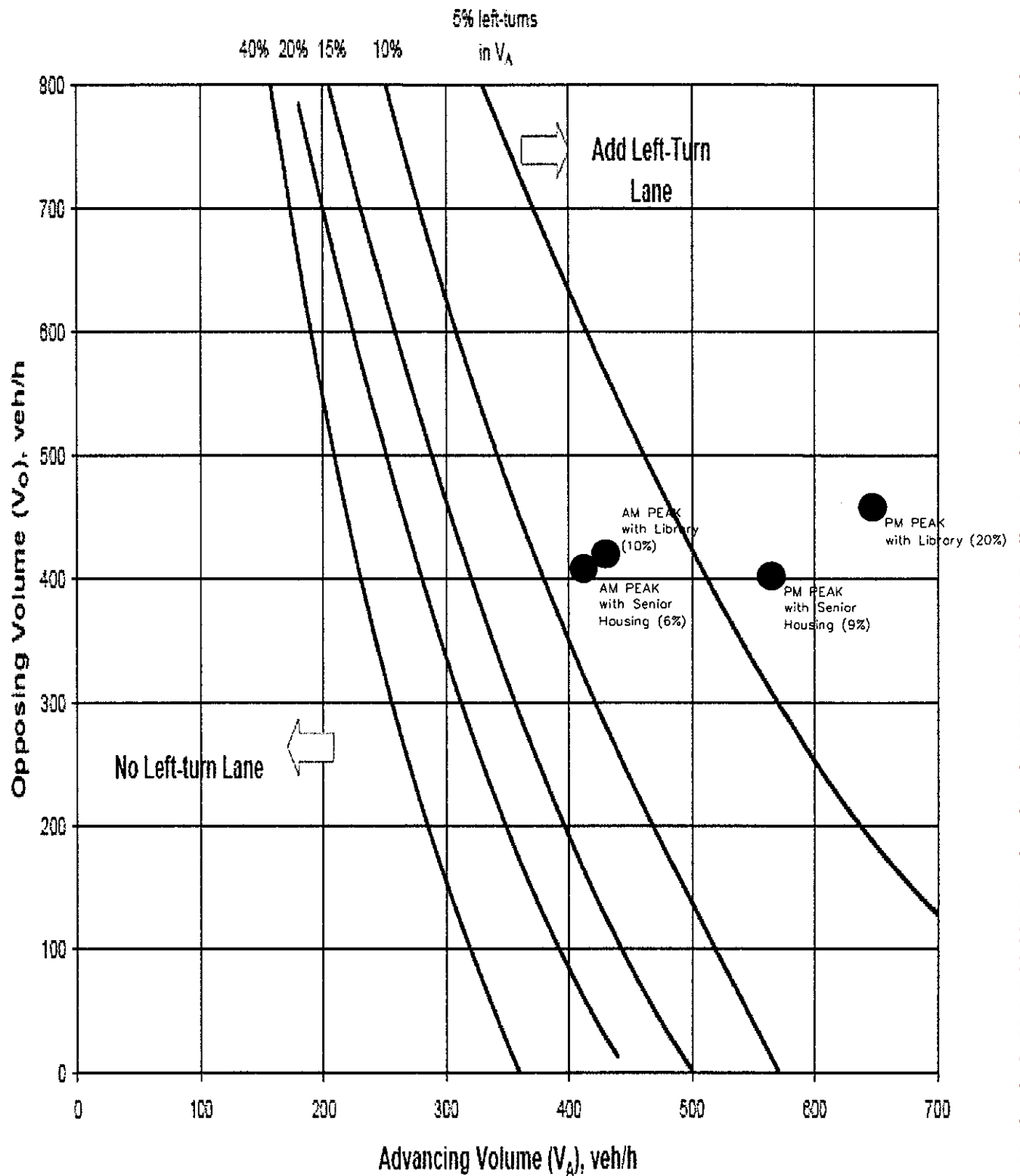
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 22



priority
ENGINEERS



Left Turn Lane Guidelines for
Two-Lane Roads less than
or equal to 40mph
(MoDOT EPG 940.9.1)

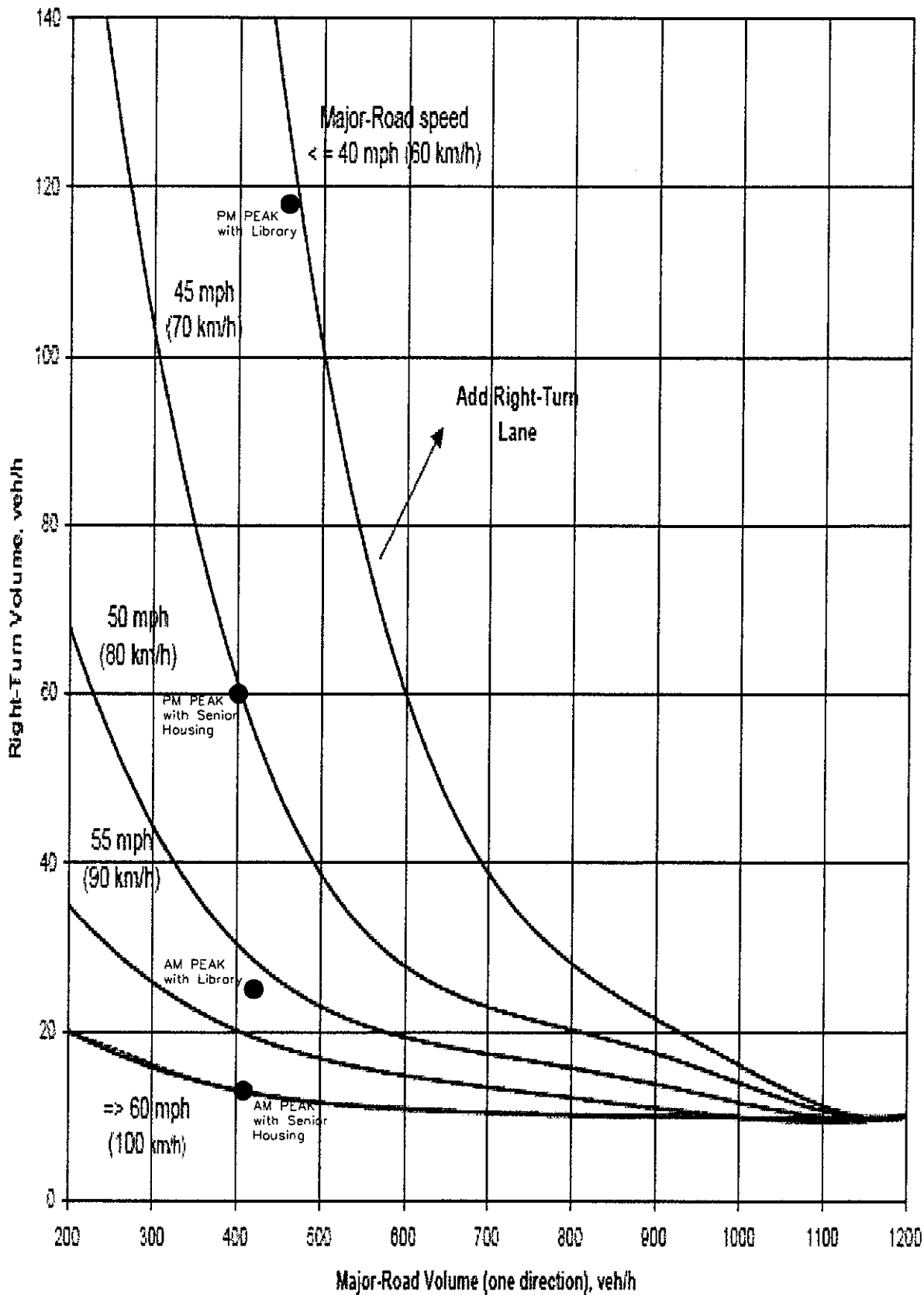
Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 23



priority
ENGINEERS



Right Turn Lane Guidelines for
Two-Lane Roadways
(MoDOT EPG 940.9.8)

Gardens of
Harrisonville
Harrisonville, MO

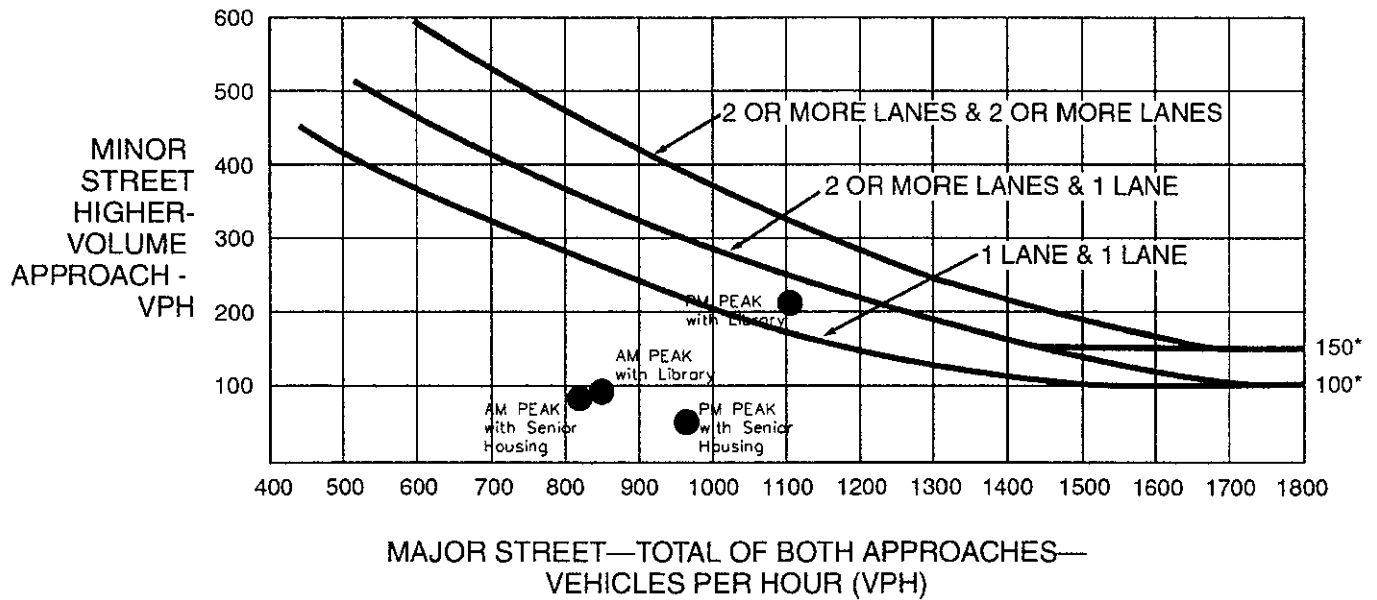
No Scale

Figure 24



Priority
ENGINEERS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Peak Hour Signal Warrant
(MO 7 & Oriole)

Gardens of
Harrisonville
Harrisonville, MO

No Scale

Figure 25



Priority
ENGINEERS

APPENDIX II

Peak Hour Traffic Counts

Synchro Reports

Existing AM Peak Hour	Pages 1-3
Existing PM Peak Hour	Pages 4-6
Existing + Proposed Development (with Library) AM Peak Hour	Pages 7-9
Existing + Proposed Development (with Library) PM Peak Hour	Pages 10-12
Existing + Proposed Development (with Senior Housing) AM Peak Hour	Pages 13-15
Existing + Proposed Development (with Senior Housing) PM Peak Hour	Pages 16-18
Future (2043) (with Library) AM Peak Hour	Pages 19-21
Future (2043) (with Library) PM Peak Hour	Pages 22-24
Future (2043) (with Senior Housing) AM Peak Hour	Pages 25-27
Future (2043) (with Senior Housing) PM Peak Hour	Pages 28-30

Elm Street & Cass Career Center Drive

Start Time	Southbound			Westbound			Northbound			Eastbound			Totals	
	Left	Through	Right	Peds	Left	Through	Right	Peds	Bikes	Left	Through	Right		
7:00	2		1			24	21	2	0	1	17	4	0	74
7:15	0		0		38	53	53	1	0	8	12	24	2	137
7:30	0		1		26	23	1	1	2	2	18	20	1	96
7:45	3		2		18	5	5	0	0	0	4	13	0	43
8:00	1		1		13	0	0	0	0	2	3	5	1	26
8:15	2		1		5	3	3	0	0	0	2	10	1	302
8:30	1		2		15	1	1	0	0	0	4	6	0	189
8:45	0		1		8	0	0	0	0	0	2	17	0	883
Totals	5	0	4	0	102	102	102	4	1	11	51	61	3	1203
Trucks	2				6		3					5		1117
Percentage														117
														883
														24
														122
														902
														PHF: 0.64

Mechanic Street & Oriole Street

Start Time	Southbound			Westbound			Northbound			Eastbound			Totals
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:00	1	105	0	12	0	4	2	79	4	0	0	0	207
7:15	5	118	1	11	2	5	8	128	6	0	0	3	288
7:30	1	78	1	9	1	3	1	73	7	1	1	0	176
7:45	1	86	0	5	0	1	0	80	9	0	0	0	182
8:00	2	96	0	10	2	4	0	62	2	0	0	1	169
8:15	1	82	0	10	0	3	0	65	5	0	0	1	167
8:30	5	117	0	8	0	2	0	97	9	0	0	0	238
8:45	4	114	0	11	0	3	0	84	5	0	0	0	221
Totals	8	387	2	37	3	13	11	360	26	1	1	0	853
Trucks	2	8		1				12					
Percentage		2%											PHF: 0.74

Elm Street & Cass Career Center Drive

Start Time	Southbound			Westbound			Northbound			Eastbound		
	Peds	Left	Through	Right	Left	Through	Right	Peds	Left	Through	Right	Totals
16:00	2	2	11	3	2	0	0	0	1	15	1	37
16:15	1	2	12	0	1	0	0	2	2	11	0	31
16:30	3	0	16	0	2	0	0	4	0	12	0	37
16:45	1	1	11	0	0	0	0	0	3	16	0	32
17:00	0	0	8	0	3	0	0	0	0	10	0	21
17:15	0	2	12	0	0	0	0	3	1	22	0	40
17:30	0	2	21	0	0	1	0	0	1	13	0	38
17:45	2	0	20	1	3	2	0	3	0	9	0	40
Totals	4	0	47	0	5	0	0	7	4	60	0	130
Trucks			1									
Percentage			2%									

PHF= 0.81

Mechanic Street & Oriole Street

Start Time	Southbound			Westbound			Northbound			Eastbound		
	Peds	Left	Through	Right	Peds	Left	Through	Right	Peds	Left	Through	Totals
16:00	1	5	79	0	0	0	101	6	0	0	1	206
16:15	0	6	86	0	0	0	109	9	0	0	0	220
16:30	0	3	92	1	0	0	114	14	0	0	0	236
16:45	0	6	75	0	0	0	122	13	0	0	0	231
17:00	0	4	83	0	0	1	103	16	0	0	0	893
17:15	0	3	74	25	1	0	121	12	1	1	0	219
17:30	0	6	82	0	0	0	83	11	0	0	0	246
17:45	0	5	82	0	0	0	81	12	0	0	0	192
Totals	0	16	324	26	1	1	460	55	0	1	0	932
Trucks			6				5					
Percentage			2%				1%	2%				

PHF= 0.95

5: Elm Street & Cass Career Drive

Existing AM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	51	61	102	102	5	4
Future Vol, veh/h	51	61	102	102	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	2	8	6	3	40	2
Mvmt Flow	80	95	159	159	8	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	318	0	0 494 239
Stage 1	-	-	- 239 -
Stage 2	-	-	- 255 -
Critical Hdwy	4.12	-	- 6.8 6.22
Critical Hdwy Stg 1	-	-	- 5.8 -
Critical Hdwy Stg 2	-	-	- 5.8 -
Follow-up Hdwy	2.218	-	- 3.86 3.318
Pot Cap-1 Maneuver	1242	-	- 473 800
Stage 1	-	-	- 719 -
Stage 2	-	-	- 707 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1242	-	- 441 800
Mov Cap-2 Maneuver	-	-	- 441 -
Stage 1	-	-	- 670 -
Stage 2	-	-	- 707 -

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1242	-	-	-	-	551
HCM Lane V/C Ratio	0.064	-	-	-	-	0.026
HCM Control Delay (s)	8.1	0	-	-	-	11.7
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1

6: Marshall Street & Elm Street

Existing AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Traffic Vol, veh/h	62	4	0	190	14	2
Future Vol, veh/h	62	4	0	190	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	11	2	2	5	2	2
Mvmt Flow	97	6	0	297	22	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	103
Stage 1	-	-	100
Stage 2	-	-	297
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1489	608
Stage 1	-	-	924
Stage 2	-	-	754
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1489	608
Mov Cap-2 Maneuver	-	-	608
Stage 1	-	-	924
Stage 2	-	-	754

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLt1	EBT	EBR	WBL	WBT
Capacity (veh/h)	637	-	-	1489	-
HCM Lane V/C Ratio	0.039	-	-	-	-
HCM Control Delay (s)	10.9	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Existing AM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	11	360	26	8	387	2	37	3	13	1	0	3
Future Vol, veh/h	11	360	26	8	387	2	37	3	13	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	3	2	2	2	2	3	2	2	2	2	2
Mvmt Flow	15	486	35	11	523	3	50	4	18	1	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	526	0	0	521	0	0	1083	1082	504	1092	1098	525
Stage 1	-	-	-	-	-	-	534	534	-	547	547	-
Stage 2	-	-	-	-	-	-	549	548	-	545	551	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1041	-	-	1045	-	-	194	217	568	192	213	552
Stage 1	-	-	-	-	-	-	528	524	-	521	517	-
Stage 2	-	-	-	-	-	-	518	517	-	523	515	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1041	-	-	1045	-	-	187	209	568	179	206	552
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	209	-	179	206	-
Stage 1	-	-	-	-	-	-	517	514	-	511	509	-
Stage 2	-	-	-	-	-	-	506	509	-	493	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	28.3	15.1
HCM LOS	D	D	D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	1041	-	-	1045	-	-	363
HCM Lane V/C Ratio	0.318	0.014	-	-	0.01	-	-	0.015
HCM Control Delay (s)	28.3	8.5	0	-	8.5	0	-	15.1
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0

5: Elm Street & Cass Career Drive

Existing PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	4	60	47	0	4	3
Future Vol, veh/h	4	60	47	0	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	74	58	0	5	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	58	0	0	142	58
Stage 1	-	-	-	58	-
Stage 2	-	-	-	84	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1546	-	-	851	1008
Stage 1	-	-	-	965	-
Stage 2	-	-	-	939	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	848	1008
Mov Cap-2 Maneuver	-	-	-	848	-
Stage 1	-	-	-	962	-
Stage 2	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1546	-	-	-	-	910
HCM Lane V/C Ratio	0.003	-	-	-	-	0.009
HCM Control Delay (s)	7.3	0	-	-	-	9
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0

6: Marshall Street & Elm Street

Existing PM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	
Traffic Vol, veh/h	63	1	0	23	24	3
Future Vol, veh/h	63	1	0	23	24	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	1	0	28	30	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	79	107 79
Stage 1	-	-	-	79 -
Stage 2	-	-	-	28 -
Critical Hdwy	-	-	4.12	6.42 6.22
Critical Hdwy Stg 1	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	3.518 3.318
Pot Cap-1 Maneuver	-	-	1519	891 981
Stage 1	-	-	-	944 -
Stage 2	-	-	-	995 -
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1519	891 981
Mov Cap-2 Maneuver	-	-	-	891 -
Stage 1	-	-	-	944 -
Stage 2	-	-	-	995 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	900	-	-	1519	-
HCM Lane V/C Ratio	0.037	-	-	-	-
HCM Control Delay (s)	9.2	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Existing PM Peak Hour

Intersection												
Int Delay, s/veh	1.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	1	460	55	16	324	26	28	0	20	1	0	0
Future Vol, veh/h	1	460	55	16	324	26	28	0	20	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	484	58	17	341	27	29	0	21	1	0	0

Major/Minor	Major:1		Major:2		Minor:1		Minor:2					
Conflicting Flow All	368	0	0	542	0	0	904	917	513	915	933	355
Stage 1	-	-	-	-	-	-	515	515	-	389	389	-
Stage 2	-	-	-	-	-	-	389	402	-	526	544	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2,218	-	-	2,218	-	-	3,518	4,018	3,318	3,518	4,018	3,318
Poi Cap-1 Maneuver	1191	-	-	1027	-	-	258	272	561	253	266	689
Stage 1	-	-	-	-	-	-	543	535	-	635	608	-
Stage 2	-	-	-	-	-	-	635	600	-	535	519	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1191	-	-	1027	-	-	254	266	561	239	260	689
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	266	-	239	260	-
Stage 1	-	-	-	-	-	-	542	534	-	634	595	-
Stage 2	-	-	-	-	-	-	622	587	-	514	518	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	17.9	20.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	1191	-	-	1027	-	-	239
HCM Lane V/C Ratio	0.154	0.001	-	-	0.016	-	-	0.004
HCM Control Delay (s)	17.9	8	0	-	8.6	0	-	20.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %ile Q(veh)	0.5	0	-	-	0.1	-	-	0

5: Elm Street & Cass Career Drive

Existing + Proposed Development (with Library) AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	51	64	107	102	5	4
Future Vol, veh/h	51	64	107	102	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	2	8	6	3	40	2
Mvmt Flow	80	100	167	159	8	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	326	0	0	507	247
Stage 1	-	-	-	247	-
Stage 2	-	-	-	260	-
Critical Hdwy	4.12	-	-	6.8	6.22
Critical Hdwy Stg 1	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	5.8	-
Follow-up Hdwy	2.218	-	-	3.86	3.318
Pot Cap-1 Maneuver	1234	-	-	464	792
Stage 1	-	-	-	713	-
Stage 2	-	-	-	703	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1234	-	-	432	792
Mov Cap-2 Maneuver	-	-	-	432	-
Stage 1	-	-	-	664	-
Stage 2	-	-	-	703	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1234	-	-	-	541	-
HCM Lane V/C Ratio	0.065	-	-	-	0.026	-
HCM Control Delay (s)	8.1	0	-	-	11.8	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	-

6: Marshall Street & Elm Street

Existing + Proposed Development (with Library) AM Peak Hour

Intersection						
Int Delay, s/veh	1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Traffic Vol, veh/h	62	7	3	190	19	7
Future Vol, veh/h	62	7	3	190	19	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	11	2	2	5	2	2
Mvmt Flow	97	11	5	297	30	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	108
Stage 1	-	-	103
Stage 2	-	-	307
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1483	598
Stage 1	-	-	921
Stage 2	-	-	746
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1483	596
Mov Cap-2 Maneuver	-	-	596
Stage 1	-	-	921
Stage 2	-	-	743

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBL11	EBT	EBR	WBL	WBT
Capacity (veh/h)	663	-	-	1483	-
HCM Lane V/C Ratio	0.061	-	-	0.003	-
HCM Control Delay (s)	10.8	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street Existing + Proposed Development (with Library) AM Peak Hour

Intersection

Int Delay, s/veh 5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	360	26	8	387	25	37	7	13	36	5	54
Future Vol, veh/h	44	360	26	8	387	25	37	7	13	36	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	3	2	2	2	2	3	2	2	2	2	2
Mvmt Flow	59	486	35	11	523	34	50	9	18	49	7	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	557	0	0	521	0	0	1224	1201	504	1197	1201	540
Stage 1	-	-	-	-	-	-	622	622	-	562	562	-
Stage 2	-	-	-	-	-	-	602	579	-	635	639	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1014	-	-	1045	-	-	155	185	568	163	185	542
Stage 1	-	-	-	-	-	-	473	479	-	512	510	-
Stage 2	-	-	-	-	-	-	485	501	-	467	470	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1014	-	-	1045	-	-	123	172	568	143	172	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	172	-	143	172	-
Stage 1	-	-	-	-	-	-	446	451	-	482	504	-
Stage 2	-	-	-	-	-	-	410	495	-	417	443	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.2	48.7	26.2
HCM LOS	E	E	E	D

Minor Lane/Major Mvmt	NBLn1	EBLn1	EBLn2	EBR	WBL	WBLn1	WBLn2	WBR	SBLn1	SBLn2
Capacity (veh/h)	156	1014	-	-	1045	-	-	146	542	
HCM Lane V/C Ratio	0.494	0.059	-	-	0.01	-	-	0.379	0.135	
HCM Control Delay (s)	48.7	8.8	-	-	8.5	-	-	44	12.7	
HCM Lane LOS	E	A	-	-	A	-	-	E	B	
HCM 95th %tile Q(veh)	2.4	0.2	-	-	0	-	-	1.6	0.5	

5: Elm Street & Cass Career Drive

Existing + Proposed Development (with Library) PM Peak Hour

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	↰
Traffic Vol, veh/h	4	73	59	0	4	3
Future Vol, veh/h	4	73	59	0	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	90	73	0	5	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	73	0	0 173 73
Stage 1	-	-	- 73 -
Stage 2	-	-	- 100 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1527	-	- 817 989
Stage 1	-	-	- 950 -
Stage 2	-	-	- 924 -
Platoon blocked, %	-	-	- -
Mov Cap-1 Maneuver	1527	-	- 815 989
Mov Cap-2 Maneuver	-	-	- 815 -
Stage 1	-	-	- 947 -
Stage 2	-	-	- 924 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1527	-	-	-	881
HCM Lane V/C Ratio	0.003	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

6: Marshall Street & Elm Street

Existing + Proposed Development (with Library) PM Peak Hour

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	63	14	13	23	36	15
Future Vol, veh/h	63	14	13	23	36	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	17	16	28	44	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	147	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	60	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1499	-	845	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1499	-	836	971
Mov Cap-2 Maneuver	-	-	-	-	836	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	952	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	872	-	-	1499	-
HCM Lane V/C Ratio	0.072	-	-	0.011	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street Existing + Proposed Development (with Library) PM Peak Hour

Intersection												
Int Delay, s/veh	11.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑		↰	↑		↰	↑		↰	↑	
Traffic Vol, veh/h	132	460	55	16	324	118	28	13	20	84	12	119
Future Vol, veh/h	132	460	55	16	324	118	28	13	20	84	12	119
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	484	58	17	341	124	29	14	21	88	13	125

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	465	0	0	542	0	0	1297	1290	513	1246	1257	403
Stage 1	-	-	-	-	-	-	791	791	-	437	437	-
Stage 2	-	-	-	-	-	-	506	499	-	809	820	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1096	-	-	1027	-	-	139	163	561	151	171	647
Stage 1	-	-	-	-	-	-	383	401	-	598	579	-
Stage 2	-	-	-	-	-	-	549	544	-	374	389	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1096	-	-	1027	-	-	94	140	561	120	147	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	140	-	120	147	-
Stage 1	-	-	-	-	-	-	334	350	-	522	569	-
Stage 2	-	-	-	-	-	-	426	535	-	302	340	-

Approach	EB	WB	NE	SB
HCM Control Delay, s	1.8	0.3	49.2	53.7
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	143	1096	-	-	1027	-	-	123	647
HCM Lane V/C Ratio	0.449	0.127	-	-	0.016	-	-	0.822	0.194
HCM Control Delay (s)	49.2	8.8	-	-	8.6	-	-	105.6	11.9
HCM Lane LOS	E	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	2	0.4	-	-	0.1	-	-	4.9	0.7

5: Elm Street & Cass Career Drive

Existing + Proposed Development (with Senior Housing) AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	51	62	107	102	5	4
Future Vol, veh/h	51	62	107	102	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	2	8	6	3	40	2
Mvmt Flow	80	97	167	159	8	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	326	0	0	504	247
Stage 1	-	-	-	247	-
Stage 2	-	-	-	257	-
Critical Hdwy	4.12	-	-	6.8	6.22
Critical Hdwy Stg 1	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	5.8	-
Follow-up Hdwy	2.218	-	-	3.86	3.318
Pot Cap-1 Maneuver	1234	-	-	466	792
Stage 1	-	-	-	713	-
Stage 2	-	-	-	705	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1234	-	-	434	792
Mov Cap-2 Maneuver	-	-	-	434	-
Stage 1	-	-	-	664	-
Stage 2	-	-	-	705	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1234	-	-	-	543	-
HCM Lane V/C Ratio	0.065	-	-	-	0.026	-
HCM Control Delay (s)	8.1	0	-	-	11.8	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	-

6: Marshall Street & Elm Street

Existing + Proposed Development (with Senior Housing) AM Peak Hour

Intersection						
Int Delay, s/veh	1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Traffic Vol, veh/h	62	5	2	190	19	7
Future Vol, veh/h	62	5	2	190	19	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	11	2	2	5	2	2
Mvmt Flow	97	8	3	297	30	11

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	0	0	105	0	404	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1486	-	603	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1486	-	602	954
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	668	-	-	1486	-
HCM Lane V/C Ratio	0.061	-	-	0.002	-
HCM Control Delay (s)	10.7	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street + Proposed Development (with Senior Housing) AM Peak Hour

Intersection

Int Delay, s/veh 4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	27	360	26	8	387	13	37	5	13	34	5	51
Future Vol, veh/h	27	360	26	8	387	13	37	5	13	34	5	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	3	2	2	2	2	3	2	2	2	2	2
Mvmt Flow	36	486	35	11	523	18	50	7	18	46	7	69

Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	541	0	0	521	0	0	1168	1139	504	1142	1147	532
Stage 1	-	-	-	-	-	-	576	576	-	554	554	-
Stage 2	-	-	-	-	-	-	592	563	-	588	593	-
Critical Hdwy	4.12	-	4.12	-	-	-	7.13	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	2.218	-	-	-	3.527	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	1045	-	-	-	170	201	568	177	199	547
Stage 1	-	-	-	-	-	-	501	502	-	517	514	-
Stage 2	-	-	-	-	-	-	491	509	-	495	493	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1028	-	1045	-	-	-	140	192	568	161	190	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	192	-	161	190	-
Stage 1	-	-	-	-	-	-	483	484	-	499	508	-
Stage 2	-	-	-	-	-	-	419	503	-	456	476	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	39.6	23.1
HCM LOS	E	E	E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	176	1028	-	-	1045	-	-	164	547
HCM Lane V/C Ratio	0.422	0.035	-	-	0.01	-	-	0.321	0.126
HCM Control Delay (s)	39.6	8.6	-	-	8.5	-	-	37	12.5
HCM Lane LOS	E	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	1.9	0.1	-	-	0	-	-	1.3	0.4

5: Elm Street & Cass Career Drive

Existing + Proposed Development (with Senior Housing) PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	4	65	50	0	4	3
Future Vol, veh/h	4	65	50	0	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	80	62	0	5	4
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	62	0	0	152	62	
Stage 1	-	-	-	62	-	
Stage 2	-	-	-	90	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1541	-	-	840	1003	
Stage 1	-	-	-	961	-	
Stage 2	-	-	-	934	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1541	-	-	837	1003	
Mov Cap-2 Maneuver	-	-	-	837	-	
Stage 1	-	-	-	958	-	
Stage 2	-	-	-	934	-	
Approach	EB	WB	SB			
HCM Control Delay, s	0.4	0	9			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1541	-	-	-	901	
HCM Lane V/C Ratio	0.003	-	-	-	0.01	
HCM Control Delay (s)	7.3	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

6: Marshall Street & Elm Street

Existing + Proposed Development (with Senior Housing) PM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	
Traffic Vol, veh/h	63	6	5	23	27	6
Future Vol, veh/h	63	6	5	23	27	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	7	6	28	33	7

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	85	122
Stage 1	-	-	82
Stage 2	-	-	40
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1512	873
Stage 1	-	-	941
Stage 2	-	-	982
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1512	870
Mov Cap-2 Maneuver	-	-	870
Stage 1	-	-	941
Stage 2	-	-	978

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	888	-	-	1512	-
HCM Lane V/C Ratio	0.046	-	-	0.004	-
HCM Control Delay (s)	9.2	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street Feeding + Proposed Development (with Senior Housing) PM Peak Hour

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱	↰	↱	↰	↱
Traffic Vol, veh/h	52	460	55	16	324	62	28	5	20	23	3	31
Future Vol, veh/h	52	460	55	16	324	62	28	5	20	23	3	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	484	58	17	341	65	29	5	21	24	3	33

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	406	0	0	542	0	0	1049	1063	513	1044	1060	374
Stage 1	-	-	-	-	-	-	623	623	-	408	408	-
Stage 2	-	-	-	-	-	-	426	440	-	636	652	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1153	-	-	1027	-	-	205	223	561	207	224	672
Stage 1	-	-	-	-	-	-	474	478	-	620	597	-
Stage 2	-	-	-	-	-	-	606	578	-	466	464	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1153	-	-	1027	-	-	183	209	561	186	210	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	209	-	186	210	-
Stage 1	-	-	-	-	-	-	451	455	-	590	587	-
Stage 2	-	-	-	-	-	-	564	568	-	422	442	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3	23.6	18.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	249	1153	-	-	1027	-	-	188	672
HCM Lane V/C Ratio	0.224	0.047	-	-	0.016	-	-	0.146	0.049
HCM Control Delay (s)	23.6	8.3	-	-	8.6	-	-	27.4	10.6
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-	-	0.5	0.2

5: Elm Street & Cass Career Drive

Future (2043) (with Library) AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	62	77	129	124	6	5
Future Vol, veh/h	62	77	129	124	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	2	8	6	3	40	2
Mvmt Flow	97	120	202	194	9	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	396	0	0	613	299
Stage 1	-	-	-	299	-
Stage 2	-	-	-	314	-
Critical Hdwy	4.12	-	-	6.8	6.22
Critical Hdwy Stg 1	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	5.8	-
Follow-up Hdwy	2.218	-	-	3.86	3.318
Pot Cap-1 Maneuver	1163	-	-	400	741
Stage 1	-	-	-	673	-
Stage 2	-	-	-	662	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1163	-	-	364	741
Mov Cap-2 Maneuver	-	-	-	364	-
Stage 1	-	-	-	613	-
Stage 2	-	-	-	662	-

Approach	EB	WB	SB
HCM Control Delay, s	3.7	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1163	-	-	-	-	474
HCM Lane V/C Ratio	0.083	-	-	-	-	0.036
HCM Control Delay (s)	8.4	0	-	-	-	12.9
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0.1

6: Marshall Street & Elm Street

Future (2043) (with Library) AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	2	2
Traffic Vol, veh/h	76	8	3	232	22	7
Future Vol, veh/h	76	8	3	232	22	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	11	2	2	5	2	2
Mvmt Flow	119	13	5	363	34	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	132
Stage 1	-	-	126
Stage 2	-	-	373
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1453	531
Stage 1	-	-	900
Stage 2	-	-	696
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1453	529
Mov Cap-2 Maneuver	-	-	529
Stage 1	-	-	900
Stage 2	-	-	693

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLt	EBT	EBR	WBL	WBT
Capacity (veh/h)	590	-	-	1453	-
HCM Lane V/C Ratio	0.077	-	-	0.003	-
HCM Control Delay (s)	11.6	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Future (2043) (with Library) AM Peak Hour

Intersection												
Int Delay, s/veh	11.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	46	439	32	10	472	25	45	8	16	36	5	55
Future Vol, veh/h	46	439	32	10	472	25	45	8	16	36	5	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	3	2	2	2	2	3	2	2	2	2	2
Mvmt Flow	62	593	43	14	638	34	61	11	22	49	7	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	672	0	0	636	0	0	1463	1439	615	1438	1443	655
Stage 1	-	-	-	-	-	-	739	739	-	683	683	-
Stage 2	-	-	-	-	-	-	724	700	-	755	760	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	919	-	-	947	-	-	106	133	491	111	132	466
Stage 1	-	-	-	-	-	-	408	424	-	439	449	-
Stage 2	-	-	-	-	-	-	415	441	-	401	414	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	919	-	-	947	-	-	80	122	491	93	121	466
Mov Cap-2 Maneuver	-	-	-	-	-	-	80	122	-	93	121	-
Stage 1	-	-	-	-	-	-	381	396	-	410	442	-
Stage 2	-	-	-	-	-	-	338	434	-	348	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.2	136.8	44.2
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	104	919	-	-	947	-	-	96	466
HCM Lane V/C Ratio	0.897	0.068	-	-	0.014	-	-	0.577	0.159
HCM Control Delay (s)	136.8	9.2	-	-	8.9	-	-	84.4	14.2
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	5.3	0.2	-	-	0	-	-	2.7	0.6

5: Elm Street & Cass Career Drive

Future (2043) (with Library) PM Peak Hour

Intersection

Int Delay, s/veh 0.7

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↰	↱		↰	↱
Traffic Vol, veh/h	5	86	69	0	5	4
Future Vol, veh/h	5	86	69	0	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	106	85	0	6	5

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	85	0	-	0	203	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	118	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1512	-	-	-	786	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1512	-	-	-	783	974
Mov Cap-2 Maneuver	-	-	-	-	783	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	907	-

Approach EB WB SB

HCM Control Delay, s	0.4	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBL SBR

Capacity (veh/h)	1512	-	-	-	858	
HCM Lane V/C Ratio	0.004	-	-	-	0.013	
HCM Control Delay (s)	7.4	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

6: Marshall Street & Elm Street

Future (2043) (with Library) PM Peak Hour

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	
Traffic Vol, veh/h	77	14	13	28	41	16
Future Vol, veh/h	77	14	13	28	41	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	17	16	35	51	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	112	0	171
Stage 1	-	-	-	-	104
Stage 2	-	-	-	-	67
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1478	-	819
Stage 1	-	-	-	-	920
Stage 2	-	-	-	-	956
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1478	-	810
Mov Cap-2 Maneuver	-	-	-	-	810
Stage 1	-	-	-	-	920
Stage 2	-	-	-	-	945

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	845	-	-	1478	-
HCM Lane V/C Ratio	0.083	-	-	0.011	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Future (2043) (with Library) PM Peak Hour

Intersection												
Int Delay, s/veh	21.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	132	561	67	20	395	124	34	13	24	84	12	119
Future Vol, veh/h	132	561	67	20	395	124	34	13	24	84	12	119
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	139	591	71	21	416	131	36	14	25	88	13	125

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	547	0	0	662	0	0	1498	1494	627	1448	1464	482
Stage 1	-	-	-	-	-	-	905	905	-	524	524	-
Stage 2	-	-	-	-	-	-	593	589	-	924	940	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1022	-	-	927	-	-	101	123	484	109	128	584
Stage 1	-	-	-	-	-	-	331	355	-	537	530	-
Stage 2	-	-	-	-	-	-	492	495	-	323	342	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1022	-	-	927	-	-	64	104	484	~ 82	108	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	104	-	~ 82	108	-
Stage 1	-	-	-	-	-	-	286	307	-	464	518	-
Stage 2	-	-	-	-	-	-	369	484	-	253	295	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0.3	105.8	117.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Capacity (veh/h)	101	1022	-	-	927	-	-	85	584
HCM Lane V/C Ratio	0.74	0.136	-	-	0.023	-	-	1.189	0.214
HCM Control Delay (s)	105.8	9.1	-	-	9	-	-	246.3	12.8
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	3.9	0.5	-	-	0.1	-	-	7.2	0.8

Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

5: Elm Street & Cass Career Drive

Future (2043) (with Senior Housing) AM Peak Hour

Intersection

Int Delay, s/veh 1.7

Movement

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	62	75	129	124	6	5
Future Vol, veh/h	62	75	129	124	6	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	2	8	6	3	40	2
Mvmt Flow	97	117	202	194	9	8

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	396	0	610
Stage 1	-	-	299
Stage 2	-	-	311
Critical Hdwy	4.12	-	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	2.218	-	3.86
Pot Cap-1 Maneuver	1163	-	401
Stage 1	-	-	673
Stage 2	-	-	665
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1163	-	365
Mov Cap-2 Maneuver	-	-	365
Stage 1	-	-	613
Stage 2	-	-	665

Approach

	EB	WB	SB
HCM Control Delay, s	3.8	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1163	-	-	-	474	-
HCM Lane V/C Ratio	0.083	-	-	-	0.036	-
HCM Control Delay (s)	8.4	0	-	-	12.9	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	-	0.1	-

6: Marshall Street & Elm Street

Future (2043) (with Senior Housing) AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1			1	1	
Traffic Vol, veh/h	76	6	2	232	22	7
Future Vol, veh/h	76	6	2	232	22	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	64	64	64	64
Heavy Vehicles, %	11	2	2	5	2	2
Mvmt Flow	119	9	3	363	34	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	493	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1458	-	535	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1458	-	533	927
Mov Cap-2 Maneuver	-	-	-	-	533	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	697	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		11.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	594		-	-	1458	-
HCM Lane V/C Ratio	0.076		-	-	0.002	-
HCM Control Delay (s)	11.6		-	-	7.5	0
HCM Lane LOS	B		-	-	A	A
HCM 95th %tile Q(veh)	0.2		-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Future (2043) (with Senior Housing) AM Peak Hour

Intersection												
Int Delay, s/veh	9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	439	32	10	472	13	45	6	16	34	5	52
Future Vol, veh/h	29	439	32	10	472	13	45	6	16	34	5	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	2	3	2	2	2	2	3	2	2	2	2	2
Mvmt Flow	39	593	43	14	638	18	61	8	22	46	7	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	656	0	0	636	0	0	1407	1377	615	1383	1389	647
Stage 1	-	-	-	-	-	-	693	693	-	675	675	-
Stage 2	-	-	-	-	-	-	714	684	-	708	714	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.13	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.527	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	931	-	-	947	-	-	116	145	491	121	142	471
Stage 1	-	-	-	-	-	-	432	445	-	444	453	-
Stage 2	-	-	-	-	-	-	421	449	-	426	435	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	931	-	-	947	-	-	91	137	491	106	134	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	137	-	106	134	-
Stage 1	-	-	-	-	-	-	414	426	-	425	446	-
Stage 2	-	-	-	-	-	-	348	442	-	383	417	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	100.2	36.2
HCM LOS	F	F	F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	117	931	-	-	947	-	-	109	471
HCM Lane V/C Ratio	0.774	0.042	-	-	0.014	-	-	0.484	0.149
HCM Control Delay (s)	100.2	9	-	-	8.9	-	-	65.7	14
HCM Lane LOS	F	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	4.4	0.1	-	-	0	-	-	2.2	0.5

5: Elm Street & Cass Career Drive

Future (2043) (with Senior Housing) PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↰		↰	↰
Traffic Vol, veh/h	5	78	60	0	5	4
Future Vol, veh/h	5	78	60	0	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	96	74	0	6	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	74	0	182
Stage 1	-	-	74
Stage 2	-	-	108
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1526	-	807
Stage 1	-	-	949
Stage 2	-	-	916
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1526	-	804
Mov Cap-2 Maneuver	-	-	804
Stage 1	-	-	945
Stage 2	-	-	916

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	1526	-	-	-	877	-
HCM Lane V/C Ratio	0.004	-	-	-	0.013	-
HCM Control Delay (s)	7.4	0	-	-	9.2	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %ile Q(veh)	0	-	-	-	0	-

6: Marshall Street & Elm Street

Future (2043) (with Senior Housing) PM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	77	6	5	28	32	7
Future Vol, veh/h	77	6	5	28	32	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	7	6	35	40	9

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	102
Stage 1	-	-	99
Stage 2	-	-	47
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1490	846
Stage 1	-	-	925
Stage 2	-	-	975
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1490	843
Mov Cap-2 Maneuver	-	-	843
Stage 1	-	-	925
Stage 2	-	-	971

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBL1	EBT	EBR	WBL	WBT
Capacity (veh/h)	861	-	-	1490	-
HCM Lane V/C Ratio	0.056	-	-	0.004	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

7: Oriole Street/Marshall Street & Mechanic Street

Future (2043) (with Senior Housing) PM Peak Hour

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑		↰	↑			↰			↑	↰
Traffic Vol, veh/h	52	561	67	20	395	68	34	5	24	23	3	31
Future Vol, veh/h	52	561	67	20	395	68	34	5	24	23	3	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	140	-	-	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	591	71	21	416	72	36	5	25	24	3	33

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	488	0	0	662	0	0	1249	1267	627	1246	1266	452
Stage 1	-	-	-	-	-	-	737	737	-	494	494	-
Stage 2	-	-	-	-	-	-	512	530	-	752	772	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1075	-	-	927	-	-	150	169	484	151	169	608
Stage 1	-	-	-	-	-	-	410	425	-	557	546	-
Stage 2	-	-	-	-	-	-	545	527	-	402	409	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1075	-	-	927	-	-	132	157	484	132	157	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	157	-	132	157	-
Stage 1	-	-	-	-	-	-	389	403	-	529	533	-
Stage 2	-	-	-	-	-	-	501	515	-	357	388	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	0.7		0.4		34.7		23.8
HCM LOS					D		C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	186	1075	-	-	927	-	-	134	608
HCM Lane V/C Ratio	0.357	0.051	-	-	0.023	-	-	0.204	0.054
HCM Control Delay (s)	34.7	8.5	-	-	9	-	-	38.6	11.3
HCM Lane LOS	D	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	1.5	0.2	-	-	0.1	-	-	0.7	0.2

City of Harrisonville, MO
Tuesday, July 11, 2023

Chapter 405. Zoning Regulations

ARTICLE III. Zoning Districts — Generally

Section 405.065. Planned Zoning Districts.

[Ord. No. 1825, 5-13-1991]

Some of the districts hereinbefore set forth shall have a separate and distinct counterpart known and herein referred to as a planned district. A planned district shall be for the purpose of permitting and regulating the uses heretofore permitted in the equivalent district and further provide for and encourage latitude and flexibility in the location of buildings, structures, roads, drives, variations in yards and open spaces all subsequent to approval of the plan by local officials. The purpose is to allow development of tracts of land to their fullest extent and at the same time observe the general intent and spirit of these regulations.

Planned Districts shall be as follows:

District "EP"	Planned Estate District
District "RP-1"	Planned Single-Family Residential District
District "RP-1M"	Planned Manufactured Home Park District
District "RP-2"	Planned Two-Family Residential District
District "RP-3"	Planned Cluster or Garden Type Residential District
District "RP-4"	Planned Medium Density Apartment District
District "CP-O"	Planned Non-Retail Business District
District "CP-1"	Planned Local Business District
District "CBDP-1"	Planned Downtown Core Business District
District "CBDP-2"	Planned Downtown Fringe Business District
District "CP-2"	Planned Service Business District
District "MP-1"	Planned Limited Industrial District
District "MP-2"	Planned General Industrial District

Section 405.070. Objectives of Planned Zoning Districts.

[Ord. No. 1825, 5-13-1991]

- A. The zoning of land in Harrisonville to one (1) of the planned districts ("EP" to "MP-2", inclusive) shall be for the purpose of requiring orderly development on a quality level generally equal to that of the equivalent standard zoning districts, but permitting variations from the normal and established development techniques. The use of planned zoning procedures is intended to encourage large scale development tracts, innovative and imaginative site planning, conservation of natural resources and minimum waste of land. The following are specific conditions and objectives of planned zoning:

1. A proposal to rezone land to a planned district shall be subject to the same criteria relative to compliance with the general development plan, land use policies, neighborhood compatibility, adequacy of streets and utilities and other elements, as is normal in rezoning deliberations.
2. The submittal by the developer and the approval by the City of development plans represents a firm commitment by the developer that development will indeed follow the approved plans in concept, intensity of use, aesthetic levels and quantities of open space.
3. Deviations in yard requirements, setbacks and relationship between buildings are acceptable and may be approved within the limits set out in "Standards of Development" in this Section, if it is deemed that other amenities or conditions will be gained to the extent that an equal or higher quality of development will result than under standard zoning procedures.
4. Residential areas will be planned and developed in a manner that will produce more useable open space, better recreational opportunities, safer and more attractive neighborhoods than under standard zoning and development techniques.
5. Commercial areas will be planned and developed so as to result in attractive, viable and safe centers and clusters, as opposed to strip patterns along thoroughfares. Control of vehicular access, architectural quality, landscaping and signs will be exercises to soften the impact on nearby residential neighborhoods and to assure minimum adverse effects on the street system and other services of the community.
6. The developer will be given latitude in using innovative techniques in the development of land not feasible under application of standard zoning requirements.
7. Planned zoning shall not be used as a refuge from the requirements of the equivalent district as to intensity of land use, amount of open space or other established development criteria.
8. No use will be permitted in the planned district that is not clearly permitted in the equivalent district.
9. Any building or portion thereof may be owned in condominium under appropriate Missouri Statutes.

Section 405.075. Standard of Development in Planned Zoning Districts.

[Ord. No. 1825, 5-13-1991]

- A. The maximum height of buildings and structures shall be as set out in the equivalent district.
- B. The intensity of land use, the floor area and bulk of buildings, the concentration of population, the percentage of lot coverage, the amount of open space, light and air shall be generally equal to that required in the equivalent zoning district.
- C. The density of residential dwelling units, the parking requirements and the performance standards shall be the same as in the equivalent district.
- D. The permitted uses shall be the same as those permitted in the equivalent district, provided that limitations may be placed on the occupancy of certain premises, if such limitation is deemed essential to the health, safety or general welfare of the community.
- E. The Planning and Zoning Commission may, in the process of approving preliminary and final plans, approve deviations from the minimum standards in the equivalent district as follows:
 1. Setbacks of buildings and paved areas from a public street may be reduced to seventy-five percent (75%) of the ordinance requirement.

2. Setbacks of buildings and paved areas from a property line of the project (other than a street line) may be reduced to eighty-five percent (85%) of the ordinance requirement.
3. Side yards between buildings may be reduced to zero.
4. Setbacks of buildings and paved areas from a freeway right-of-way line may be reduced to five (5) feet.
5. A portion of the parking area required under this Chapter may remain unimproved until such time as the Board of Aldermen deems it must be improved to serve the demand adequately.

The foregoing deviations may be granted by the Planning and Zoning Commission only where there is ample evidence that said deviation will not adversely affect neighboring property, nor will it constitute the mere granting of a privilege. Reduction of setbacks or other open space shall be compensated by additional open space in other appropriate portions of the project. In all cases such deviations shall be in keeping with good land planning principles and must be specifically set out in the minutes of the Commission, as well as on plans and other exhibits in the record.

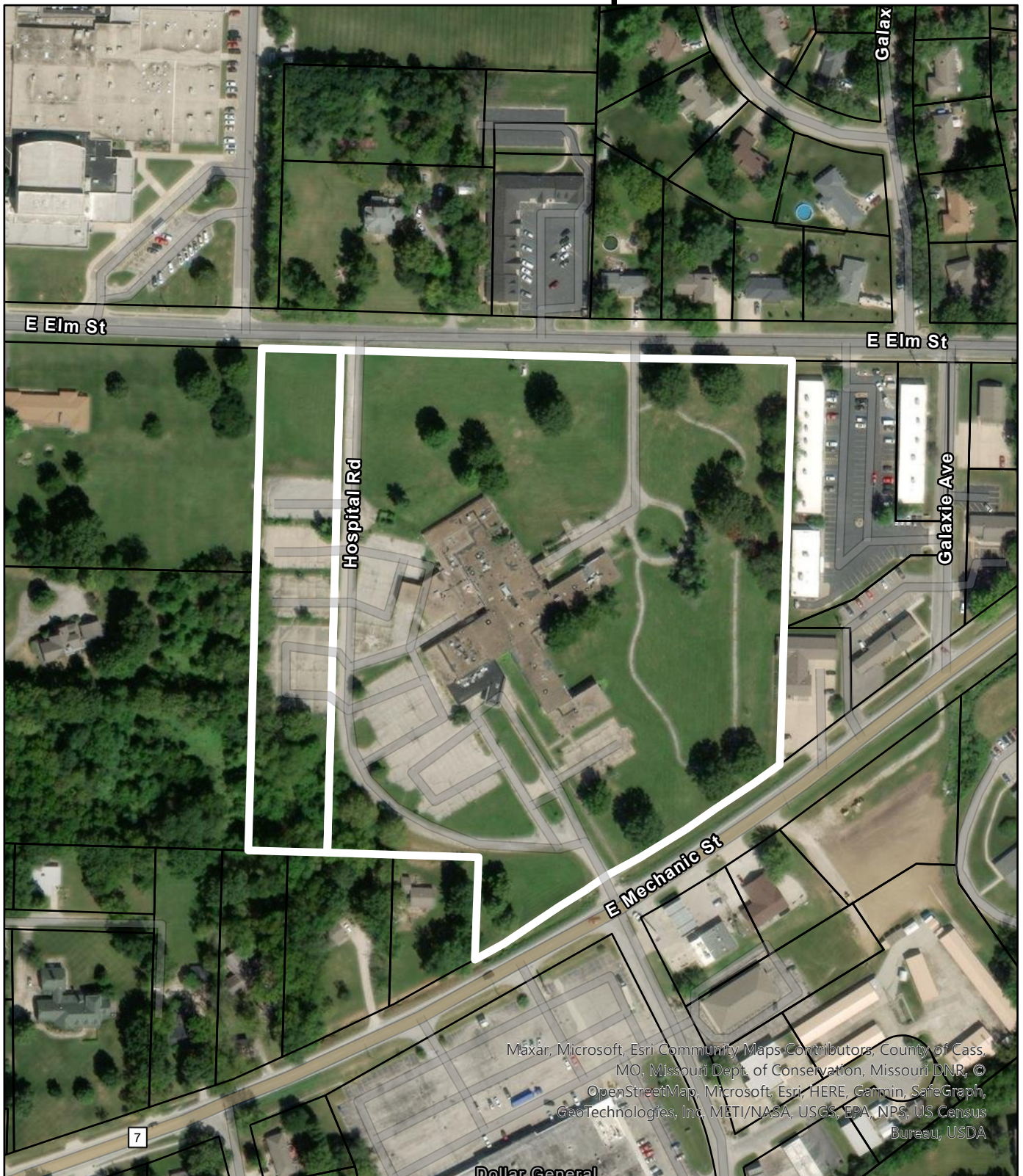
Zoning Map



Attachment: 1800 E Mechanic St PDP 7-20-23PZ Packet (Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living

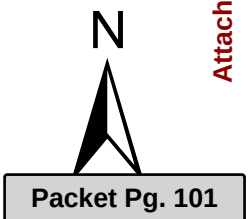
0 180 360 720 US Feet

Aerial Map



Attachment: 1800 E Mechanic St PDP 7-20-23PZ Packet (Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living

0 190 380 760 US Feet



STAFF REPORT

TO: Planning & Zoning Commission

FROM: Christina Stanton,

DATE: July 13, 2023

SUBJECT: Appl. #PREDEV-23-001- Prelim. Devel. Plan for Multi-Family and a Senior Living Facility - Considerat

Type of Item: *Approval*

B. Action Item (ID # 4580)

Appl. #PREDEV-23-001--Prelim. Devel. Plan for Multi-Family and a Senior Living Facility - Consideration