MAYOR & COUNCIL AGENDA COVER SHEET

MEETING DATE:

January 4, 2010

CALL TO PODIUM:

Eliza Voigt

RESPONSIBLE STAFF:

Greg Ossont, Director Planning and Code Administration

Lauren Pruss, Planning Director

Eliza Voigt, Planner

AGENDA ITEM:
(please check one)

	Presentation
	Proclamation/Certificate
	Appointment
X	Joint Public Hearing
	Historic District Commission
	Consent Item
	Ordinance
	Resolution
	Policy Discussion
	Work Session Discussion Item
	Other:

PUBLIC HEARING HISTORY:

(Please complete this section if agenda item is a public hearing)

Introduced	N/A
Advertised	12/16/09
	12/23/09
Hearing Date	1/4/10
Record Held Open	
Policy Discussion	

TITLE: SDP-09-001 JOINT PUBLIC HEARING

This application requests approval for a Schematic Development Plan (SDP-09-001) for a 410 unit multi-family residential building with a structured above-ground parking garage located at Clopper, Quince Orchard, and Firstfield Roads.

SUPPORTING BACKGROUND:

The applicant, JPI, represented by Mr. Malcolm Van de Riet II, and Mr. Jody Kline of Miller, Miller and Canby, has submitted an application, SDP-09-001, for the redevelopment of the 11-acre portion of the Orchard Pond Apartments site located at the intersection of Clopper Road and Quince Orchard Road. The SDP proposes a 410-unit multi-family residential building with a structured parking garage and entrance on Firstfield Road. The property is currently the location of the Orchard Pond Apartments, a medium-density residential complex containing 747 apartments constructed in the mid-1970s.

Please refer to the attached Preliminary Background Report which provides further discussion of the proposal for SDP-09-001.

This joint public hearing will be a consolidated hearing for both Z-312 and SDP-09-001.

Attachments:

SDP-09-001 Index of Memoranda and Exhibits

DESIRED OUTCOME: Hold public hearing

Staff recommends that the Planning Commission hold the record open until 5 PM, January 27, 2010, (23 days) with anticipated recommendation on February 3, 2010.

Staff recommends that the Mayor and City Council hold their records open until 5 PM, February 4, 2010, (31 days) with anticipated policy discussion on March 1, 2010.

MEMORANDUM TO: Mayor and City Council
Planning Commission

FROM: Eliza Voigt, Planner

DATE: January 4, 2010

SUBJECT: Preliminary Background Report: Applications Z-312 and SDP-09- 001, Orchard Pond

APPLICANT
JPI
8300 Greensboro Drive Suite 600
McLean, Virginia 22102

PROPERTY OWNER
893 Clopper Road Investors Corporation

TAX ACCOUNT NUMBERS
02899812, 02899823, 00820363, 01483581

REQUEST

This application requests rezoning (Z-312) 43.33 acres of land from the R-20 (Medium Density Residential) Zone to the MXD (Mixed Use Development) Zone in accordance with §24-196 (Map Amendments) and §24-160G.6 (Procedure for Application and Approval) of the City Code. The property is bounded by Clopper Road (MD 117), Quince Orchard Road (MD 124), and Metropolitan Grove Road and a State Highway Facility. Additionally, an application has been submitted for a Schematic Development Plan (SDP 09-001) for a 410 unit multi-family residential building with a structured above ground parking garage bounded by the portion of the property located at Clopper, Quince Orchard, and Firstfield Roads.

REQUIRED ACTIONS

Zoning Map Amendment Z312
The applicant is requesting a map amendment from the R-20 Zone to the MXD Zone, which is identified by §24-10A of the City Code as a floating zone. According to §24-10A(2) of the City Code:

> *(2) The approval of and placement of floating zones may only occur upon a finding by the city council that the application therefore:*

(a) Complies with the purposes and intent of the zone as stated in the zoning ordinance; and

(b) As applied will be compatible and harmonious with existing and planned land uses in the surrounding area.

Section 24-160D.10(a) states that the City Council may approve the MXD zoning and accompanying sketch plan when they find the following:

(1) The application meets or accomplishes the purposes, objectives, and minimum standards and requirements of the zone; and
(2) The application is in accord with recommendations in the applicable master plan for the area and is consistent with any special conditions or requirements contained in said master plan; and
(3) The application and sketch plan will be internally and externally compatible and harmonious with existing and planned land uses in the MXD zoned areas and adjacent areas.

Therefore, the applicants have the burden of showing that this application complies with the purpose and intent of the MXD Zone. In addition, they must show that the accompanying sketch plan will be compatible and harmonious with the surrounding planned and existing land uses. The sketch plan must also meet or accomplish the objectives and minimum standards and requirements of the zone.

Schematic Development Plan SDP-09-001
Section 24-160D.10(b) outlines the findings for approval of the schematic development plan (SDP) as follows:

(1) The plan is substantially in accord with the approved sketch plan; and
(2) The plan meets or accomplishes the purposes, objectives and minimum standards and requirements of the zone; and
(3) The plan is in accord with the area master plan and any accompanying special condition or requirements contained in said master plan for the area under consideration; and
(4) The plan will be internally and externally compatible and harmonious with existing and planned land uses in the MXD zoned area and adjacent areas; and
(5) That existing or planned public facilities are adequate to service the proposed development contained in the plan; and
(6) That the development staging or phasing program is adequate in relation to the provision of public facilities and private amenities to service the proposed development; and
(7) That the plan, if approved, would be in the public interest.

GENERAL INFORMATION

LOCATION:

The subject property is located in the northwest quadrant of Clopper Road (MD Rt 117) and Quince Orchard Road (MD Rt 124) in Gaithersburg, Maryland. The site is bound on the

west by Metropolitan Grove Road, on the north by a Maryland State Highway facility, Clopper Road to the south and Quince Orchard Road to the east. It is bisected by Firstfield Road. The Orchard Pond property is shown on ADC Map page 18-Grid B-8, Tax Map FT 22 sections 1,2, and 3 (Parcels A&B) and covers approximately 43.33 acres.

Location Map Z-312 and SDP-09-001

EXISTING LAND USE/ENVIRONMENTAL CHARACTERISTICS:

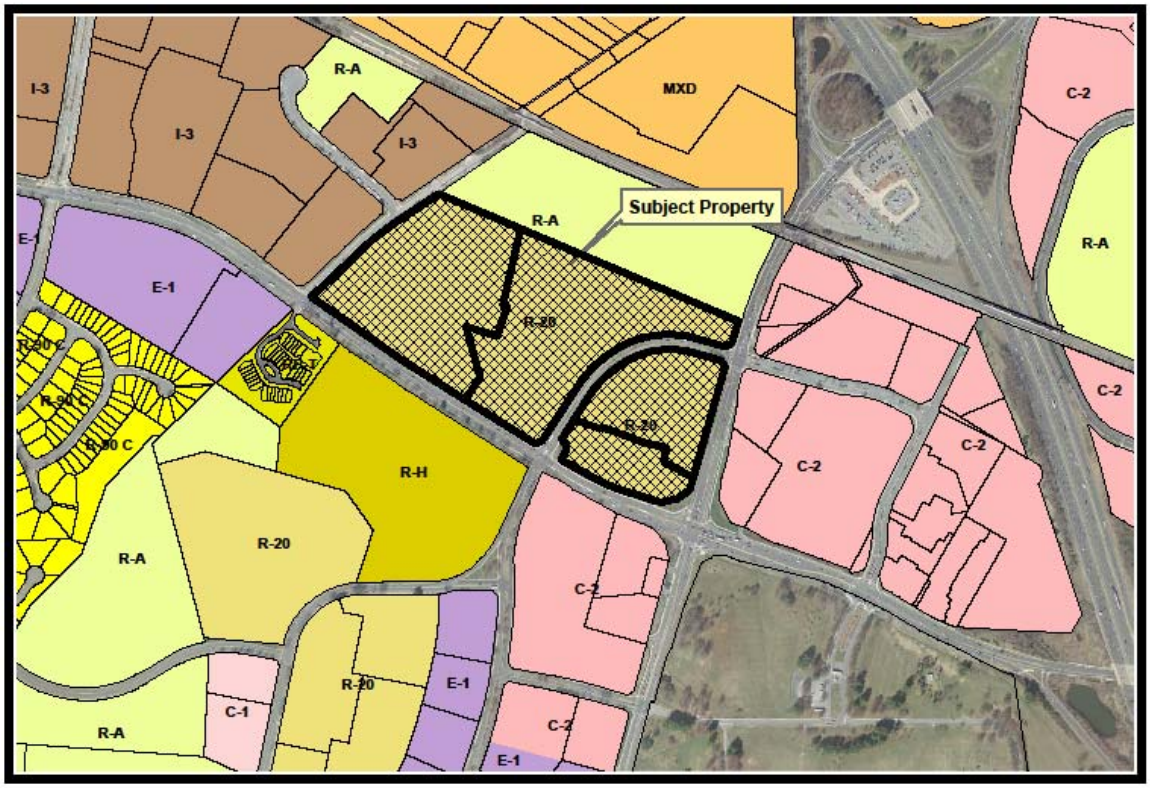
The existing Orchard Pond Apartments complex is a mature, medium-density residential complex containing 747 apartment units in multiple, three-story brick buildings that were constructed in the mid-1970s; and includes associated parking and landscaped areas. There is no forest area on the property, but there are numerous specimen trees on and adjacent to the property.

The Orchard Pond property drains to Long Draught Branch of Great Seneca Creek, which is a tributary to the Potomac River. Long Draught Branch bisects the southeast corner of the property at the Intersection of Quince Orchard Road and Clopper Road.

The Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) was approved by the City's Environmental Affairs Division on July 15, 2009.

NEIGHBORHOOD LAND USE AND ZONING:

The surrounding land use consists of multi-family apartment buildings and single-family town homes, interspersed with commercial and light industrial properties. The subject property is currently zoned R-20. North of the subject property is zoned R-A (low density residential) and is currently the location of a Maryland state highway facility. South of the property, located across Clopper Road, the property is zoned R-H (High Density Residential) and is the location of the Grove Park apartment complex, and the Quince Orchard Shopping Center, zoned C-2 (General Commercial). The C-2 zone is also located east across Quince Orchard Road from the site and is the location of the Diamond Square Shopping Center. The area to the west of the site is zoned I-3 (Industrial Office Park). The Motor Vehicles Bureau and a storage facility are located in this area. Further, the site is located diagonally across the Quince Orchard and Clopper Road intersection from the 578 acre headquarter campus of the National Institute of Standards and Technology.



Surrounding zoning of Z-312/SDP-09-001 Site

PUBLIC FACILITIES:

Water and Sewer Services and Public Utilities

The subject proposal is a redevelopment project of an existing residential use, therefore the site maintains W-1 and S-1 categories (areas served by community systems which are either existing or under construction). Service does exist and therefore, the application complies with the requirements of the City's Adequate Public Facility Ordinance (APFO) for water and sewer, § 24-247.

Fire and Emergency Services

The Gaithersburg/Washington Grove Fire Station 8 (Montgomery Village Avenue) provides an eight-minute response time to the majority of the property. The northeast portion of the property is also served by Fire Station 29 (Crystal Rock Drive in Germantown) within an eight-minute response time. Therefore, the site complies with the requirements for the Adequate Public Facilities requirements for Emergency Services. Any further approval of this plan will again require review and compliance with the standards of § 24-248, Fire and Emergency Services.

Adequacy of School Capacity

The Adequate Public Facilities Ordinance, § 24-246, states "With the exception of age restricted development, schematic development plan or preliminary site plan for residential development shall not be approved if the subject property is within the attendance area of a Montgomery County Public School that is forecasted to have a student population that exceeds 110% of Montgomery County Public Schools Program Capacity two (2) years in the future.."

The property is currently located within the Quince Orchard Cluster of the Montgomery County Public School (MCPS) system. Within the cluster, the schools that currently serve the proposed development are Thurgood Marshall Elementary School, Ridgeview Middle School and Quince Orchard High School. The staff review of the *2010-2015 MCPS Capital Budget and Capital Improvements Program* in July 2009 indicated none of the schools within the Quince Orchard Cluster serving the subject site are above the capacity level of 110 percent. Therefore, the subject application complies with §24-246, Adequacy of School Capacity at this time.

Traffic Impacts

The applicant submitted a Traffic Impact Analysis (TIA) by The Traffic Group, in accordance with the City of Gaithersburg's Adequate Public Facilities Ordinance. Engineering Services Director Mumpower reviewed the findings of the study which indicate that all the intersections in the study area will continue to operate within the City's acceptable standards for Critical Lane Volumes in both the AM and PM peak hours. Mr. Mumpower agreed with the findings detailed in the study and has granted approval of the TIA for this project.

Public Transportation

The site is serviced by Montgomery County Ride On Bus routes #68 and #71. The property is also located within a ½ mile radius of the Maryland Area Rail Connection (MARC) train station at Metropolitan Grove. There are nine morning trains to Washington D.C. and nine trains from Washington D.C. in the afternoon.

The current alignment of the Corridor Cities Transitway (CCT) is adjacent to the site along Quince Orchard Road. A future transit station is proposed for the site in this area.

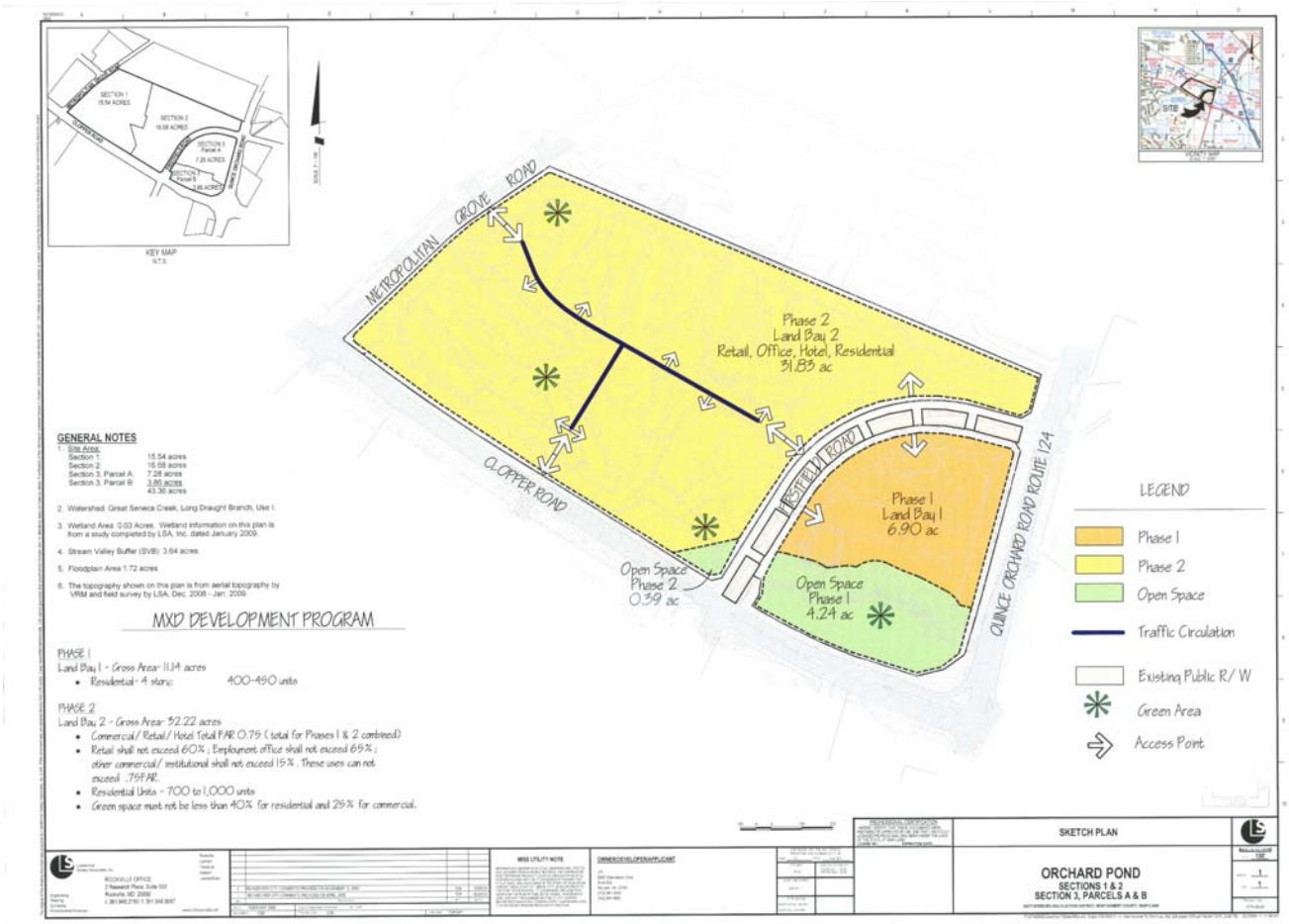
SKETCH PLAN Z-312:

The Sketch Plan proposes a mix of uses in two phases. Phase 1 includes a gross area of 11.14 acres and proposes a four-story residential building with 400 to 500 units. This reflects a density of approximately 37 units per acre. Phase 1 is also the subject of the Schematic Development Plan (SDP 09-001). Phase 2 consists of the balance of the project and is approximately 32.22 acres. This phase proposes a mix of uses including retail, office, hotel and residential. Approximately 700-1,000 residential units are planned reflecting a density of 32 units per acre. The mix of commercial uses reflected on the sketch plan are as defined in Section 24-160D.3.b.(2):

In order to establish an appropriately mixed character within the MXD zoned area the following percentages of floor area proposed on site as shown on a sketch plan shall not exceed:

Retail commercial	*60%*
Employment/office	*65%*
Other commercial/intuitional	*15%*

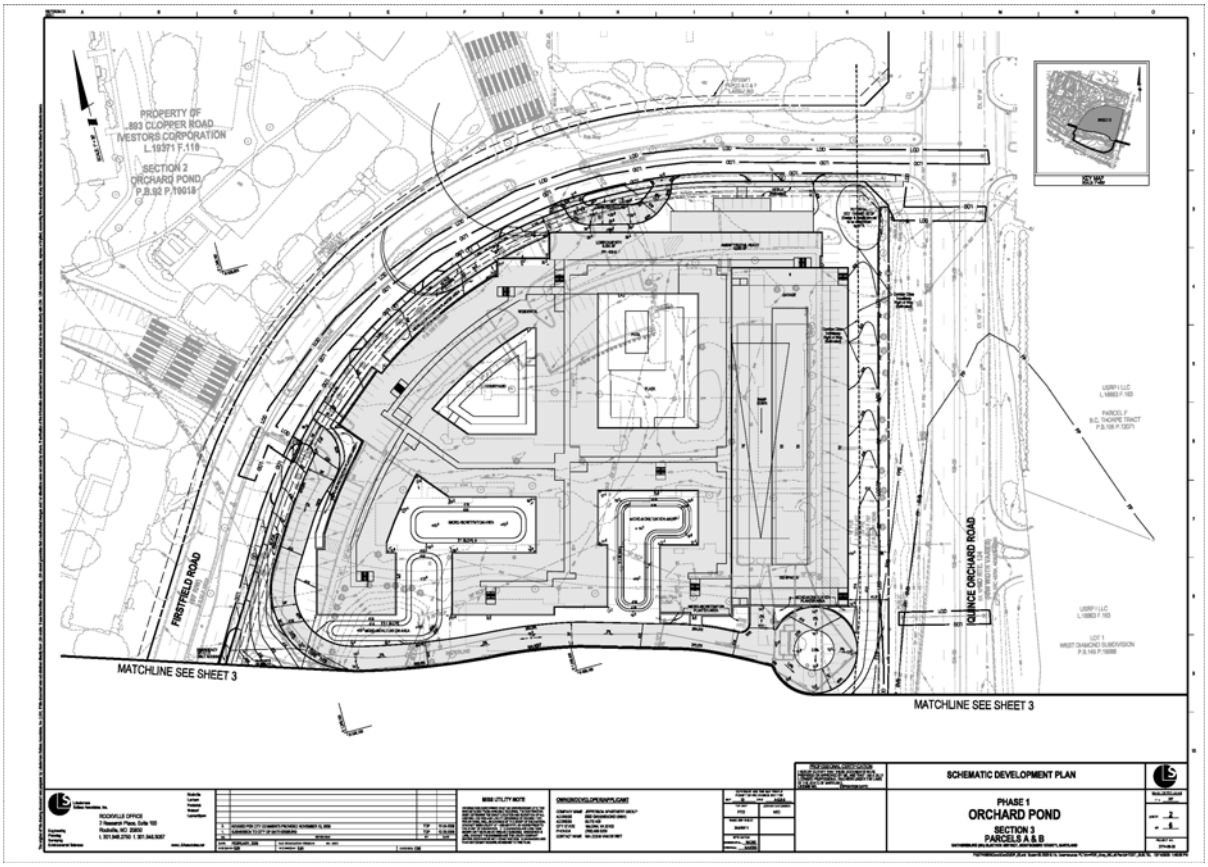
In addition, Section 24-160D.4 (1) (b) states: *the maximum density of the commercial/employment/industrial shall not exceed a floor area ratio of .75.* This is also reflected on the sketch plan.



Z-312 Illustrative Sketch Plan

SCHEMATIC DEVELOPMENT PLAN SDP-09-001

The applicant is proposing a 410-unit multi-family building with structured parking. The proposed unit per acre ratio is 37. The structure has a maximum building height of 60 feet and will be 4 stories high. The entrance to the project is located off of Firstfield Road. The structured garage will be located along Quince Orchard Road as the CCT right-of-way abuts the project at this location.



Illustrative Layout Plan

Conceptual Architectural Elevations

Below are the samples of the architecture presented by the applicants' team:

QUINCE ORCHARD ROAD, EAST ELEVATION

FIRSTFIELD ROAD, NORTH ELEVATION

LESSARD GROUP INC.
8521 LEESBURG PIKE, SUITE 700 | VIENNA, VA 22182
P: 703.760.9344 | F: 703.760.9328 | WWW.LESSARDGROUP.COM

CONCEPT SITE DEVELOPMENT PLAN
CONCEPT ELEVATIONS
DECEMBER 4, 2009

ORCHARD POND
CITY OF GAITHERSBURG, MD
JPI
JPL015A
1" = 20'

A.02

FIRSTFIELD ROAD, WEST ELEVATION

CLOPPER ROAD, SOUTH ELEVATION

LESSARD GROUP INC.
8521 LEESBURG PIKE, SUITE 700 | VIENNA, VA 22182
P: 703.760.9344 | F: 703.760.9328 | WWW.LESSARDGROUP.COM

CONCEPT SITE DEVELOPMENT PLAN
CONCEPT ELEVATIONS
DECEMBER 4, 2009

ORCHARD POND
CITY OF GAITHERSBURG, MD
JPI
JPL015A
1" = 20'

A.03

According to the applicant's Leadership in Environmental and Energy Design (LEED) checklist, the project would be a rated as LEED Certified building.

Parking

The plan proposes a structured parking garage on the eastern side of the site facing Quince Orchard Road and adjacent to the CCT right-of-way. The applicant has provided a target parking ratio of 1.6 cars per unit, for a total of 656 required spaces for the 410 residential units. The garage currently provides 650 spaces. The plan also provides for 20 on-street parking spaces along Firstfield Road for a total of 670 parking spaces provided on-site. Section 24-219 (4) (b) presents the required parking for residential development by unit type. The parking spaces required range from 1 space per studio unit to 2.5 spaces per 3 bedroom unit or larger. The applicant has provided a statement in support of the fixed parking rate request which is included in the exhibits. Section 24-160D.8 (a) states that "The Council at the time of schematic development plan review shall determine the appropriate number of spaces..."

PROPOSED AMENITIES

The proposed Orchard Pond development is located within a ten minute walk of Robertson Park, an 8.9 -acre active park that offers softball/baseball, soccer, and football fields, as well as the Robertson Park Youth Center. On site amenities include a proposed outdoor swimming pool and deck area, and courtyards for outdoor gathering. In Phase 1, the interior amenity space will consist of apartment-use only functions such as a fitness facility and a clubroom.

AFFORDABLE HOUSING

The proposed project will be required to provide an affordable housing component per City Ordinance O-12-06 and will be implemented under City Regulation 02-07. The applicant will be required to provide fifteen percent (15%) of the 410 multi-family units as moderately priced dwelling units (MPDUs). This will equal sixty-two (62) units. The final distribution of units within the multi-family structure will be determined at final site plan, in accordance with the City regulations

STAFF RECOMMENDATION

Since this is the initial public hearing and staff has not completed the customary evaluation, no formal recommendation is provided at this time. Staff will make a formal recommendation of Map Amendment Z-312 and Schematic Development Plan SDP-09-001 prior the Planning Commission's recommendation to the Mayor and City Council.

Joint Public Hearing
January 4, 2010

INDEX OF MEMORANDA
SDP-09-001-ORCHARD POND

1. Application for Schematic Development Plan, 2/25/09 and Receipt for Application Fee
2. Aerial Photo/Vicinity Map
3. ALTA Survey
4. Statement of Master Plan Compliance
5. Schematic Development and Landscape Plan (6 sheets)
6. Conceptual Building Elevations
7. Turning Radius Plan
8. Architectural Design Guidelines
9. Staff Comments on Sketch Plan and SDP 11/10/2009
10. Response to Staff Comments 12/7/09
11. Preliminary Forest Conservation Plan
12. Preliminary Forest Conservation Staff Comments 10/27/09
13. Sediment Control Plan
14. Stormwater Management Concept Computations
15. Stormwater Management Plan
16. Stormwater Management and Sediment Control Receipt
17. Traffic Impact Analysis (TIA) by the Traffic Group, 12/09
18. Rental Agreement between JPI Development Services and Montgomery County
19. Environmental Noise Measurement, Analysis, and Noise Preliminary Impact Assessment, October 5, 2009

20. LEED 2009 for New Construction and Major Renovation Project Scorecard

21. Montgomery County Department of Transportation Comments 11/24/09

22. WSSC Comments 11/16/09

23. SHA Comments 12/16/09

24. Gazette Legal Notice for 12/16/09 and 12/23/09

25. Joint Public Hearing Notice sent 12/11/09

26. Joint Public Hearing Notice Labels for owners within 200 feet of the property

27. Letter to the Current Residents from the Management Company concerning the Proposed Redevelopment 12/10/09

28. Email from Ollie Mumpower, Engineering Services Director, approving the TIA

29. Statement in Support of Fixed Parking Rate Request 12/15/09

City of Gaithersburg • 31 South Summit Avenue • Gaithersburg, Maryland 20877 • Telephone: 301-258-6330 • Fax: 301-258-6336
plancode@gaithersburgmd.gov • www.gaithersburgmd.gov

SITE PLAN APPLICATION

Application # SDP 09-001
Date Filed 2-25-09
Total Fee 8000 pd

In accordance with Article III, Division 19, Section 24-160 D.9
and Article V of the City Code

- ☐ CONCEPT
- ☐ PRELIMINARY
- ☐ FINAL (MXD FEE APPLIES)
- ☒ SCHEMATIC DEVELOPMENT

1. SUBJECT PROPERTY

Project Name ORCHARD POND, Phase 1
Street Address Firstfield Road, Gaithersburg
Zoning MXD Historic area designation ☐ Yes ☒ No
Lot _____ Block _____ Subdivision Parcel A (N781) & B (N888), Section 3
Tax Identification Number *(must be filled in)* 09 02899812, 09 02899823

2. APPLICANT

Name 893 Clopper Road Investors c/o JPI
Street Address 8300 Greensboro Drive Suite No. 600
City McLean State VA Zip Code 22102
Telephones: Work (703) 847-0900 Home _____

3. CITY PROJECT NUMBER

Original Site Plan Number *(if applicable)* _____
Name of previously approved Final Plan *(if applicable)* _____

4. ARCHITECT/ENGINEER/DEVELOPER

Architect's Name Lessard Group Inc. Contact: Joe Schneider, AIA
Architect's Maryland Registration Number 14817 Telephone (703) 760-9344
Street Address 8521 Leesburg Pike Suite No. 700
City Vienna State VA Zip Code 22182

Engineer's Name Loiederman Soltesz Associates Contact: Steve Tawes, RLA or Irene Carrato, P.E.
Engineer's Maryland Registration Number 15009 Telephone (301) 948-2750
Street Address 2 Research Place Suite No. 100
City Rockville State MD Zip Code 20850

Developer's Name JPI Telephone (703) 847-0900
Street Address 8300 Greensboro Drive Suite No. 600
City McLean State VA Zip Code 22102
Contact Person Malcolm Van de Riet

5. PROPERTY OWNER

Name 893 Clopper Road Investors c/o JPI
Street Address 8300 Greensboro Drive Suite No. 600
City McLean State VA Zip Code 22102
Telephones: Work (703) 847-0900 Home _____

continued on reverse side

Joint Hearing - MCC & PC
SDP 09 001
1

6. **PRIMARY USE**

- ☐ Mixed Use
- ☐ Non-Residential
- ☒ Residential

7. **PROPOSED UNIT TYPE**

- ☐ Mixed Use
- ☐ Office/Professional
- ☐ Restaurant
- ☐ Retail/Commercial
- ☒ Residential Multi-Family
- ☐ Residential Single Family
- ☐ Other

8. **WORK DESCRIPTION**

See enclosed letter for work description.

REDEVELOPE EXISTING MULTIFAMILY APTS & CONSTRUCT 420 MFU.

9. **PROJECT DETAIL INFORMATION.** Please supply the following information.

DEVELOPMENT INFORMATION		REQUIRED	PROVIDED
1. Site (square feet)			485,258 sq. ft.
2. Site Area (acres)			11.14 acres
3. Total Number of Dwelling Units/Lots			420
4. Height of Tallest Building			60'
5. Green Area (square feet)		194,103 sq. ft.	300,564 sq. ft.
6. Number of Dwelling Units/Acre			37.70 d.u./acre
7. Lot Coverage (percent)			23.7%
8. Green Area (percent)		40%	61.9%
9. Residential			
a. Single Family Detached	# Units		
b. Single Family Attached	# Units		
c. Multi-Family Condo	# Units		
d. Multi-Family Apartment	# Units		420 d.u.
e. Other			
10. Retail/Commercial	Sq. Ft.		
11. Restaurant Class: ☐A ☐B ☐C	Sq. Ft.		
12. Office/Professional	Sq. Ft.		
13. Warehouse/Storage	Sq. Ft.		
14. Parking		725 spaces	672 spaces
15. Shared Parking/Waiver		53 spaces	
16. Other			
17. Totals			

10. **SUBMISSION REQUIREMENTS**

a. Set of plans per the respective checklist. Plans must be folded to 8½ x 11."
b. Completion of the table above.
c. Completed checklist.
d. Fee as applicable.

I have read and complied with the submission requirements and affirm that all statements contained herein are true and correct.

Applicants Name (*please print*) Malcolm Van de Riet Telephone (703) 847-0900

Applicant's Signature _____ Date _____

S05/2006

App

Gaithersburg
A CHARACTER COUNTS! CITY

RECEIPT

RECEIPT NUMBER: CH-0900486

APD #: **SDP-09-001** TYPE: Schematic Develpmnt Plan
SITE ADDRESS: **891 CLOPPER RD GB**
PARCEL: 2899812
2899823

TRANSACTION DATE: 02/25/2009 TOTAL PAYMENT: 8,000.00
TOTAL PAID FROM CURRENCY: 8,000.00

TRANSACTION LIST:

Type	Method	Description	Amount
Payment	Check	873	8,000.00

PAID LaSalle Investment Managment, Inc. a/a/f Clopper Road Investors, LLC Po Box 619208 DFW Station Dallas TX 75261

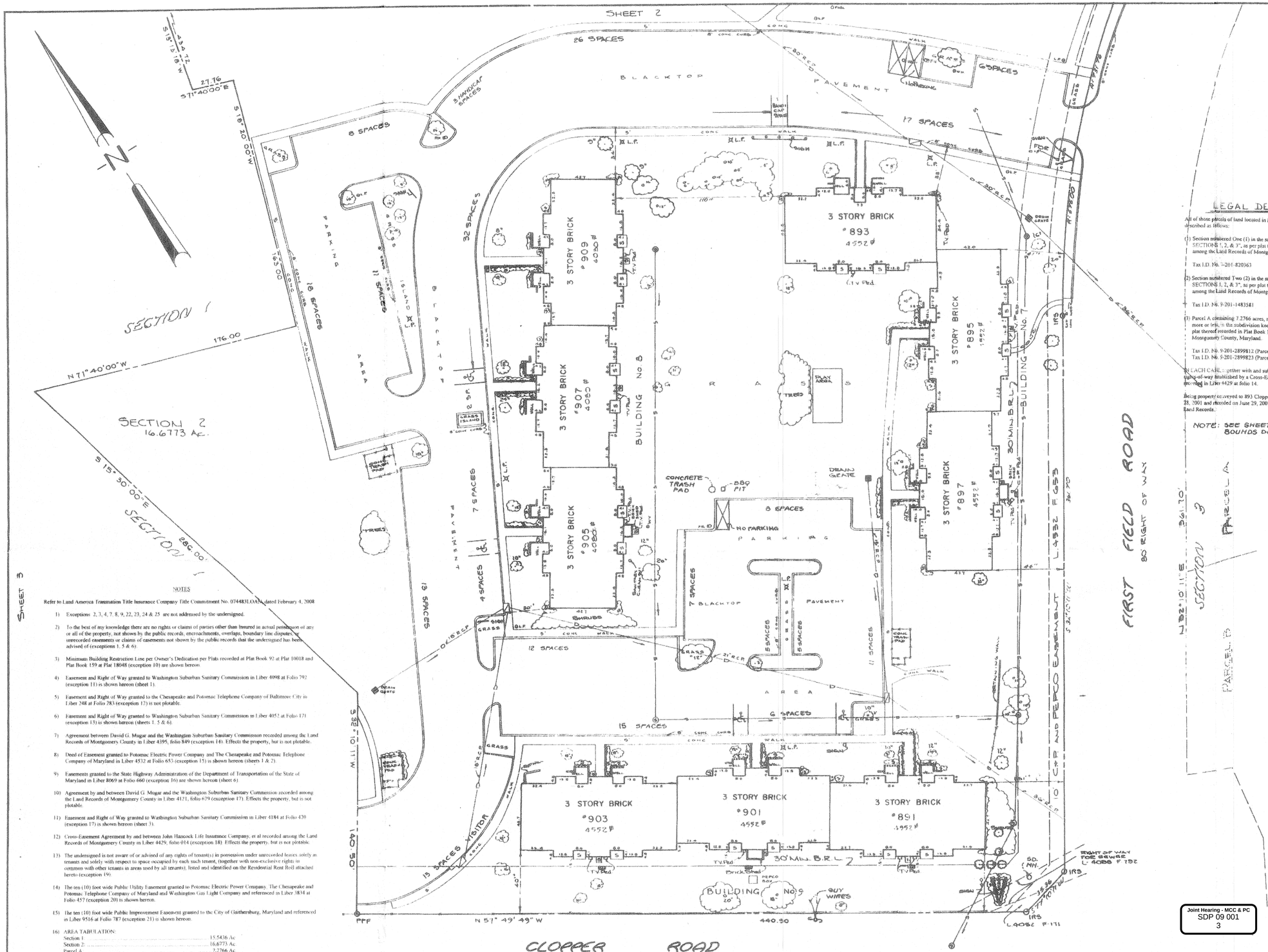
TOTAL: 8,000.00

ACCOUNT ITEM LIST:

Description	Account Code	Current Pmts
Site Plan Fees / Zoning	**100-441300**	**8,000.00**
	TOTAL:	8,000.00

RECEIPT ISSUED BY: TMAJANO INITIALS: TM
ENTERED DATE: 02/25/2009 TIME: 04:50 PM

Joint Hearing - MCC & PC
SDP 09 001
2



NOTES

Refer to Land America Transnation Title Insurance Company Title Commitment No. 0744831.LOA, dated February 4, 2008

1) Exceptions 2, 3, 4, 7, 8, 9, 22, 23, 24 & 25 are not addressed by the undersigned.

2) To the best of my knowledge there are no rights or claims of parties other than Insured in actual possession of any or all of the property, not shown by the public records, encroachments, overlaps, boundary line disputes, or unrecorded easements or claims of easements not shown by the public records that the undersigned has been advised of (exceptions 1, 5 & 6).

3) Minimum Building Restriction Line per Owner's Dedication per Plats recorded at Plat Book 92 at Plat 10018 and Plat Book 159 at Plat 18048 (exception 10) are shown hereon.

4) Easement and Right of Way granted to Washington Suburban Sanitary Commission in Liber 4098 at Folio 792 (exception 11) is shown hereon (sheet 1).

5) Easement and Right of Way granted to the Chesapeake and Potomac Telephone Company of Baltimore City in Liber 248 at Folio 283 (exception 12) is not plotable.

6) Easement and Right of Way granted to Washington Suburban Sanitary Commission in Liber 4052 at Folio 171 (exception 13) is shown hereon (sheets 1, 5 & 6).

7) Agreement between David G. Mugar and the Washington Suburban Sanitary Commission recorded among the Land Records of Montgomery County in Liber 4395, folio 849 (exception 14). Effects the property, but is not plotable.

8) Deed of Easement granted to Potomac Electric Power Company and The Chesapeake and Potomac Telephone Company of Maryland in Liber 4532 at Folio 653 (exception 15) is shown hereon (sheets 1 & 2).

9) Easements granted to the State Highway Administration of the Department of Transportation of the State of Maryland in Liber 8069 at Folio 660 (exception 16) are shown hereon (sheet 6).

10) Agreement by and between David G. Mugar and the Washington Suburban Sanitary Commission recorded among the Land Records of Montgomery County in Liber 4121, folio 679 (exception 17). Effects the property, but is not plotable.

11) Easement and Right of Way granted to Washington Suburban Sanitary Commission in Liber 4184 at Folio 420 (exception 17) is shown hereon (sheet 3).

12) Cross-Easement Agreement by and between John Hancock Life Insurance Company, et al recorded among the Land Records of Montgomery County in Liber 4429, folio 014 (exception 18). Effects the property, but is not plotable.

13) The undersigned is not aware of or advised of any rights of tenant(s) in possession under unrecorded leases solely as tenants and solely with respect to space occupied by each such tenant, (together with non-exclusive rights in common with other tenants in areas used by all tenants), listed and identified on the Residential Rent Roll attached hereto (exception 19).

14) The ten (10) foot wide Public Utility Easement granted to Potomac Electric Power Company, The Chesapeake and Potomac Telephone Company of Maryland and Washington Gas Light Company and referenced in Liber 3834 at Folio 457 (exception 20) is shown hereon.

15) The ten (10) foot wide Public Improvement Easement granted to the City of Gaithersburg, Maryland and referenced in Liber 9516 at Folio 787 (exception 21) is shown hereon.

16) AREA TABULATION:

Section 1	15.5436 Ac.
Section 2	16.6773 Ac.
Parcel A	7.2766 Ac.
Parcel B	3.8654 Ac.
Total	43.3629 Ac.

17) Premise addresses: 893 (Section 2) & 899 (Section 1) Clopper Road and Firstfield Road (Parcels A & B) Gaithersburg, Maryland 20878

18) There is no observable evidence of earth moving, building construction or building additions within recent months

19) There is no observable evidence of the site being used as a solid waste dump, sump or sanitary landfill.

20) There is no observable evidence of cemeteries or burial grounds located on the property

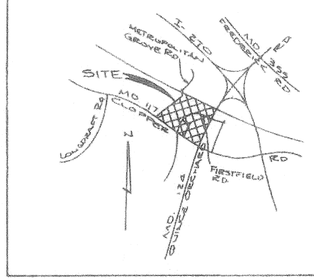
21) Rights of Way in Deeds from Charles Herman Rabbitt to the State of Maryland to the use of the State Roads Commission of Maryland dated October 18th, 1955 and recorded in Liber 2126 at Folio 207, and in Liber 2126 at Folio 209 and as shown on the State Road Commission Plat Nos. 11872 and 11873 do not effect the subject property.

CITY OF GATHERSBURG
ZONED: R-20
SETBACK REQUIREMENTS
FRONT: 30 FEET
REAR: 30 FEET
SIDE: 20 FEET
BETWEEN BUILDINGS: 40 FEET

Increase for height. Notwithsatnding the preceding requirements of this section, whenever a building exceeds thirty (30) feet in height, the required yard depths shall be increased one foot for each foot of building height over thirty (30) feet.

VICINITY MAP

APPROXIMATELY 1" = 3000'



LEGAL DESCRIPTION

All of those parcels of land located in Montgomery County, Maryland, which are described as follows:

(1) Section numbered One (1) in the subdivision known as "ORCHARD POND, SECTIONS 1, 2, & 3", as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-820363

(2) Section numbered Two (2) in the subdivision known as "ORCHARD POND, SECTIONS 1, 2, & 3", as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-1483581

(3) Parcel A containing 7.2766 acres, more or less, and Parcel B containing 3.8654 acres, more or less, in the subdivision known as "SECTION 3, ORCHARD POND", as per plat thereof recorded in Plat Book 159 at Plat No. 18048 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-2899812 (Parcel A)
Tax I.D. No. 9-201-2899823 (Parcel B)

EACH CASE: together with and subject to the perpetual non-exclusive easements and rights-of-way established by a Cross-Easement Agreement dated August 24, 1973 and recorded in Liber 4429 at folio 14.

Being property conveyed to 893 Clopper Road Investors Corporation, by Deed dated June 28, 2001 and recorded on June 29, 2001 in Liber 19571 at folio 116 among the aforesaid Land Records.

NOTE: SEE SHEET 2 FOR NOTES AND BOUNDS DESCRIPTIONS.

LEGEND

- TREE
- SHRUB
- SANITARY MANHOLE
- STOOP OR SLAB
- SWM STORM WATER MANHOLE
- HYDRANT
- LP LIGHT POLE
- WV WATER VALVE
- WM WATER METER
- INLET
- FENCE LINE
- CABLE BOX

NOTES:

1. LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN TAKEN FROM FIELD MEASUREMENTS AND FROM AVAILABLE UTILITY PLANS.

2. SECTIONS 1 & 2 ARE RECORDED IN PLAT BOOK 92 ON PLAT NO.10018.

3. PARCELS A & B ARE RECORDED IN PLAT BOOK 159 ON PLAT NO. 18048.

SURVEYOR'S CERTIFICATE

This certification is made to JPI Development Services, L.P., a Delaware limited partnership, Orchard Pond Investors, L.L.C., a Delaware limited liability company, 893 Clopper Road Investors, L.L.C., a Delaware limited liability company, General Electric Capital Corporation and it's successors and assigns, Moffett & Junkin, Chartered, and Lawyers Title Insurance Corporation for use with Order No. _____ and only for use with this transaction.

I hereby certify that the Survey Job No. 208008, entitled "ALTA/ACSM Land TitleSurvey Orchard Pond Sections 1&2 and Parcels A&B" was prepared from an on the-ground survey made under my supervision and that it and the information, courses and distances shown thereon are correct; that the title lines and lines of actual possession are the same except as noted; that the size, location and type of buildings and improvements are as shown and all are within the boundary lines and applicable setback lines of the property; the undersigned is not aware of any violations of zoning ordinances, restrictions or other rules and regulations with reference to the location of said buildings and improvements; that there are not any easements or uses affecting this property appearing from a careful physical inspection of the same, other than those shown and depicted thereon; that there are no encroachments affecting this property other than as shown; that potable and waste water, electric, gas and telephone utilities are located on the tract and appear operational; that to the extent known by the undersigned, any utility transformers labeled as containing PCB's are specifically noted; that any discharge into streams, rivers or other conveyance system is shown on the survey; that the parcel(s) described hereon do not lie within flood hazard areas in accordance with any maps entitled "Flood Insurance Rate Map," "Flood Hazard Floodway Boundary Map," "Flood Hazard Boundary Map," or "Flood Boundary and Floodway Map" published by the Federal Emergency Management Agency or a Flood Hazard Boundary Map published by the U.S. Department Of Housing and Urban Development, except as shown thereon (see Sheet 6); and that the property has direct access to First Field Road, a public road maintained by Montgomery County.

This map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys" jointly established and adopted in 2005 by the American Land Title Association, the American Congress on Surveying and Mapping and the National Society of Professional Surveyors and includes Items, 1, 2, 3, 4, 6, 7a, 7b1, 8, 9, 10, 11a, 13, 14, 16, 17 and 18 of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA, ACSM, and NSPS and in effect on the date of this certification, the undersigned further certifies that in my professional opinion, as a land surveyor registered in the State of Maryland, the Positional Uncertainties resulting from the measurements made on the survey do not exceed the allowable Positional Tolerance.

Date: 3/6/08

Charles F. Young
Charles F. Young
Registration No. 10993

Joint Hearing - MCC & PC
SDP 09 001
3

THE TECH GROUP, INC.
ENGINEERS • PLANNERS • SURVEYORS
GEOTECHNICAL • ENVIRONMENTAL
TELECOMMUNICATIONS

ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B

MONTGOMERY COUNTY, MARYLAND

SCALE 1" = 30'

0 15 30 45 60

DATE SEPT. 16, 1993
REVISION DATE: JAN. 31, 2002
REVISION DATE: OCT. 8, 2007
REVISION DATE: FEB. 28, 2008

SHEET 1 OF 8

208008

LEGAL DESCRIPTIONS

Section numbered One (1) in the subdivision know as "Orchard Pond, Sections 1, 2 & 3" as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland, and being more particularly described as follows:

Beginning for the same at a point at the intersection of the northeasterly right of way line of Clopper Road (Maryland Route 117) and the southeasterly right of way line of Metropolitan Grove Road as shown on a plat entitled, "Street Dedication Plat for Metropolitan Grove Road, Clopper Road & Brown's Station Road Gaithersburg", and recorded among the said land records at Plat No. 8505; thence running with and along part of said right of way line of Metropolitan Grove Road the three following courses

1) North 46°31'41" East 441.09 feet; thence
2) 152.01 feet with the arc of a curve deflecting to the right with a radius of 945.00 feet and subtended by a chord bearing North 51°08'11" East 151.85 feet; thence
3) North 55°44'41" East 283.08 feet to a point on the southerly boundary of the lands now or formerly of the State of Maryland as recorded in Liber 2626 at Folio 32; thence departing said right of way line of Metropolitan Grove Road and running with and along part of said southerly boundary of the State of Maryland
4) South 66°46'54" East 475.27 feet to a point on the westerly boundary of Section 2, "Orchard Pond" as shown on the aforesaid plat recorded at Plat No. 10018; thence departing said lands of the State of Maryland and running with and along said boundary of Section 2 the six following courses
5) South 13°13'18" West 434.72 feet; thence
6) South 71°40'00" East 27.76 feet; thence
7) South 18°20'00" West 163.00 feet; thence
8) North 71°40'00" West 176.00 feet; thence
9) South 15°30'00" East 286.00 feet; thence
10) South 32°10'11" West 140.50 feet to a point on the aforesaid northeasterly right of way line of Clopper Road; thence departing said Section 2 and running with and along part of said right of way the three following courses
11) North 57°49'49" West 316.12 feet; thence
12) 590.39 feet with the arc of a curve deflecting to the right with a radius of 6640.00 feet and subtended by a chord bearing North 55°16'59" West 590.20 feet; thence
13) North 52°44'09" West 83.66 feet to the point of beginning, containing in all 15.5436 acres, more or less.

Section numbered Two (2) in the subdivisson know as "Orchard Pond, Sections 1, 2 & 3", as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland, and being more partiularly described as follows:

Beginning for the same at a point at the intersection of the northeasterly right of way line of Clopper Road (Maryland Route 117) as shown on a plat entitled, "Street Dedication Plat for Metropolitan Grove Road, Clopper Road & Brown's Station Road Gaithersburg" and recorded among the said land records at Plat No. 8505, and the easterly boundary of Section 1, "Orchard Pond", as shown on the aforesaid plat recorded at Plat No. 10018; thence departing said right of way and running with and along said boundary of Section 1 the six following courses

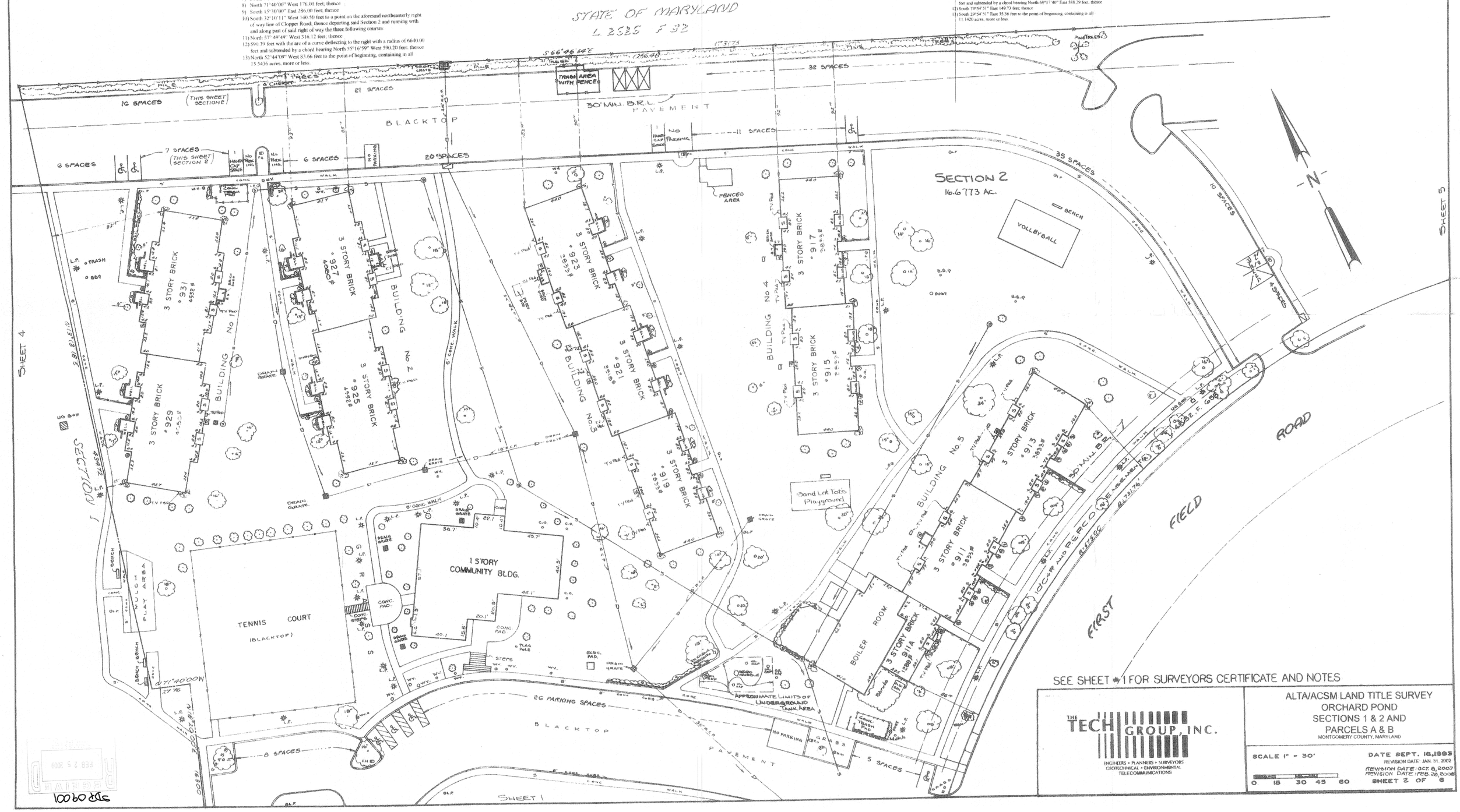
1) North 32°10'11" East 140.50 feet, thence
2) North 15°30'00" West 286.00 feet; thence
3) South 71°40'00" East 176.00 feet; thence
4) North 18°20'00" East 163.00 feet, thence
5) North 71°40'00" West 27.76 feet; thence
6) North 13°13'18" East 434.72 feet to a point on the southerly boundary of the lands now or formerly of the State of Maryland as recorded in Liber 2626 at Folio 32; thence departing said Section 1 and running with and along part of said southerly boundary of the State of Maryland
7) South 66°46'54" East 1731.75 feet to a point on the westerly right of way line of Quince Orchard Road (formerly Brown's Station Road) as shown on the aforesaid street dedication plat recorded at Plat No. 8505; thence departing said lands of the State of Maryland and running with and along part of said right of way line
8) South 15°05'09" West 127.74 feet to a point on the northerly right of way line of First Field Road as shown on the aforesaid plat recorded at Plat No. 10018; thence departing said right of way line of Quince Orchard Road and running with and along said right of way line of First Field Road the five following courses
9) South 60°05'09" West 35.36 feet; thence
10) North 74°54'51" West 149.13 feet; thence
11) 738.76 feet with the arc of a curve deflecting to the left with a radius of 575.00 feet and subtended by a chord bearing South 68°37'40" West 683.37 feet; thence
12) South 32°10'11" West 361.70 feet; thence
13) South 77°10'11" West 35.36 feet to a point on the aforesaid northeasterly right of way line of Clopper Road; thence departing said right of way line of First Field Road and running with and along part of said right of way line of Clopper Road
14) North 57°49'49" West 440.90 feet to the point of beginning, containing in all 16.6773 acres, more or less.

NOTE: SECTIONS 1 & 2 ARE CONTIGUOUS PARCELS

Parcel A containing 7.2766 acres, more or less, and Parcel B containing 3.8654 acres, more or less, in the subdivision known as "Section 3, Orchard Pond", as per plat thereof recorded in Plat Book 159 at Plat No. 18048 among the land records of Montgomery County, Maryland

Beginning for the same at a point at the intersection of the southerly right of way line of First Field Road, as shown on the aforesaid plat recorded at Plat No. 18048, and the westerly right of way line of Quince Orchard Road (Maryland Route 124), as shown on State Roads Commission Plat Nos. 48264 & 48367; thence departing said right of way line of First Field Road and running with and along part of said right of way line of Quince Orchard Road the four following courses

1) South 15°05'09" West 485.00 feet; thence
2) South 16°31'15" West 208.05 feet; thence
3) South 54°52'42" West 83.19 feet; thence
4) South 76°28'00" West 89.01 feet to a point on the northerly right of way line of Clopper Road (Maryland Route 117), as shown on State Roads Commission Plat Nos. 48263 & 48264; thence departing said right of way line of Quince Orchard Road and running with and along part of said right of way line of Clopper Road the two following courses
5) South 72°17'34" West 209.52 feet; thence
6) 373.52 feet with the arc of a curve deflecting to the right with a radius of 2231.83 feet and subtended by a chord bearing North 63°38'17" West 373.09 feet to a point on the easterly right of way line of First Field Road, as shown on the aforesaid plat recorded at Plat No. 18048; thence departing said right of way line of Clopper Road and running with and along said right of way line of First Field Road the seven following courses
7) North 32°27'24" East 41.09 feet, thence
8) North 08°22'52" East 51.48 feet; thence
9) North 64°32'35" West 31.13 feet; thence
10) North 32°10'11" East 301.70 feet; thence
11) 629.95 feet with the arc of a curve deflecting to the right with a radius of 495.00 feet and subtended by a chord bearing North 68°37'40" East 588.29 feet, thence
12) South 74°54'51" East 149.73 feet; thence
13) South 29°54'51" East 35.36 feet to the point of beginning, containing in all 11.1420 acres, more or less.



SEE SHEET #1 FOR SURVEYORS CERTIFICATE AND NOTES

THE TECH GROUP, INC.
ENGINEERS • PLANNERS • SURVEYORS
GEOTECHNICAL • ENVIRONMENTAL
TELECOMMUNICATIONS

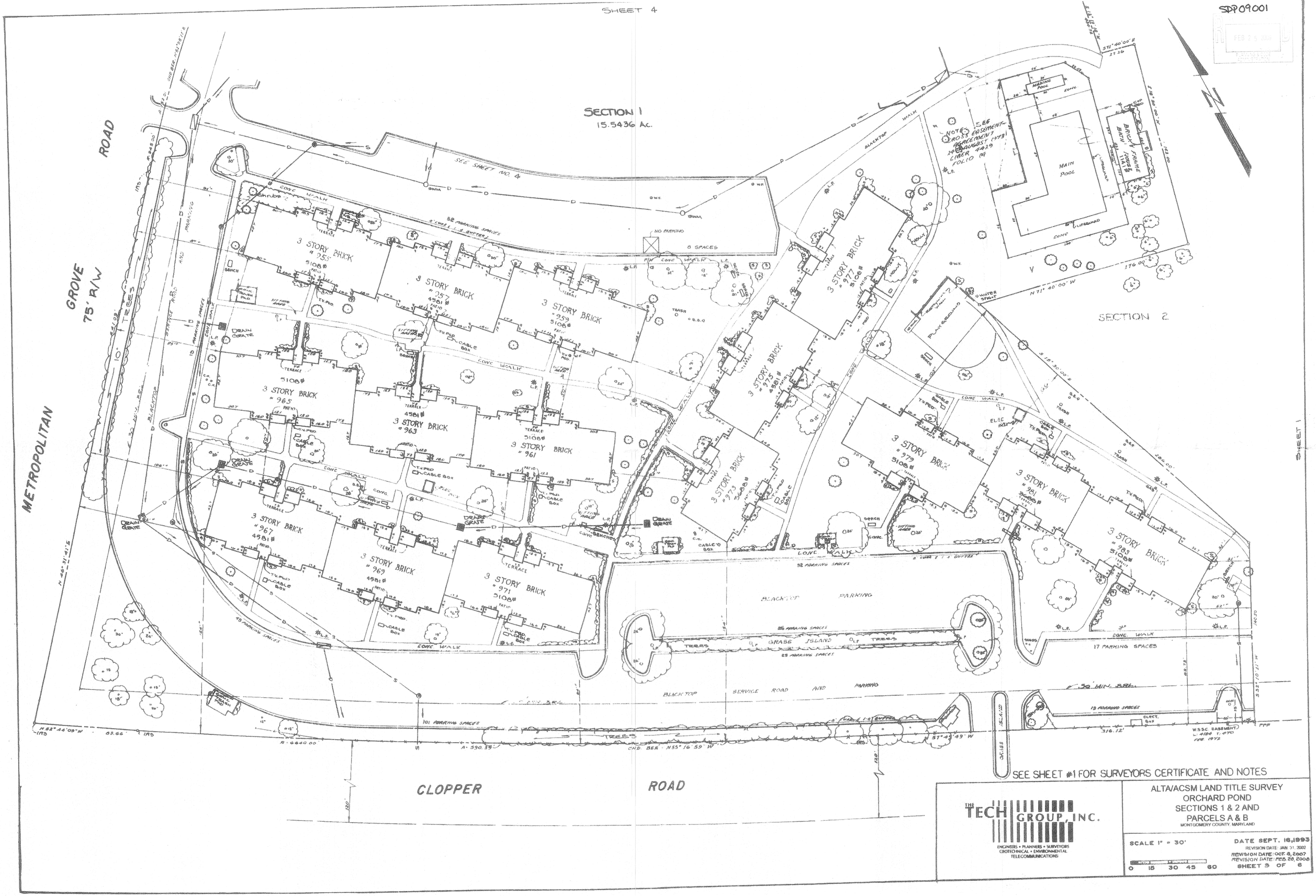
ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B
MONTGOMERY COUNTY, MARYLAND

SCALE 1" = 30'
0 15 30 45 60

DATE SEPT. 18, 1993
REVISION DATE: JAN 31, 2002
REVISION DATE: OCT. 8, 2007
REVISION DATE: FEB. 28, 2008
SHEET 2 OF 6

SDP 09001

SDP09001



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TELECOMMUNICATIONS

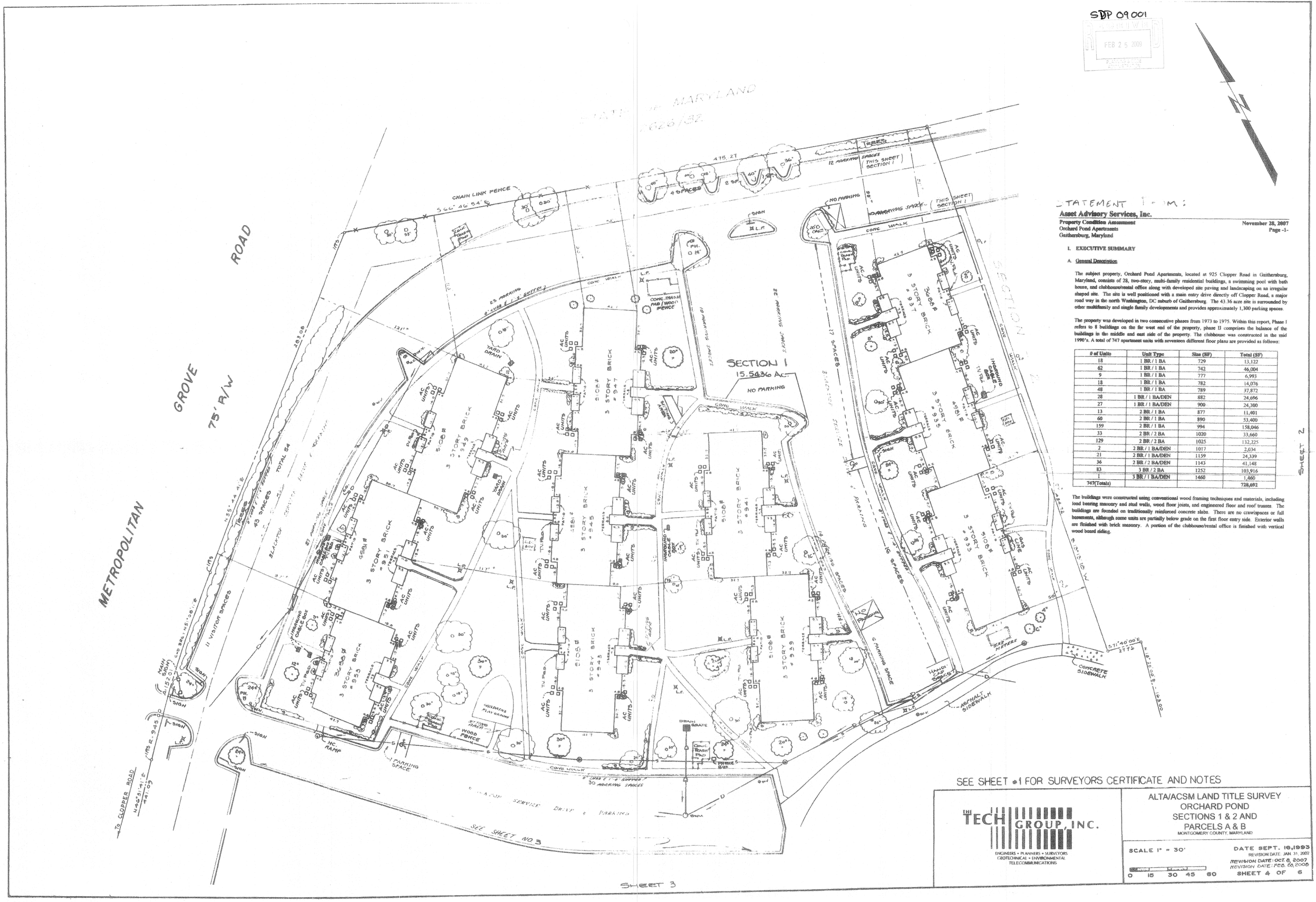
ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B
MONTGOMERY COUNTY, MARYLAND

SCALE 1" = 30'
0 15 30 45 60

DATE SEPT. 16, 1993
REVISION DATE: JAN. 31, 2002
REVISION DATE: OCT. 8, 2007
REVISION DATE: FEB. 28, 2008
SHEET 5 OF 6

SDP 09001

RECEIVED
FEB 25 2009
PLANNING DIVISION
ROCKVILLE



STATEMENT FROM:

Asset Advisory Services, Inc.

Property Condition Assessment — November 28, 2007
Orchard Pond Apartments — Page -1-
Gaithersburg, Maryland

I. EXECUTIVE SUMMARY

A. General Description

The subject property, Orchard Pond Apartments, located at 925 Clopper Road in Gaithersburg, Maryland, consists of 28, two-story, multi-family residential buildings, a swimming pool with bath house, and clubhouse/rental office along with developed site paving and landscaping on an irregular shaped site. The site is well positioned with a main entry drive directly off Clopper Road, a major road way in the north Washington, DC suburb of Gaithersburg. The 43.36 acre site is surrounded by other multifamily and single family developments and provides approximately 1,300 parking spaces.

The property was developed in two consecutive phases from 1973 to 1975. Within this report, Phase I refers to 8 buildings on the far west end of the property, phase II comprises the balance of the buildings in the middle and east side of the property. The clubhouse was constructed in the mid 1990's. A total of 747 apartment units with seventeen different floor plans are provided as follows:

# of Units	Unit Type	Size (SF)	Total (SF)
18	1 BR / 1 BA	729	13,122
62	1 BR / 1 BA	742	46,004
9	1 BR / 1 BA	777	6,993
18	1 BR / 1 BA	782	14,076
48	1 BR / 1 BA	789	37,872
28	1 BR / 1 BA/DEN	882	24,696
27	1 BR / 1 BA/DEN	900	24,300
13	2 BR / 1 BA	877	11,401
60	2 BR / 1 BA	890	53,400
159	2 BR / 1 BA	994	158,046
33	2 BR / 2 BA	1020	33,660
129	2 BR / 2 BA	1025	132,225
2	2 BR / 1 BA/DEN	1017	2,034
21	2 BR / 1 BA/DEN	1159	24,339
36	2 BR / 2 BA/DEN	1143	41,148
83	3 BR / 2 BA	1252	103,916
1	3 BR / 1 BA/DEN	1460	1,460
747(Totals)			728,692

The buildings were constructed using conventional wood framing techniques and materials, including load bearing masonry and stud walls, wood floor joists, and engineered floor and roof trusses. The buildings are founded on traditionally reinforced concrete slabs. There are no crawlspaces or full basements, although some units are partially below grade on the first floor entry side. Exterior walls are finished with brick masonry. A portion of the clubhouse/rental office is finished with vertical wood board siding.

SHEET 2

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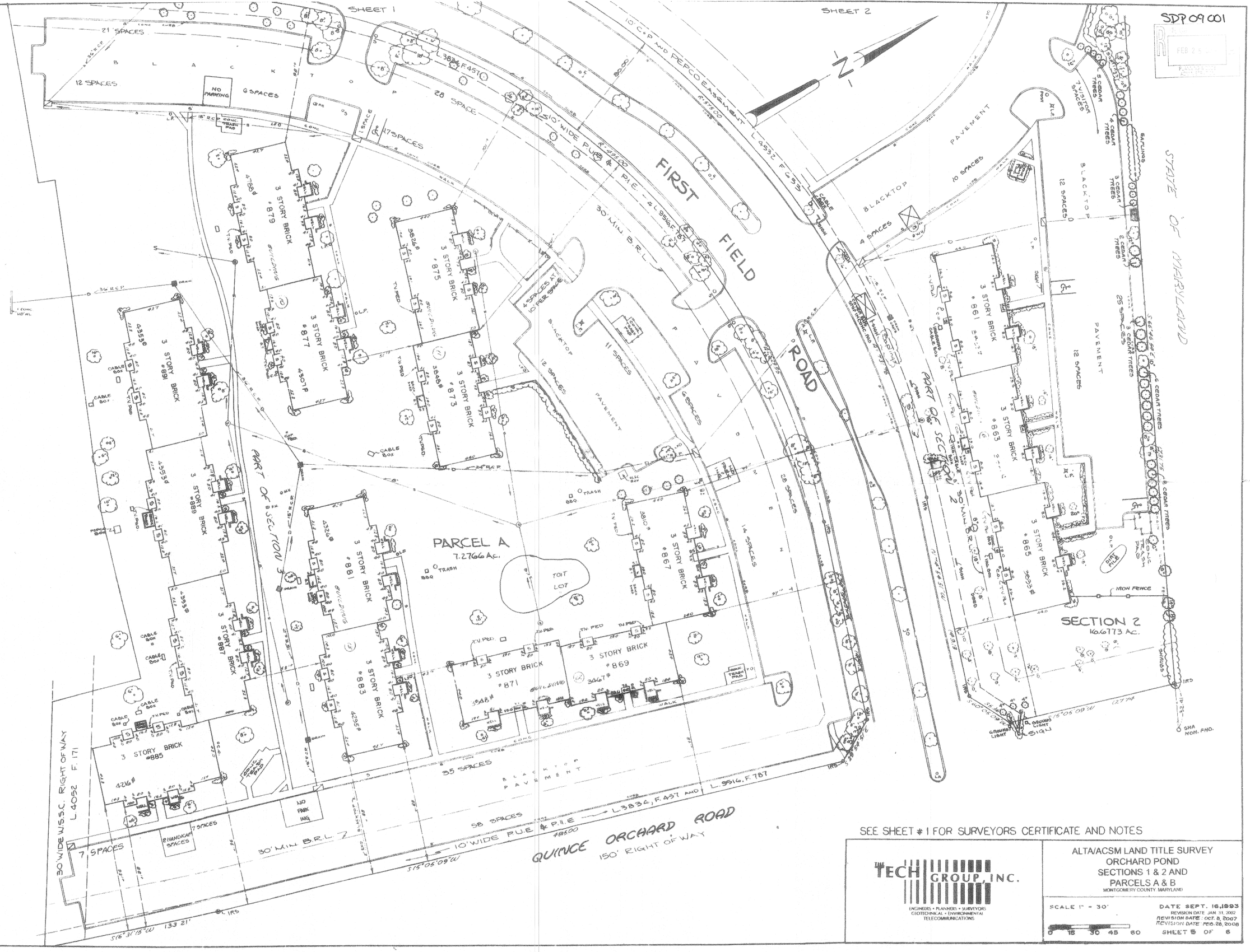
ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B
MONTGOMERY COUNTY, MARYLAND

SCALE 1" = 30'
0 15 30 45 60

DATE SEPT. 16,1993
REVISION DATE: JAN 31, 2002
REVISION DATE: OCT 8, 2007
REVISION DATE: FEB 06 2008
SHEET 4 OF 6

SDP 09 001



SEE SHEET # 1 FOR SURVEYORS CERTIFICATE AND NOTES

THE TECH GROUP, INC.
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GEOTECHNICAL • ENVIRONMENTAL
TELECOMMUNICATIONS

ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B
MONTGOMERY COUNTY MARYLAND

SCALE 1" = 30'

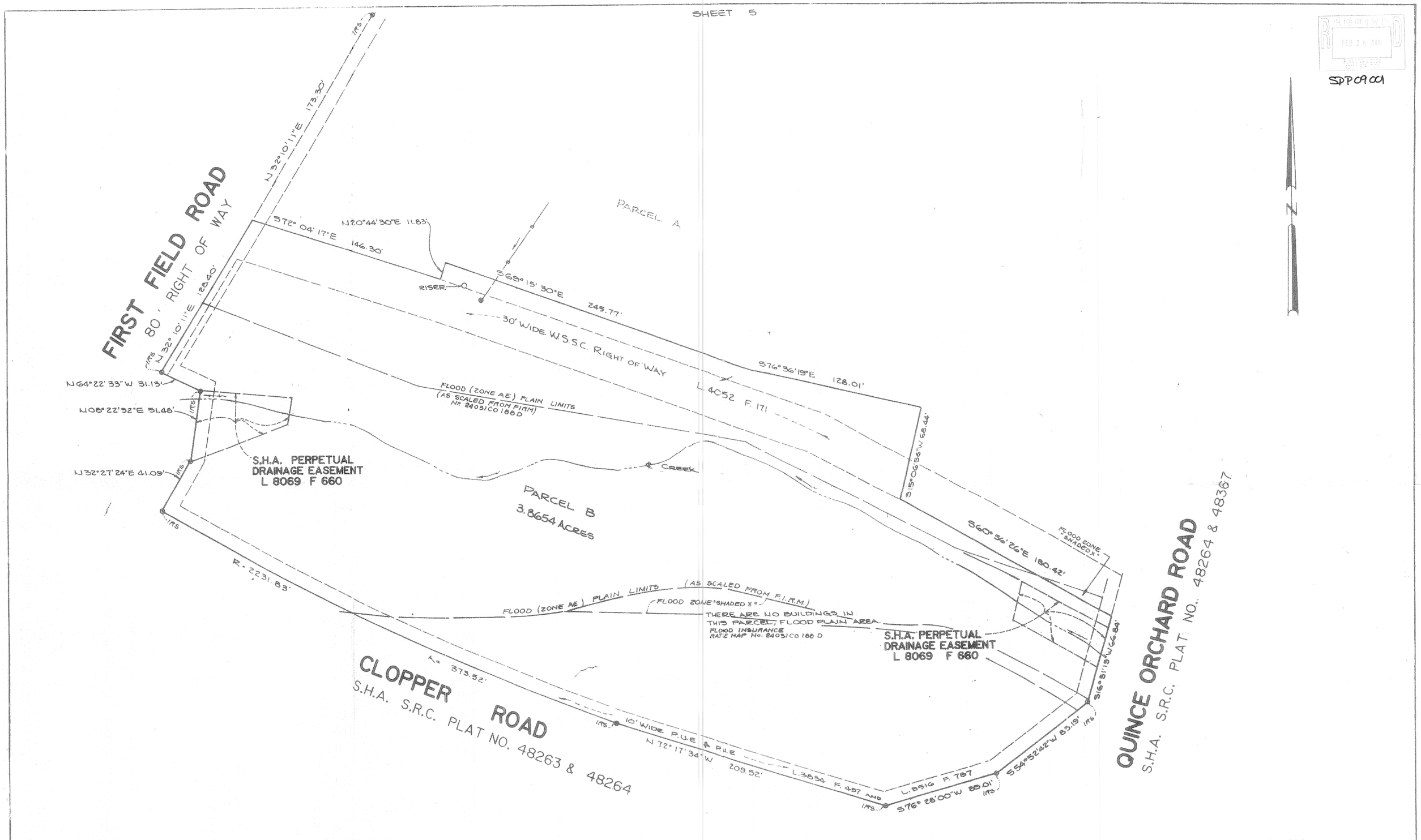
0 15 30 45 60

DATE SEPT. 16, 1993
REVISION DATE JAN 11, 2002
REVISION DATE: OCT. 8, 2007
REVISION DATE: FEB. 28, 2008

SHEET 5 OF 6

RECEIVED
FEB 2 5 2009
PLANNING DIVISION

SDP09001



SEE SHEET # 1 FOR SURVEYORS CERTIFICATE AND NOTES

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ENGINEERS • PLANNERS • SURVEYORS
GEOTECHNICAL • ENVIRONMENTAL
TELECOMMUNICATIONS

ALTA/ACSM LAND TITLE SURVEY
ORCHARD POND
SECTIONS 1 & 2 AND
PARCELS A & B
MONTGOMERY COUNTY, MARYLAND

SCALE 1" = 30'
0 15 30 45 60

DATE SEPT. 16, 1993
REVISION DATE JAN. 31, 2002
REVISION DATE: OCT. 6, 2007
REVISION DATE FEB. 26, 2008
SHEET 5 OF 5

BEFORE THE MAYOR AND CITY COUNCIL OF THE CITY OF GAITHERSBURG, MARYLAND

IN THE MATTER OF THE APPLICATION OF	*	
893 CLOPPER ROAD INVESTORS LLC	*	**Application No.** _____
FOR SCHEMATIC DEVELOPMENT PLAN	*	SDP 09001
APPROVAL IN THE MXD ZONE	*	

STATEMENT OF MASTER PLAN COMPLIANCE

The existing Orchard Pond Apartments complex located at the intersection of Quince Orchard Road and Clopper Road, and bisected by Firstfield Road, is a mature medium density residential complex containing 747 apartment units that were constructed in the mid-1970's. This property is located within the boundaries of Special Study Area 7, "Casey-Metropolitan Grove Road" in the City's Master Plan adopted April 6, 2004.

The Casey-Metropolitan Grove Road Special Study Area was described in the Land Use Plan as being a dynamic area of future city growth. The primary focus of the Special Study Area analysis was the Casey and the Metropolitan Grove properties located in close proximity to the existing MARC rail station. The land use plan identified the CSX right-of-way and tracks as being a major man-made feature that divides the study area ". . . into two distinct areas" (Plan, p. 120). The Orchard Pond project was included in the area designated as the "Southern Properties" and was described as ". . . a medium density residential apartment complex, known as Orchard Pond, . . .".

While the bulk of the analysis found in the April 2004 Master Plan dealt with the "Northern Properties," the land use recommendations for the "Southern Properties," particularly the Orchard Pond property, were very clear and direct. The overall Master Plan recommendation for the area of the "Southern Properties" was "Redesignate as mixed use residential-office-commercial with a zoning classification of MXD." (Plan, p. 134). Continuing, the Master Plan stated:

> "The objective for this portion of the study area will involve redevelopment associated with the future Corridor Cities Transit (CCT) Station and potential rail yard location." (Plan, p. 134).

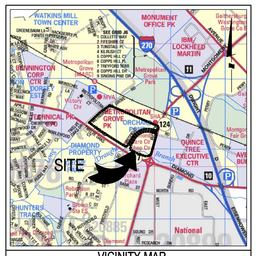
Finally, specifically related to the property which is the subject of this rezoning application, the Master Plan recommended:

> "The medium density residential complex (Orchard Pond) contains 747 apartment units that were constructed in 1975. This is an ideal location for future redevelopment of higher density residential and/or office uses. The site has immediate access to three roadways that is in close proximity to the transit station." (Plan, p. 134).

This Schematic Development Plan Application seeks approval of the first phase of a mixed use project (residential – commercial) as envisioned in the 2004 Master Plan. This project, with its potential ultimate combination of residential and commercial uses, and its transit orientation, echoes the recommendations of the Master Plan.

The subject application for future use of the "Orchard Pond Apartments" is both appropriate and consistent with the Master Plan recommendations.

ORCHARD POND
PHASE 1
SCHEMATIC DEVELOPMENT PLAN



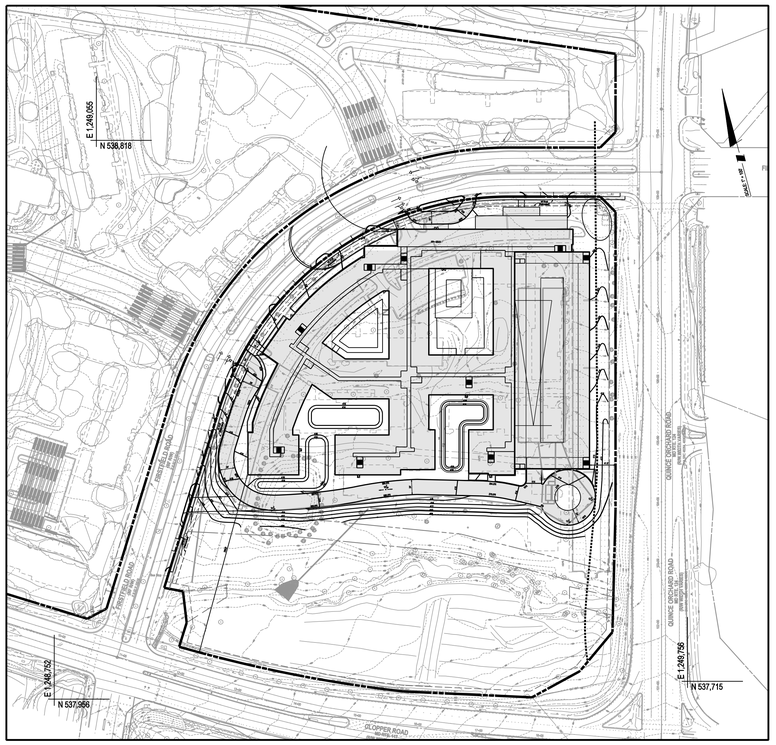
VICINITY MAP
SCALE: 1"=2000'

DEVELOPER
JEFFERSON APARTMENT GROUP
8300 GREENSBORO DRIVE, SUITE 400
McLEAN, VIRGINIA 22102
(703) 563-5200

ARCHITECT
LESSARD GROUP, INC.
8521 LEESGURG PIKE, SUITE 700
VIENNA, VIRGINIA 22182
(703) 770-3529

CIVIL ENGINEER
LOIEDERMAN SOLTESZ ASSOCIATES, INC.
2 RESEARCH PLACE, SUITE 100
ROCKVILLE, MARYLAND 20850
(301) 948-2750

ATTORNEY
MILLER, MILLER & CANBY
200 B MONROE STREET
ROCKVILLE, MARYLAND 20850
(301) 762-5212



GENERAL NOTES

1. Site Area:
   Section 1: 15.54 acres
   Section 2: 16.67 acres
   Section 3, Parcel A: 7.27 acres
   Section 3, Parcel B: 3.86 acres
   43.36 acres
2. Watershed: Great Seneca Creek, Long Draught Branch, Use I.
3. Wetland Area: 0.03 Acres. Wetland information on this plan is from a study com by: LSA, Inc. dated January 2009.
4. Stream valley buffer (SVB): 3.64 acres.
5. Floodplain Area: 1.72 acres
6. The topography shown on this plan is from aerial topography and field survey, Dec. 2008 - Jan. 2009.
7. Proposed Use: Residential, 410 Multi -family dwelling units.
8. Development Data:

	Required	Provided
a. Maximum building height:	no greater than distance to non MXD zone adjoining property	60'
b. Green area:	40%	58%
c. Density:		37.70 d.u./ acre
d. Lot coverage:		23.7%
e. Parking:	656	1.6/ d.u.
f. Minimum building setback from adjacent non-MXD zone:	100'	N/A

LEGEND:

382	EXISTING GRADE
380	PROPOSED GRADE
	EXISTING BUILDING
	EXISTING RIGHT OF WAY
10" W	PROPOSED WATER LINE
EX.12"W	EXISTING 12" WATER LINE
8" S	PROPOSED SEWER
EX.8"S	EXISTING 8" SEWER
PROP. S.D.	PROPOSED STORM DRAIN
EX.21"RCP	EXISTING STORM DRAIN
	STORM FILTER

SHEET INDEX

SHEET 1 COVER SHEET
SHEET 2 SCHEMATIC DEVELOPMENT PLAN
SHEET 3 SCHEMATIC DEVELOPMENT PLAN
SHEET 4 SCHEMATIC LANDSCAPE PLAN
SHEET 5 SCHEMATIC LANDSCAPE PLAN
SHEET 6 SCHEMATIC LANDSCAPE PLAN DETAILS

ARCHITECTURE
A.01 ARCHITECTURAL SITE PLAN
A.02 CONCEPT ELEVATIONS
A.03 CONCEPT ELEVATIONS

Joint Hearing - MCC & PC
SDP 09 001
5

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. _____, EXPIRATION DATE: _____

SCHEMATIC DEVELOPMENT PLAN
COVER SHEET

Loiederman Soltesz Associates, Inc.
ROCKVILLE OFFICE
2 Research Place, Suite 100
Rockville, MD 20850
t. 301.948.2750 f. 301.948.9067
Engineering
Planning
Surveying
Environmental Sciences
Rockville
Lanham
Frederick
Waldorf
Leonardtown
www.LSAssociates.net

NO.	REVISIONS	BY	DATE
2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSB

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

OWNER/DEVELOPER/APPLICANT

COMPANY NAME JEFFERSON APARTMENT GROUP
ADDRESS 8300 GREENSBORO DRIVE
ADDRESS SUITE 400
CITY STATE McLEAN, VA 22102
PHONE # (703) 563 5200
CONTACT NAME MALCOLM VAN DE RIET

COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NUMBER 20811199

MAP 19 GRID A-8,B-8
TAX MAP FT22
ZONING CATEGORY: MXD
WSSC 200' SHEET 244NW11
SITE DATUM
HORIZONTAL: NAD83
VERTICAL: NAVD83

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 100'
SHEET 1 OF 6
PROJECT NO. 0774-08-00

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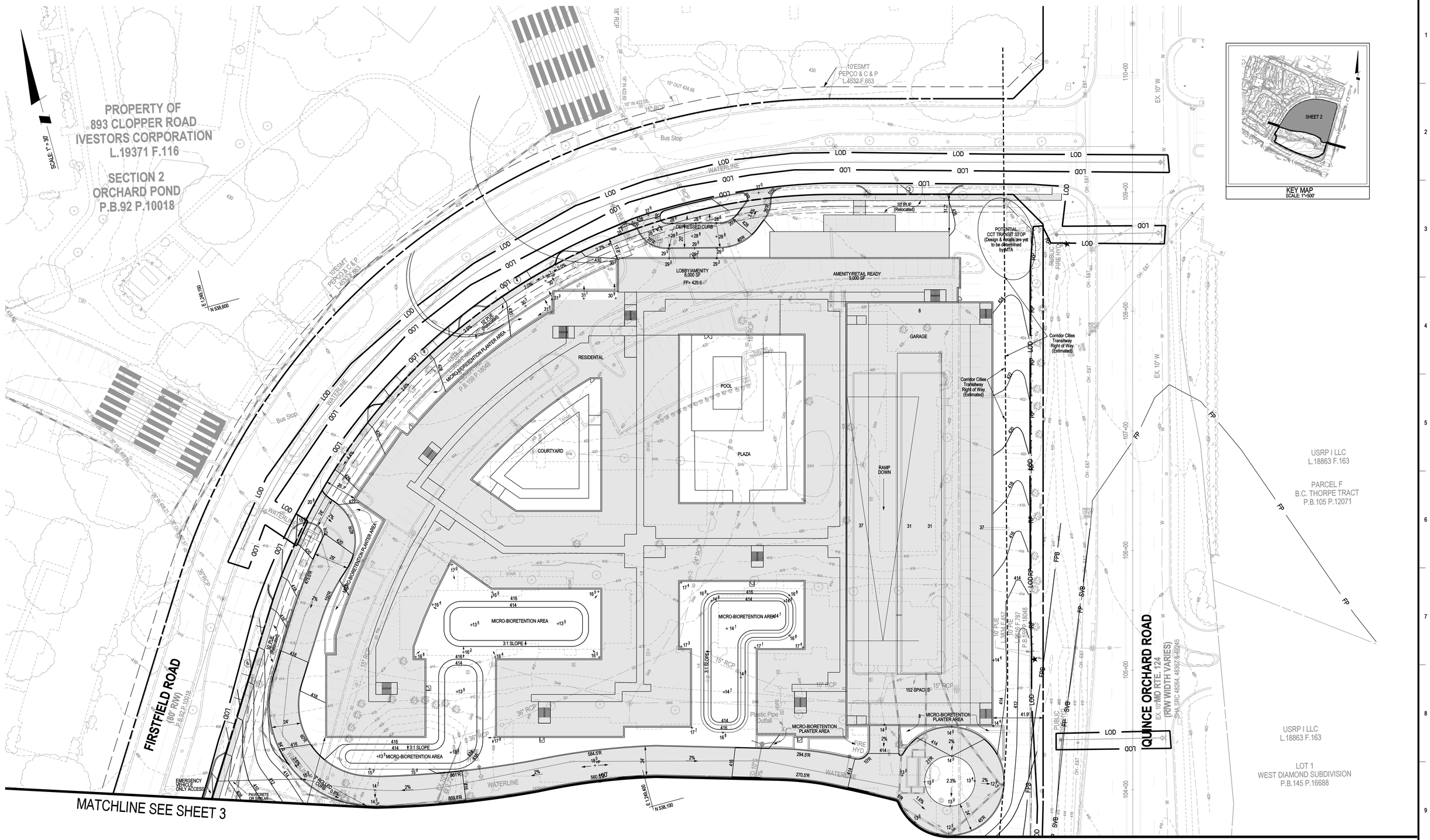

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LICENSE NO._____ EXPIRATION DATE:_____

SCHEMATIC DEVELOPMENT PLAN

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B

GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'

SHEET 2 OF 6

PROJECT NO. 0774-08-00

Loiederman Soltesz Associates, Inc.

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NO.	REVISIONS	BY	DATE
2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSB

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OWNER/DEVELOPER/APPLICANT

COMPANY NAME JEFFERSON APARTMENT GROUP
ADDRESS 8300 GREENSBORO DRIVE
ADDRESS SUITE 400
CITY STATE McLEAN, VA 22102
PHONE # (703) 563 5200
CONTACT NAME MALCOLM VAN DE RIET

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PERMITTED USE NUMBER 20111199

MAP 19 GRID A-8,B-8

TAX MAP	ZONING CATEGORY:
FT22	MXD
WSSC 200' SHEET	
244NW11	

SITE DATUM
HORIZONTAL: NAD83
VERTICAL: NAVD83

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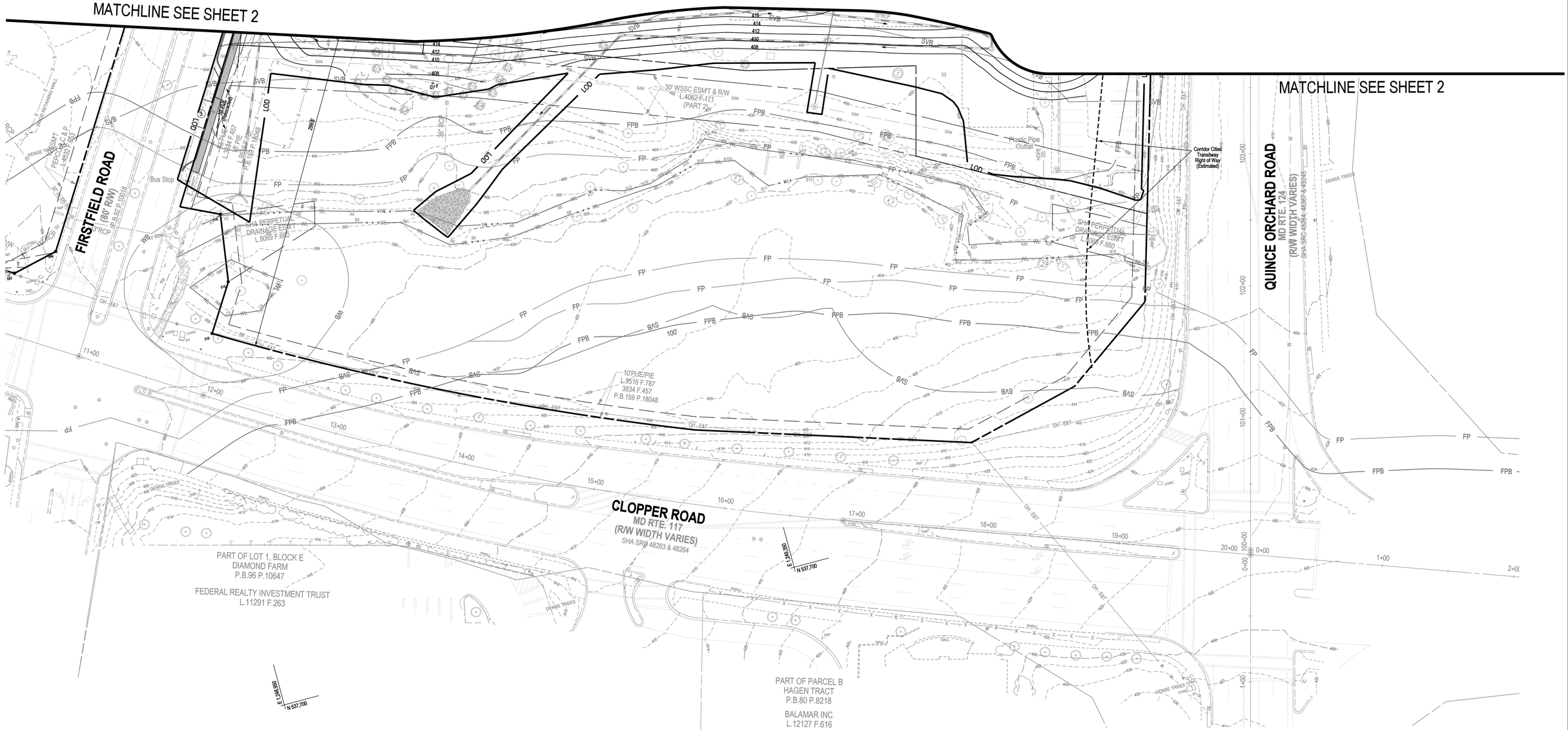

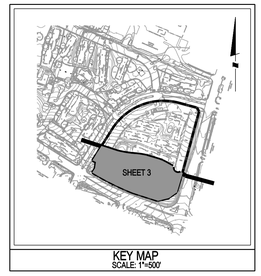

KEY MAP
SCALE: 1"=500'

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SECTION 3
PARCELS A & B

GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

ONE INCH 1" = 30'

SHEET 3 OF 6

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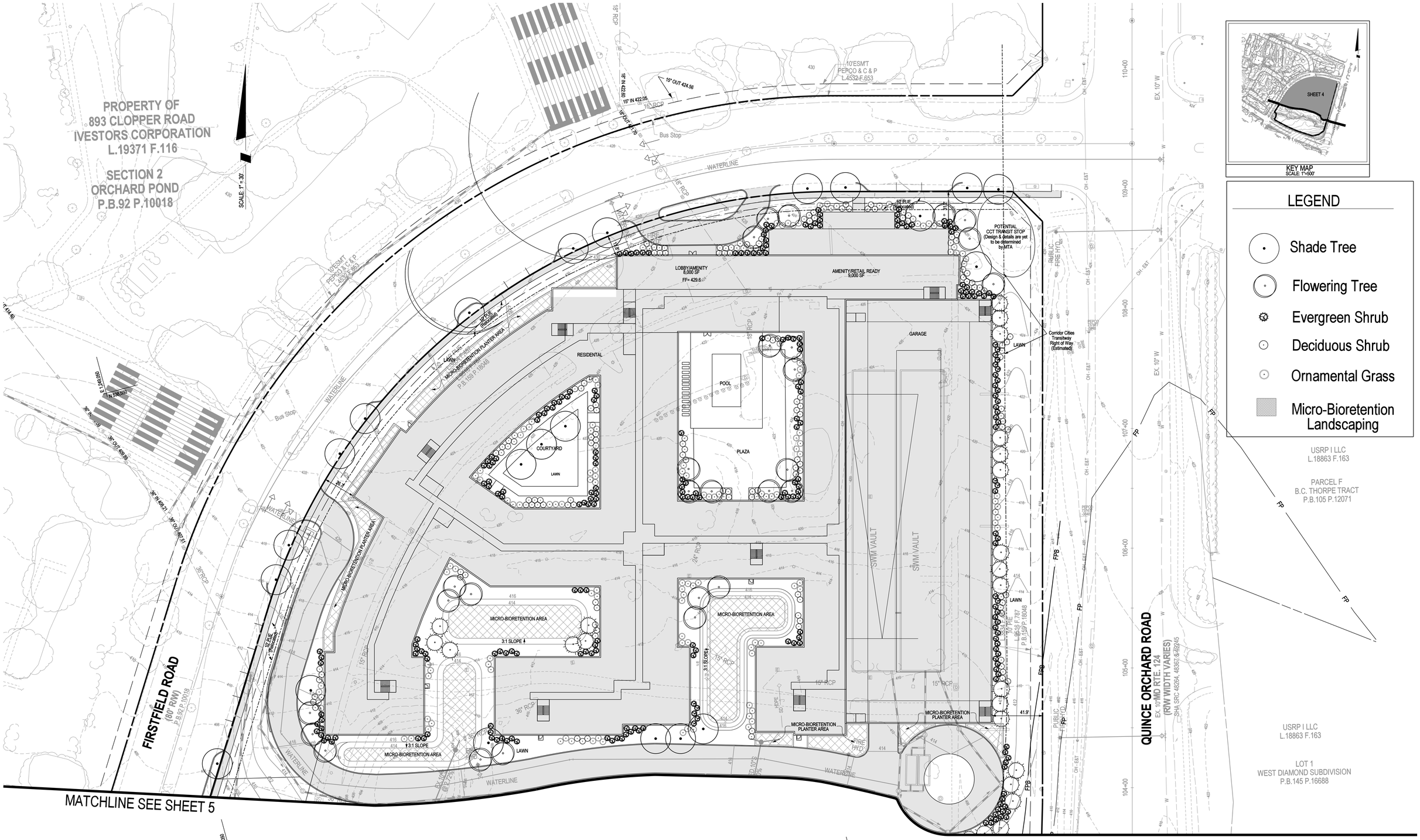

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TAX MAP FT22
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CONCEPTUAL LANDSCAPE PLAN

PHASE 1
ORCHARD POND
PARCEL A & B
SECTION 3
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

ONE INCH
1" = 30'
SHEET 4 OF 6
PROJECT NO. 0774-08-00

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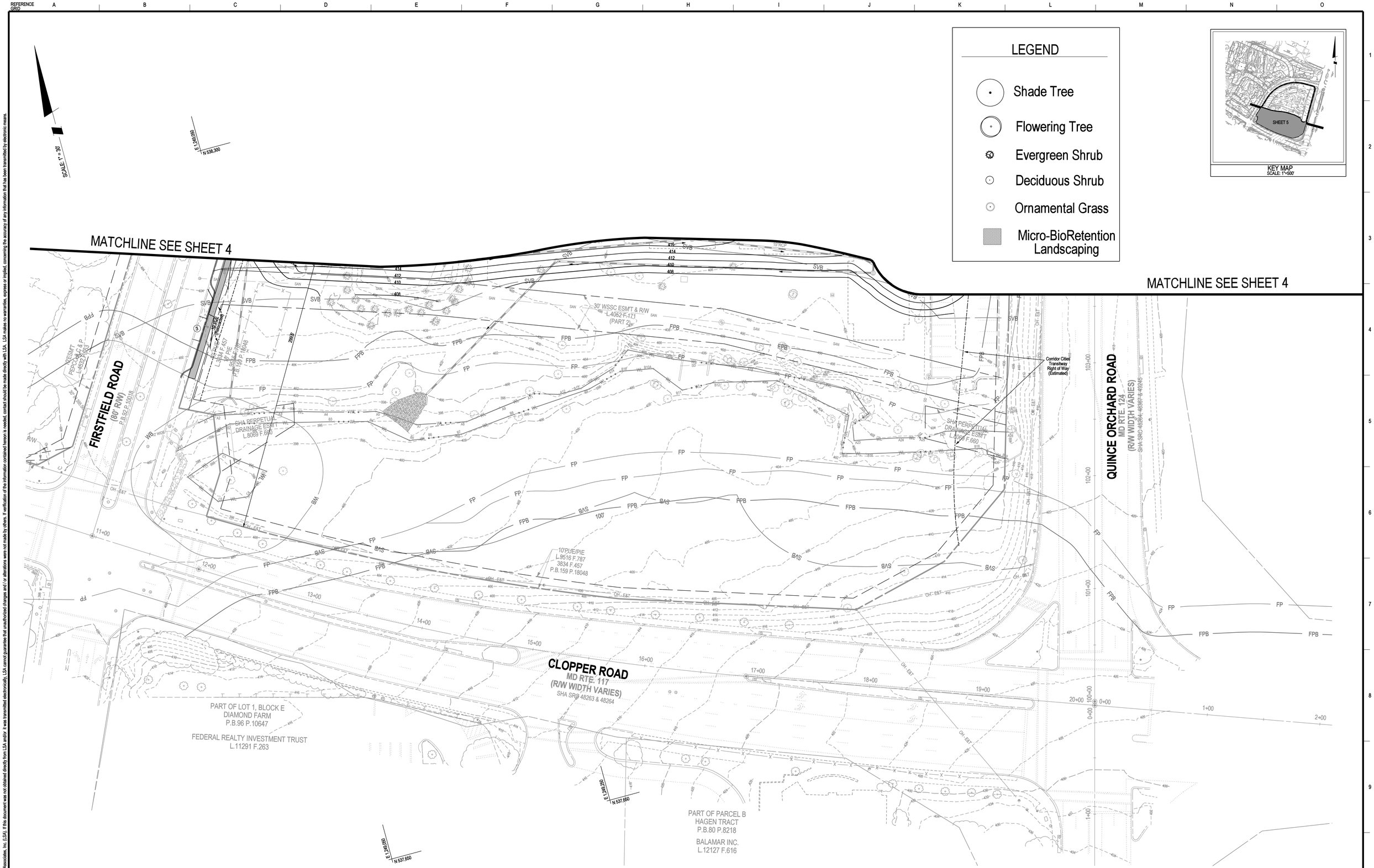

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SHEET 5 OF 6

PROJECT NO. 0774-08-00

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REFERENCE GRID A B C D E F G H I J K L M N O

GENERAL CONDITIONS

I. SCOPE
- A. The landscape contractor shall provide all materials, labor and equipment to complete all landscape work as shown on the plans, plant list and specifications.
- B. Total number of plants shall be as drawn on the landscape plan. If this total differs from the plant key, the landscape contractor is to notify the landscape architect before the bid date.

II. STANDARDS
- A. All plant material will conform to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen (A.A.N.) conform in general to representative species.
- B. The plant material must be selected from nurseries that have been inspected by state or federal agencies. Any certificates required must be provided to owner or representative upon delivery of materials.

III. SUBSTITUTIONS
- A. If a plant is found not to be suitable or available, is to notify the landscape architect before bidding.
- B. The owner or landscape architect is then required to select a reasonable alternate or to inform all landscape contractors of the availability of the original plant.
- C. If a substitute is selected, it must be of the same size, value and quality as the original plant.
- D. Substitutions to be made with written approval of M-NCPPC.

IV. UTILITIES
- A. The landscape contractor shall notify utility companies prior to construction and call "Miss Utility" at 1(800)257-7777, to locate main utility lines.
- B. If there is a conflict with the utilities and the planting, the landscape contractor shall notify the landscape architect or owner immediately. Any cost of relocating caused by the contractors' failure to notify shall be borne by the contractor.

V. DRAINAGE
- A. Plants shall not be planted in situations that show obvious poor drainage. Such situations shall be brought to the attention of the landscape architect or owner, and if they deem necessary, the plants shall be relocated or the contract shall be adjusted to allow for drainage correction at a negotiated cost.

VI. WORKMANSHIP
- A. During planting, all areas shall be kept clean and neat, and all reasonable precautions shall be taken to avoid damage to existing plants, turf and structures.
- B. Upon completion, all debris and waste material resulting from planting operations shall be removed from the project and the area cleaned up.
- C. Any damaged areas shall be restored to their original condition at the cost of the contractor.

I. PLANT MATERIAL

I. STANDARDS
- A. Bare root
  1. Bare rooted shrubs shall be dug with adequate fibrous roots.
  2. Roots shall be protected during handling and transit and planted to guard against drying out and damage. If not planted soon after arrival, material must be heeled in and maintained.
- B. Balled and Burlapped (B&B)
  1. Balled and Burlapped plants shall be dug with firm natural balls of earth.
  2. Ball sizes shall be in accordance with A.A.N. specifications.
- C. Container grown stock shall have been grown in a container long enough for the root system to have developed sufficiently to hold soil in container together.
- D. All plant material shall be nursery grown unless otherwise specified. Pruning shall be done before planting or during the planting operation.
- E. All plant material to be transported in covered container. Locally available material may be covered with a burlap or similar cover to keep from drying out, provided the transporting vehicle maintains a maximum of 35 mph.
- F. Anti-desiccants shall be applied on all materials dug while in foliage.
- G. Container stock may replace B&B as long as all other criteria are met.
- H. Same plant material for location near each other shall be similar in appearance. Hedge material will be similar enough in size and shape, etc. to create a uniform hedge.

II. MATERIALS
- A. ANTI-TRANSPIRANTS
  Anti-transpirants shall be an emulsifiable concentrate used to retard excess water loss without harming normal transpiration.
- B. BACK FILL MIXTURES
  1. Back fill mixture shall be 1/3 existing soil mixed with 1/3 organic material (or peat) and 1/3 topsoil.
  2. If any other additives are found to be needed at the time of planting, it shall be added only with the approval of the landscape contractor, landscape architect and owner or owner's representative.
  3. Fertilizer is to be added depending on the size of the plant and the manufacturer's recommendation.
  - * Trees - Use tree fertilizer as required by particular species
  - * Shrubs - Use tree fertilizer as required by particular species
  - * Ground Cover, Vines & Herbaceous Plants - Use tree fertilizer as required by species.
- C. TOPSOIL
  1. If used, top soil shall be sandy loam and uniform in color and composition.
  2. It shall be free of stones, roots, lumps, plants and other debris over 1 1/2".
  3. It shall not contain toxic substances harmful to plant growth.
  4. Top soil shall have a Ph range of 5.0 to 7.0 and the organic matter shall be a minimum content of 1.0%
- D. ORGANIC MATTER
  1. Organic Matter used in back fill shall be peat or other material approved by the landscape architect or owner.
- E. PEAT MOSS
  1. Type I - sphagnum peat moss - is finely divided with a Ph of 4.0 to 5.0.
- F. LEAF MOLD
  1. This a composted leaf material to be used with the approval of landscape architect.
- G. COMPOST
  1. To be organic matter composted and aged by accepted methods to be used only when specified or by approval of landscape architect.
- H. DOLOMITE LIME
  1. This is agricultural grade limestone containing total carbonates of 85% with a minimum of 30% magnesium carbonates.
- I. FERTILIZER
  1. Fertilizer shall be granular, packet or pellet with 35% to 85% of the total nitrogen in a slowly available form. To be applied by manufacturers methods.
  2. Fertilizer shall be a complete fertilizer with a minimum analysis as required by soil test and plant material.
- J. TRACE ELEMENTS
  1. These slow release materials containing zinc (Zn), molybdenum (Mo), iron (Fe), copper (Cu), boron (B), and magnesium (Mn). To be applied as per manufacturers directions as deemed necessary by soil test.

III. BACKFILLING A TREE PIT
- A. Cut rope or wire on ball of tree and pull burlap back to the edge of the root ball. Remove all plastic wraps and twine. Roll burlap 1/3 of the way down the root ball.
- A. Backfill tree pit with a soil mixture stated in the specifications.
- C. Mix soil amendments in the mixture either prior to filling pit or as pit is being filled
- D. Make sure plants remain straight during backfilling procedure.
- E. Backfill sides of tree pit halfway with soil mixture and tamp as pit is being filled.
- F. Finish backfilling sides of tree pit and tamp firmly.
- G. NEVER COVER TOP OF TREE BALL WITH SOIL. Top of root ball should be ¼ the root ball height above the tree pit.
- H. Form a 4" saucer above existing grade and around the outer rim of the tree pit.
- I. Mulch top of root ball and saucer within 48 hours to a minimum depth of 2" and not exceed 3".
- J. Water thoroughly the interior of the tree saucer until it is filled. EVEN IF IT IS RAINING. Provide enough water to ensure saturation of the root ball.
- K. Prune out any dead, conflicting or broken branches.
- L. In extremely hot weather, reduce foliage surface by pruning or stripping of foliage.
- M. Remove all tags, labels, strings, etc. from the tree.

IV. TREES BRACED BY STAKING
- A. Choose the correct size and number of stakes and size of hose and wire according to the Tree Support Detail and plant requirements. Staking shall be completed within 48 hours of planting the tree.
- B. Spacing stakes evenly and vertically on the outside of the tree ball drive firmly into the ground (stakes can be slightly angled away from the tree).
  NOTE: Never drive a stake through the tree ball, as it will damage the tree's root system. Stakes to be 2/3 above ground, 1/3 below.
- C. Cut pieces of reinforced hose long enough to loop around the trunk of the tree.
- D. Place the hose around the trunk at the height required to provide optimum support. Then run the 12 gauge wire through the hose and pull both ends horizontally beyond the stake by 2'.
- E. Cut the wire to sufficient length and then twist the wire at the rubber hose to keep it in place.
- F. Run both ends of wire together around the stake twice and then twist wire back onto itself to secure it. Cut off excess wire and stake.
- G. The above procedures are to follow for each stake.
- H. STAKES
  1. Stakes shall be 2"x2" hardwood, reasonably free of knots to be long enough for 1/3rd to be driven into the soil, and 2/3rds above the soil surface.
- G. WIRE
  1. Wire shall be 12 or 14 gauge galvanized steel or acceptable equal, depending on the size of the tree.
- J. CABLE
  1. Cable shall be 1/4" or 3/16" galvanized steel, depending on size of tree.
- K. CLAMPS
  1. clamps shall be galvanized or zinc and large enough to hold wires or wires used.
- L. HOSE
  1. Hose shall be corded rubber, uniform in color and either 3/4" to 1" in diameter, depending on the size of the tree.
- M. MULCH
  1. Material shall be double s'redded composted hardwood bark, such as "silvabark" or approved equivalent.
  2. Material shall be mulching grade, uniform in size and free of foreign or harmful matter.

V. INSPECTION
- A. Plants may be subject to inspection and approval by the owner or owners representative at the place of growth for conformity to specification requirements as to quality, size and variety. This will be at the owner's expense.
- B. Plants damaged in handling or transportation may be rejected by the owner or owner's representative.

II. PLANTING PROCEDURES FOR TREES

I. PREPARING TREE PIT
- A. The tree pit must be a minimum of 2 times the size of the root ball at the top.
- B. The walls of tree pit shall be dug so that they are scarified.
- C. The tree pit shall be deep enough to allow 1/3 of the root ball to be above the existing grade. Any loose soil at the bottom of the pit shall be tamped by hand or with the bucket of the backhoe.
- D. Dig pit 6" deeper than depth required for root ball. Fill bottom of pit with 6" compacted soil mix adjusting depth to insure top of root ball is 1/4 above the surface of the soil.

II. PLACING TREE IN THE PIT
- A. Place the tree in the pit by lifting and carrying the tree by its ball (never lift by branches or trunk) and then lowering it into the pit. Contractor is responsible for providing any machinery necessary to lift and move plant material and to insure it is not dropped.
- B. Set the tree straight and in the center of the pit with the most desirable side of the tree facing toward the prominent view (sidewalk, building, street, etc.).
- C. Any dropped material may be rejected by owner or representative. Any dropped material should be flagged with red flagging on its trunk and noted on a plan. Should plant die, it will be replaced by the contractor at no cost to the owner.

III. PLANTING PROCEDURES FOR SHRUBS

I. PREPARING SHRUB PIT
- A. For a single shrub, the pit shall be dug large enough for the proper setting of the root ball (4" wider than root ball at base. 2 to 3 times the width of the root ball at the top).
- B. For a shrub mass planting, the entire bed area shall be rototilled 3 to 4 " deep. Each shrub pit shall be excavated for the proper setting of the root ball.
- C. For a hedge, a trench shall be dug large enough for the proper setting of all of the plants root balls (the trench shall be 2 times wider than the root balls).
- D. Form a compacted base in the bottom of the hole to adjust plant height to proper location. Compact sufficiently to prevent settling.

II. PLANTING SINGLE SHRUBS AND BACKFILLING PIT
- A. Remove all plastic wraps, twine, containers, etc.
- B. Place the plant in the pit by lifting and carrying in by the root ball.
- C. Set the plant straight and in the center of the pit with the most desirable side facing toward the prominent view
- D. Use a soil mixture as specified.
- E. Make sure the plant remains straight during backfilling procedure.
- F. Backfill side of the pit halfway with soil mixture and tamp as the pit is being filled.
- G. Pull the burlap back 1/3 the way down the root ball. Make sure burlap does not become exposed above soil surface.
- H. Finish backfilling the sides of the shrub pit and tamp firmly.
- I. Form a saucer above the existing grade and around the planting pit
- J. Mulch top of root ball and saucer a minimum of 2" depth and not to exceed 3" in depth.
- K. Water thoroughly, the interior of the shrub saucer to insure root ball is saturated. EVEN IF IT IS RAINING.
- L. Prune out any dead, conflicting or broken branches.
- M. Remove all tags, labels, strings, etc. from the plant.

III. PLANTING A SHRUB MASS
- A. Follow the same procedure as for a single shrub. (Section II A-M)
- B. Edge and rake the entire planting bed to obtain uniform surface.
- C. Mulch the entire planting bed a minimum of 2" depth and not to exceed 3" depth.
- D. Water the entire planting bed thoroughly. EVEN IF IT IS RAINING. To saturate top 2" of soil.
- E. Prune out any dead, conflicting or broken branches.
- F. Remove all tags, labels, strings.

IV. PLANTING PROCEDURES FOR GROUND COVER

I. PREPARING GROUNDCOVER BED
- A. The ground cover bed shall be loosened prior to planting by one of the following methods: rototilling, back-hoeing and rototilling or by picking (generally done on small areas or on slopes). Soil shall be loosened to a depth of 4" to 6".
- B. Soil additives for the ground cover bed shall be peat and topsoil. (2" deep) after the soil has been loosened and additives then worked into the bed by one of the following methods: rototilling, back-hoeing and rototilling or by picking (in which soil additives are spread by hand into the individual plant pockets and worked into the soil by pick).
- C. Fertilize in planting hole or use water soluble fertilizer at base of plants after planting.
- D. Mulch the entire ground cover bed to minimum 1" depth and not to exceed 2" in depth.

II. PLANTING GROUND COVER
- A. The ground cover planting holes shall be dug through the mulch with one of the following: hand trowel, shovel, bulb planter or hoe.
- B. Before planting, biodegradable pots shall be crushed and the top edges broken down below the surface. Non-biodegradable pots shall be removed. Unwrap any bound roots, do not break root ball.
- C. The ground cover (either potted or bare root) shall be planted:
  1. So that the roots of the plant are surrounded by soil below the mulch: potted plants being set so that the top of the soil in the pot is even with the existing grade, and bare root plants being covered up to the crown of the plant or soil level.
  2. At an equal distance apart (plans and specifications specify the "on center" (o.c.) distance for the ground cover). See spacing guide.
- D. The entire ground cover bed shall be edged and thoroughly watered.

V. SEEDING

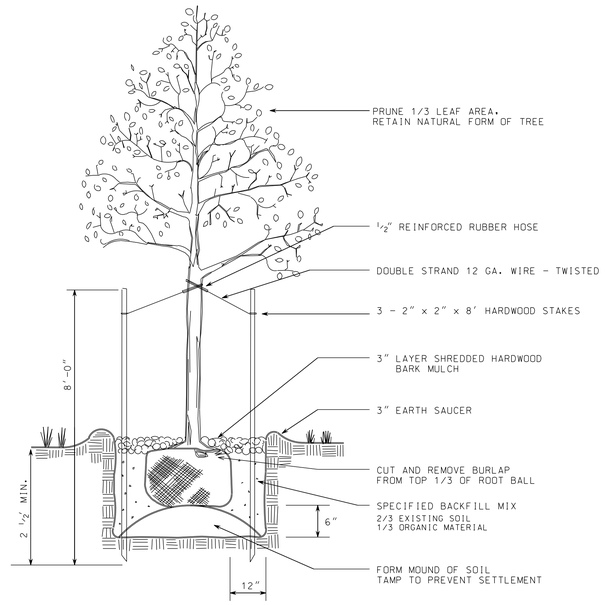
I. TEMPORARY SEEDING
- A. Vegetation - Annual Rye grass or Japanese Millet shall be used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetation cover, permanent seeding is required.
  1. Seed Mixtures - Temporary Seeding
     Preferred: Annual Rye - Winter: 200-300 lbs./acre. (1/2 that amount for over seeding) Japanese Millet - Summer: 25lbs/acre. (These are preferred because existing and proposed native grasses and wildflowers may not compete well with certain grass species)
  2. If seed mixtures used are other than those preferred they must be from table 26 of "Standards and Specifications for Soil Erosion and Sediment Control" by the Maryland Department of Environmental Protection. Temporary plant material must be removed prior to seeding of other material.
  3. For sites having soil tests performed, the seeding and amendment rates shown in table 26 of "Standards and Specifications for Soil Erosion and Sediment Control" shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for temporary seeding.

II. PERMANENT SEEDING
- A. Seeding grass and legumes to establish ground cover for a minimum period of one year on all disturbed areas generally receiving low maintenance.

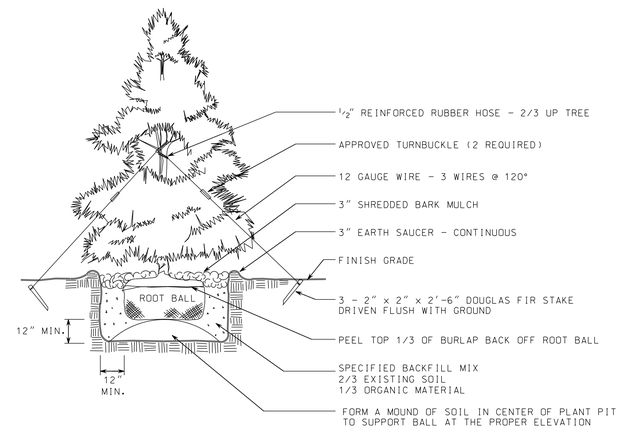
Seed mixtures:
1. Seed mixtures not from table 26 of "Standard and Specifications for Soil Erosion and Sediment Control" by the Maryland department of Environmental Protection, must be similar or approved by landscape architect. Additional planting specifications for exceptional sites such as shore lines, stream banks or dunes, or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Technical Field Office Guide. Section 342 - Critical Area Planting.
2. For sites having disturbed areas over 5 acres, the rates shown in table 26 of "Standards and Specification for Soil Erosion and Sediment Control" shall be deleted and the rates recommended by the soil testing agency shall be written in.
3. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs./acre). The above recommended soil amendments and hose stated in the soil test to be performed at the time of seeding, or as recommended by state agency and manufacturers products.
4. Do not fertilize area to be seeded around storm water management facilities.
5. Contractor to provide a final product of grass crop creating a lawn of uniform color and texture after three mowings.

VI. SOIL TESTING

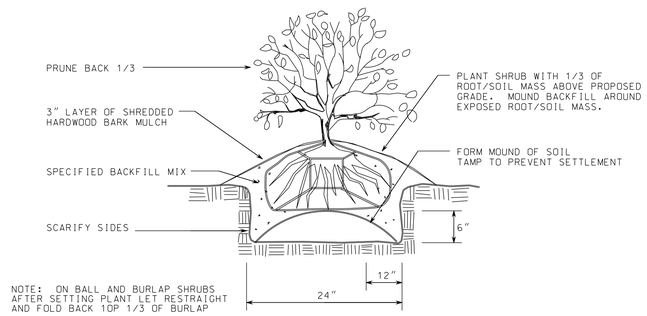
1. Contractor to perform soil test as per accepted methods by the local agricultural extension service.
2. Samples to be tested by reputable lab.
3. Contractor will be held responsible for notifying owner of any problems or deficits determined by the test results.
4. Corrections will be discussed and cost negotiated with owner.
5. Plant failure based on soil deficits or problems due to failure of contractor to take samples, will be replaced at the cost of the contractor after corrections have been made.



TREE PLANTING DETAIL
NOT TO SCALE

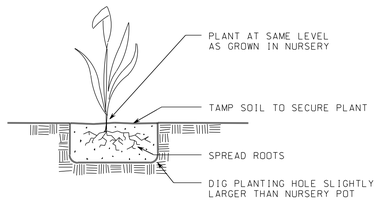


TREE PLANTING DETAIL - EVERGREEN TREE
NOT TO SCALE



NOTE: ON BALL AND BURLAP SHRUBS AFTER SETTING PLANT LET RESTRAIGHT AND FOLD BACK 1OP 1/3 OF BURLAP

BALL AND BURLAP SHRUB PLANTING DETAIL
NOT TO SCALE



HERBACEOUS PLANTING DETAIL
NOT TO SCALE

LEGEND

- Shade Tree
- Flowering Tree
- Evergreen Shrub
- Deciduous Shrub
- Ornamental Grass
- Micro-Bioretention Landscaping

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. _____, EXPIRATION DATE: _____

CONCEPTUAL LANDSCAPE PLAN DETAILS

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Surveying
Environmental Sciences
Rockville
Lanham
Frederick
Waldorf
Leonardtown

NO.	REVISIONS	BY	DATE
2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSB

MISS UTILITY NOTE

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OWNER/DEVELOPER/APPLICANT

COMPANY NAME JEFFERSON APARTMENT GROUP
ADDRESS 8300 GREENSBORO DRIVE
ADDRESS SUITE 400
CITY STATE McLEAN, VA 22102
PHONE # (703) 563 5200
CONTACT NAME MALCOLM VAN DE RIET

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MAP 19 GRID A-8,B-8
TAX MAP FT22 | ZONING CATEGORY: MXD
WSSC 200' SHEET 244NW11
SITE DATUM HORIZONTAL: _____ VERTICAL: _____

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = AS SHOWN
SHEET 6 OF 6
PROJECT NO. 0774-08-00

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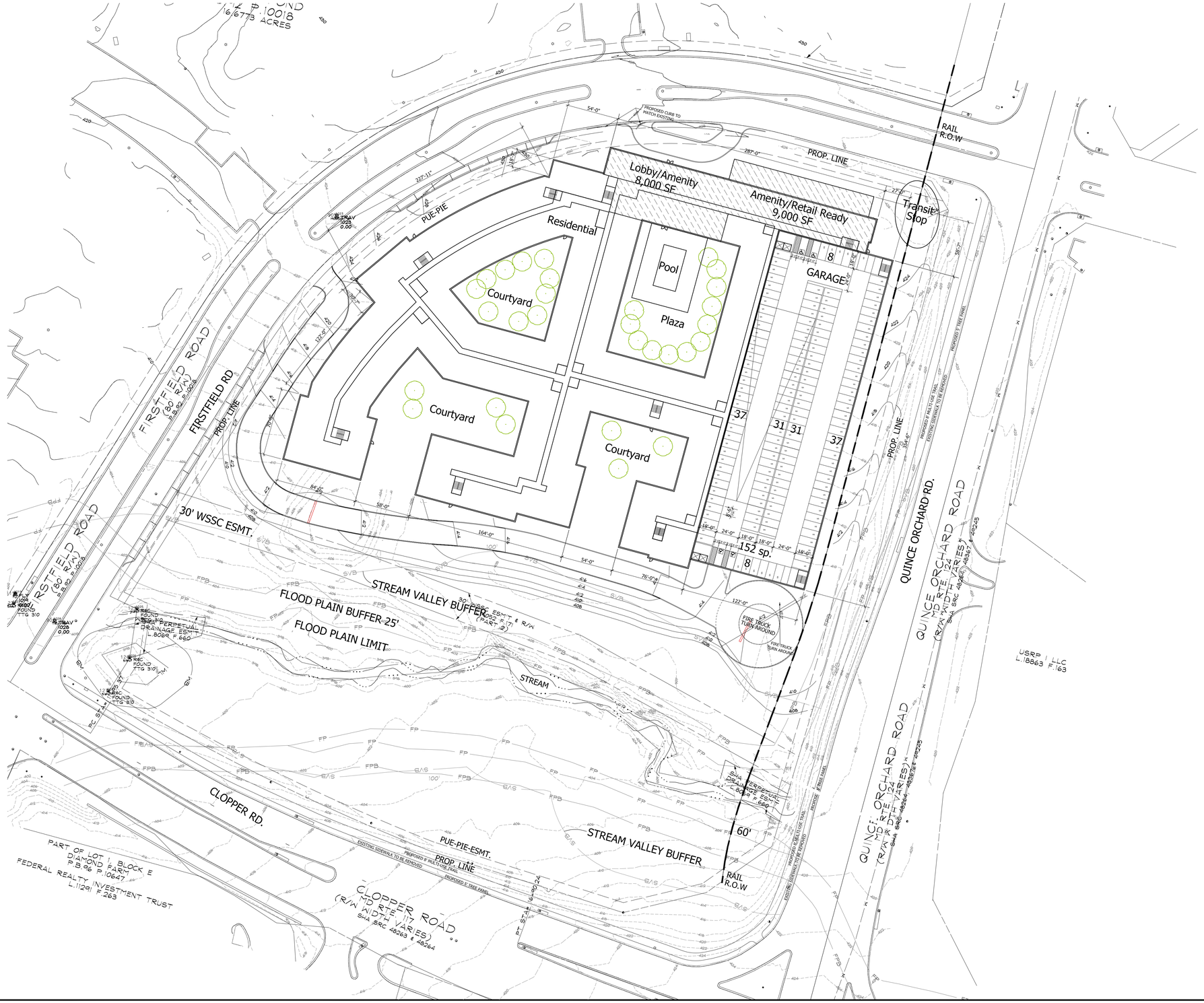

Joint Hearing - MCC & PC
SDP 09 001
6

LESSARD GROUP INC.
8521 LEESBURG PIKE, SUITE 700 | VIENNA, VA 22182

P: 703.760.9344 | F: 703.760.9328 | WWW.LESSARDGROUP.COM

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CONCEPT SITE DEVELOPMENT PLAN

ARCHITECTURAL SITE PLAN

DECEMBER 4, 2009

ORCHARD POND
CITY OF GAITHERSBURG, MD

JPI
JPI.015A

0 25' 50' 100'
1"=50'

JPI015aB1op05_r1

A.01

QUINCE ORCHARD ROAD, EAST ELEVATION

FIRSTFIELD ROAD, NORTH ELEVATION

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CONCEPT SITE DEVELOPMENT PLAN

CONCEPT ELEVATIONS

DECEMBER 4, 2009

ORCHARD POND
CITY OF GAITHERSBURG, MD

JPI
JPI.015A

0 20′ 40′
1"= 20′

A.02

FIRSTFIELD ROAD, WEST ELEVATION

CLOPPER ROAD, SOUTH ELEVATION

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CONCEPT SITE DEVELOPMENT PLAN

CONCEPT ELEVATIONS

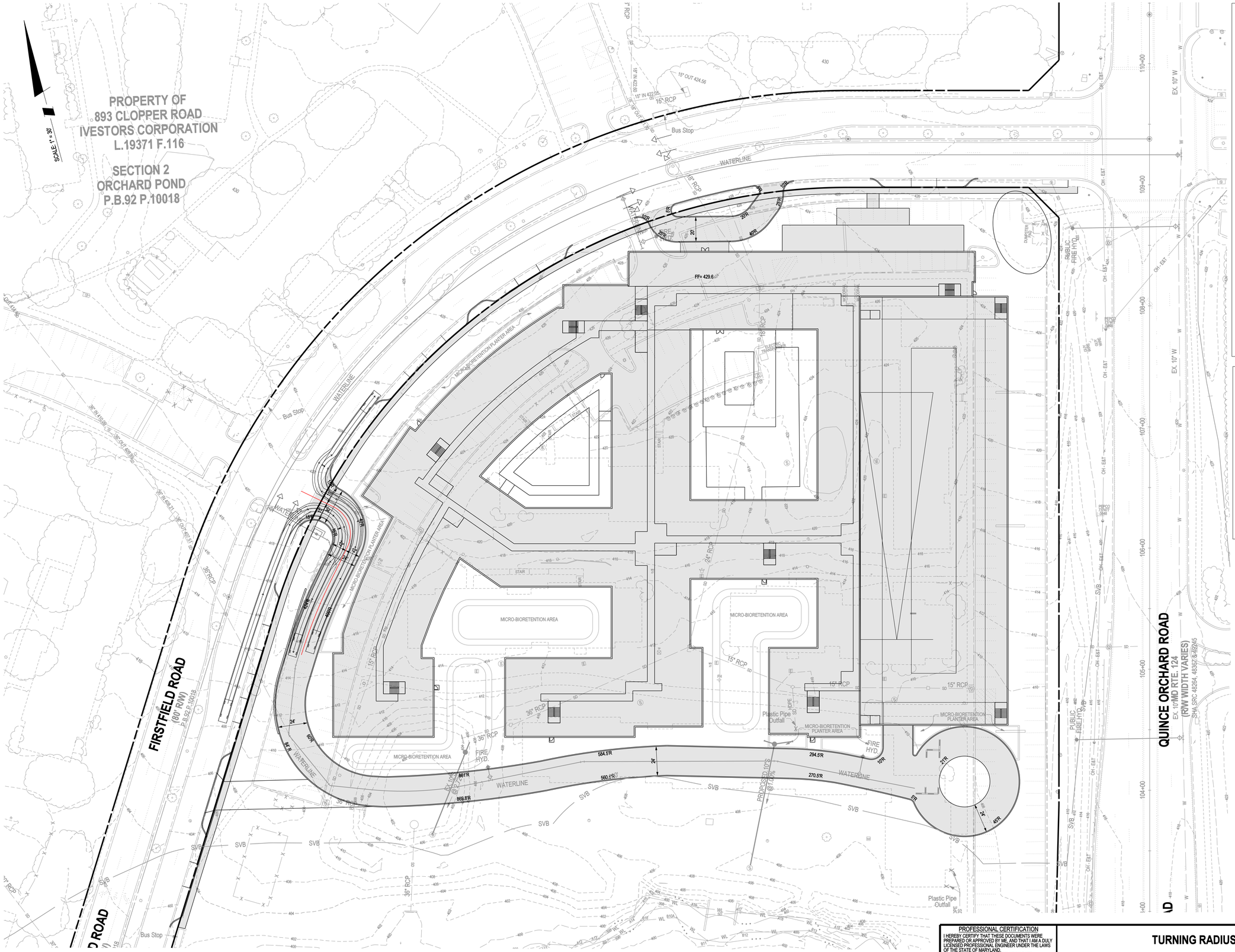
DECEMBER 4, 2009

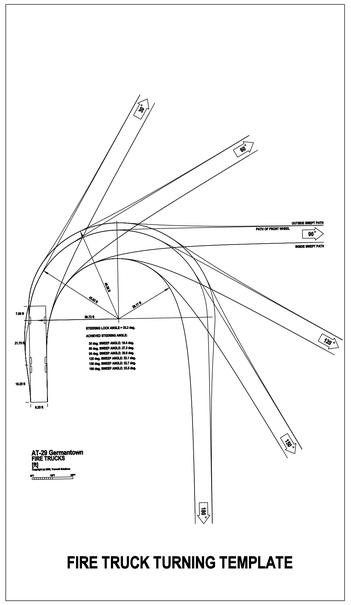
ORCHARD POND
CITY OF GAITHERSBURG, MD

JPI
JPI.015A

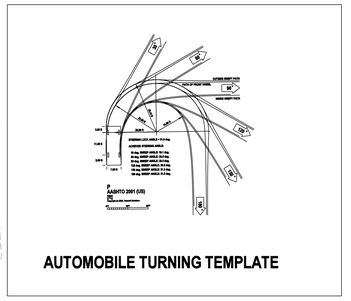
0 20′ 40′
1"= 20′

A.03





FIRE TRUCK TURNING TEMPLATE



AUTOMOBILE TURNING TEMPLATE

Joint Hearing - MCC & PC
SDP 09 001
7

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
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TURNING RADIUS EXHIBIT

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Environmental Sciences
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Leonardtown

NO.	REVISIONS	BY	DATE
2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSB

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CONTACT NAME MALCOLM VAN DE RIET

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MAP 19 GRID A-B,B-B

TAX MAP	ZONING CATEGORY:
FT22	MXD
WSSC 200' SHEET	
244NW11	

SITE DATUM
HORIZONTAL: NAD83
VERTICAL: NAVD83

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'

SHEET 1 OF 1

PROJECT NO. 0774-08-00

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ORCHARD POND APARTMENTS

Architectural Design Guidelines

Building Siting and Setbacks

ENTRANCE ORIENTATION

The primary building entrance shall face Firstfield Road.

SETBACKS

Building setbacks shall be as indicated on the Schematic Development Plan drawings. Setbacks shall be applicable to the building face only. Bays, balconies, eaves and other architectural fenestration enhancements may extend beyond the setbacks up to 5'-0". Landscape elements such as handrails, retaining walls, landscaping, hardscaping, etc may extend into setbacks.

STREETSCAPE

The streetscape requirements may include but not limited to the addition of sidewalk, shade trees, and street lighting as determined necessary through the Site Plan process.

Material Standards

GENERAL ARCHITECTURAL STANDARDS

Architectural design and building aesthetics shall be determined by the architectural character of the approved elevations. Elevations not presented shall follow the general character and design of the approved elevations. Material requirements as related to the general architectural design are as per this section.

SIDING

Where an exterior building face is visible from a street, fiber board or cement board or equal siding, paneling and trim shall be used. Siding or paneling style may vary as per approved elevations. Siding trim shall be of a sizing appropriate to the adjacent siding style or paneling

and as illustrated in intended design detail as per approved elevations. Any other siding product shall be permitted where not readily visible to the general public from the street or adjacent properties. All siding shall be installed per manufacturer's standard requirements.

BRICK VENEER – RESIDENTIAL BUILDING

A veneer brick will be used to establish an architectural "base" at minimum as a water-table base at the exterior perimeter of the building, extending at minimum to the underside of the lowest window sill of the finish grade. Veneer brick may extend above this minimum height so as to provide architectural interest as per the approved elevations, such as at building corners and main residential entrance. In no case shall the brick extend to the top floor of the residential building so as to establish an architectural "top" through use of another material. A variety of brick colors may be used to compliment the siding colors to be used, with a minimum of two (2) brick colors to be used. Brick size and pattern shall be per industry standard for residential buildings of this size and scale built in this period.

SYNTHETIC STUCCO

Synthetic stucco may be used to replicate stone banding, cornices and other special stone shapes. Where synthetic stucco is used at a level below 6'-0", a high-impact synthetic stucco shall be used.

PRECAST CONCRETE & SYNTHETIC STONE

Precast concrete and synthetic stone sills, headers and other banding may be used in lieu of synthetic stucco.

ARCHITECTURAL BLOCK – SPLIT-FACE OR SMOOTH

Architectural block may be used at the "base" of the building on non-street fronting elevations and courtyard elevations. Architectural block should not extend above the water-table. Color shall compliment brick and siding colors used.

DOORS

Residential doors may be vinyl, PVC, fiberglass, wood or metal, slider type or standard hinged. Sliding doors at patios and balconies may be full glazed and may contain a transom. Door color may be white or any other color deemed complementary to the brick and siding façade. Fire-rated exit doors may be solid painted metal doors. Doors and side lights at or near the main residential entry or amenity space may be aluminum storefront windows and may be full height glazed.

WINDOWS

Windows shall be single-hung at minimum. Windows may be single vertical or ganged together as per the architectural character of the approved elevations. Windows may be vinyl, PVC, vinyl-clad wood, aluminum or equal. Window color may be white or any other color deemed complementary to the brick and siding façade. Windows at or near the main residential entry or amenity space may be aluminum storefront windows and may be full height glazed.

DECKS & BALCONIES

Decks and Balconies shall be either wood framed & trimmed structured balconies or Juliet-style balconies. Standard wood framed balconies may be open to the sky or covered above by roof or another balcony, and surface may be pervious or impervious. Balcony railings may be vinyl or PVC, prefinished aluminum, or painted metal. Wood balconies and railings shall be painted white or any color deemed complementary to the approved architectural design.

ROOFS

Roofs may be pitched roofs or flat roofs with parapets. Pitched roofs shall be minimum 3:12 slope with dimensional asphalt shingles. Shingle color may be standard black or any other color deemed complementary to the approved architectural design. Flat roofs shall have a minimum 30” parapet height.

GUTTERS & DOWNSPOUTS

Gutters and downspouts shall be standard prefinished painted aluminum. Color shall be white or any other color deemed complementary to the approved architectural design.

PARKING GARAGE

The Parking Garage architectural design and building aesthetics shall be determined by the architectural character of the approved elevations. Materials may include synthetic stucco, precast concrete, brick spandrel panels, and other equal materials. Colors shall match or compliment the Residential building colors.

MECHANICAL UNIT SCREENING

Where residential mechanical units are located on the roof, the units shall be screened from public view as measured at an eye-level view line taken at the center of the sidewalk across the street adjacent to the building. Screening may include a parapet wall or other architectural fenestration complementary to the approved architectural design. Residential mechanical units visible from a street at grade shall be appropriately screened by landscaping so as to reasonably minimize visual impact.

Landscape Design & Furnishings

SITE TREES

Shade, evergreen, and ornamental trees shall be planted per the approved Landscape Plan. Their locations will be coordinated with site lighting.

SITE FURNISHINGS

Site furnishings shall be constructed of wood or powder-coated metal to complement the building's architecture style. They shall be located at the main building entrance, courtyards, and retail plaza as specified on the approved Landscape Plan.

SITE LIGHTING

Courtyards, retail plaza, and driveways shall be illuminated at night to ensure safety and provide adequate visibility. The lighting shall be coordinated to complement the architecture and other site furnishings.

Site: Orchard Pond Apartments
Sketch plan 5/20/09
SDP 10/23/09
Review Date: 11/10/2009 (DRT and other comments)

I. SKETCH PLAN:

- Generalize building specifics for Phase 2. Show 3 bullets:
  - Commercial/Retail/Hotel Total FAR 0.75 (total for Phases 1& 2 combined)
  - Retail shall not exceed 60%; Employment office shall not exceed 65%; other commercial/institutional shall not exceed 15%. These uses can not exceed .75FAR.
  - Green space must not be less than 40% for residential and 25% for commercial

II. SDP
Sheet 1 of 6

- Overall parking numbers have an average 1.55 spaces/unit. This is too low.
- Where are the amenity parking spaces?
- Where are the 20 spaces mentioned on street?

Sheet 2 of 6

- Plans should be dimensioned
- Streetscape information/design guidelines?
- Lobby/amenity space parking?
- Amenity/retail ready – what is this/more detail on this?
- More detail on transit stop?
- CCT ROW looks like it gets narrower as you get closer to intersection of Clopper and Quince Orchard Rd.
- Show garage module width
- Sidewalk needs to be added along Firstfield
- On street parking along Firstfield will have to be additional paving – ie 5' sidewalk; then 7' parking; then 10' PUE
- Per Verizon – the 10' PUE must be shown free and clear of obstructions - pls show this
- The lobby driveway allows for a right turn only exit
- Show the turning radius to allow cars to "u" turn into the garage driveway. The driveway may not be wide enough or set-back enough from Firstfield to allow this movement. Also with emergency vehicles?
- Upgrading bus shelters?

III. Traffic Impact Study

- TIS shows two access points on the proposed development when the plan shows one way in and out.
- Revise TIS to include 100% of the trips from Watkins Mill Town Center Phase I

- The approval of the sketch plan will be conditioned that each phase of development must comply with the APFO.

IV. Storm water management

- Need to meet and discuss concept plan

V. Preliminary Forest Conservation

- Comments attached

Loiederman
Soltesz Associates, Inc.

December 7, 2009

Eliza Voigt
Planner
Planning and Code Administration
City of Gaithersburg
31 S. Summit Avenue
Gaithersburg, MD 20877

RECEIVED
DEC
PLANNING & CODE ADMINISTRATION

Re: Orchard Pond
Sketch Plan and Schematic Development Plan
LSA Project No. 0774-08-00

Dear Ms. Voigt,

The following is a point-by-point response to the November 12th comments on the Sketch Plan and Schematic Development Plan for the Orchard Pond project.

I. SKETCH PLAN:

1. **Comment:** Generalize building specifics for Phase 2. Show 3 bullets:
   - Commercial/Retail/Hotel Total FAR 0.75 (total for Phases 1& 2 combined)
   - Retail shall not exceed 60%; Employment office shall not exceed 65%; other commercial/institutional shall not exceed 15%. These uses can not exceed .75FAR.
   - Green space must not be less than 40% for residential and 25% for commercial

   Response: The above listed notes have been added to the Sketch Plan.

II. SDP:

Sheet 1 of 6

1. **Comment:** Overall parking numbers have an average 1.55 spaces/unit. This is too low.

   Response: The target parking ratio is 1.6 cars per unit for a total of 656 required cars for 410 units. The garage currently provides 650 spaces plus 20 parking spaces on the street for total of 670 spaces.

2. **Comment:** Where are the amenity parking spaces?

   Response: The Amenity will serve the residential apartments only and therefore no additional parking needed.

Joint Hearing - MCC & PC
SDP 09 001
10

3. **Comment:** Where are the 20 spaces mentioned on street?

   Response: The on-street parking has been added to the plan.

Sheet 2 of 6

1. **Comment:** Plans should be dimensioned

   Response: The driveways have been dimensioned as well as property ties added to the plan. The building dimensions are provided on the architecture plans.

2. **Comment:** Streetscape information/design guidelines?

   Response: Street trees have been added in bump outs located with/along the on-street parking.

3. **Comment:** Lobby/amenity space parking?

   Response: The Amenity will serve the residential apartments only and therefore no additional parking needed.

4. **Comment:** Amenity/retail ready – what is this/more detail on this?

   Response: In Phase I, the Amenity will consist of apartment-use only functions such as a fitness facility, clubroom and the like. In future phases this space may be converted to neighborhood serving Retail or Residential units.

5. **Comment:** More detail on transit stop?

   Response: The Maryland Transit Authority (MTA) does not currently have a conceptual design for the transit station.

6. **Comment:** CCT ROW looks like it gets narrower as you get closer to intersection of Clopper and Quince Orchard Rd.

   Response: The CCT does narrow as it proceeds closer to the intersection of Clopper Road and Quince Orchard Road. The CCT ROW is shown as provided by the MTA.

7. **Comment:** Show garage module width.

   Response: See Sheet A.01 for typical dimensioned parking modules.

8. **Comment:** Sidewalk needs to be added along Firstfield.

   Response: A proposed 5 foot sidewalk has been added to the plans.

9. **Comment:** On street parking along Firstfield will have to be additional paving – ie 5' sidewalk; then 7' parking; then 10' PUE

   Response: Street parking has been added to the plan with the 5 foot sidewalk immediately adjacent to the spaces then the 10 foot PUE behind.

10. **Comment:** Per Verizon – the 10' PUE must be shown free and clear of obstructions - pls show this.

    Response: The existing 10' PUE will be shifted to begin behind the proposed 5 foot sidewalk.

11. **Comment:** The lobby driveway allows for a right turn only exit.

    Response: This is correct.

12. **Comment:** Show the turning radius to allow cars to "u" turn into the garage driveway. The driveway may not be wide enough or set-back enough from Firstfield to allow this movement. Also with emergency vehicles?

    Response: Please see the enclosed Turning Movement Plan. An emergency only access drive has been added to the plans.

13. **Comment:** Upgrading bus shelters?

    Response: The extent of the upgrade for the bus shelters will need to be coordinated during the Site Plan process between the City and Jefferson Apartment Group.

III. Traffic Impact Study

1. **Comment:** TIS shows two access points on the proposed development when the plan shows one way in and out.

   Response: To be coordinated with the traffic engineer.

2. **Comment:** Revise TIS to include 100% of the trips from Watkins Mill Town Center Phase I.

   Response: To be coordinated with the traffic engineer.

3. **Comment:** The approval of the sketch plan will be conditioned that each phase of development must comply with the APFO.

   Response: To be coordinated with the traffic engineer.

Additional Comments provided via Email from Ollie Mumpower on 11/19/09:

4. **Comment:** For the background development of Watkins Mill Town Center and Casey East (Spectrum) Need to confirm with Planning the development totals shown in the study reflects the latest numbers.

   Response: To be coordinated with the traffic engineer.

5. **Comment:** Than the study needs to include 100%, not 50%, of the site traffic for these two developments.

   Response: To be coordinated with the traffic engineer.

IV. Storm water management

1. **Comment:** Need to meet and discuss concept plan.

   Response: The concept was discussed in the meeting held at the City of Gaithersburg on November 19, 2009. The plan was revised per the discussion at the meeting.

V. Preliminary Forest Conservation

1. **Comment:** Comments attached.

   Response: Please refer to the enclosed Preliminary Forest Conservation Plan Point-by-Point response letter and associated plan.

If you have any additional questions or comments, please feel free to contact either me or Steve Tawes at 301-948-2750.

Sincerely,

Theresa Polizzi

Theresa Polizzi

Enclosures

CC: Malcolm van de Riet, Jefferson Apartment Group
Jody Kline, Miller, Miller, & Canby
Joe Schneider, Lessard Architects
Steve Tawes, LSA, Inc.
File

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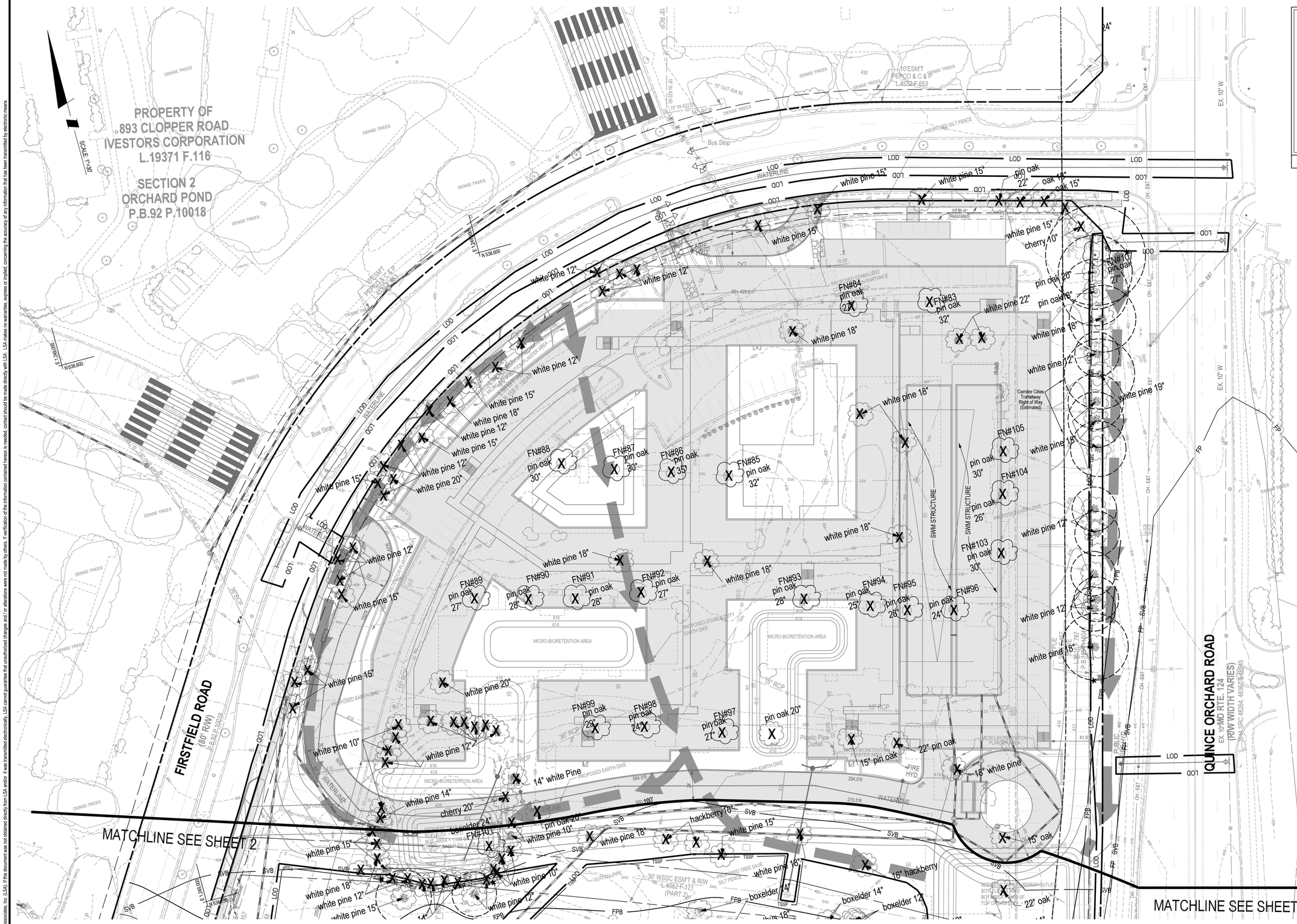

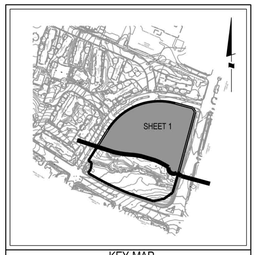

KEY MAP
SCALE: 1"=500'

LEGEND

FP	100 YEAR FLOODPLAIN LIMITS (Source: FEMA)
FPB	100 YEAR FLOODPLAIN BUFFER (Source: FEMA)
	STREAM
SVB	STREAM BUFFER
WL	WETLAND
WB	WETLAND BUFFER
	SPECIMEN TREE (Approximate location) (Root zone shown for retained trees near development)
	REMOVED SPECIMEN TREE (Approximate location)
	AFFORESTATION (NOT ON THIS SHEET)
TSSF	TREE SAVE/SUPER SILT FENCE
RP	ROOT PRUNE
	FORESTATION SIGN
530	EXISTING CONTOURS
530	PROPOSED CONTOURS
	PROPERTY BOUNDARY
LOD	LIMIT OF DISTURBANCE
	EARTHDIKE

Joint Hearing - MCC & PC
SDP 09 001
11

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LICENSE NO. _____ EXPIRATION DATE:

PRELIMINARY FOREST CONSERVATION PLAN

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Engineering
Planning
Surveying
Environmental Sciences
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Lanham
Frederick
Waldorf
Leonardtown

NO.	REVISIONS	BY	DATE
2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSB

MISS UTILITY NOTE

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OWNER/DEVELOPER/APPLICANT

COMPANY NAME	JEFFERSON APARTMENT GROUP
ADDRESS	8300 GREENSBORO DRIVE
ADDRESS	SUITE 400
CITY STATE	McLEAN, VA 22102
PHONE #	(703) 563 5200
CONTACT NAME	MALCOLM VAN DE RIET

COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NUMBER 20811199

MAP 19	GRID A-8,B-8
TAX MAP FT22	ZONING CATEGORY: MXD
WSSC 200' SHEET 244NW11	
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NAVD83	

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'
SHEET 1 OF 3
PROJECT NO. 07740-08-00

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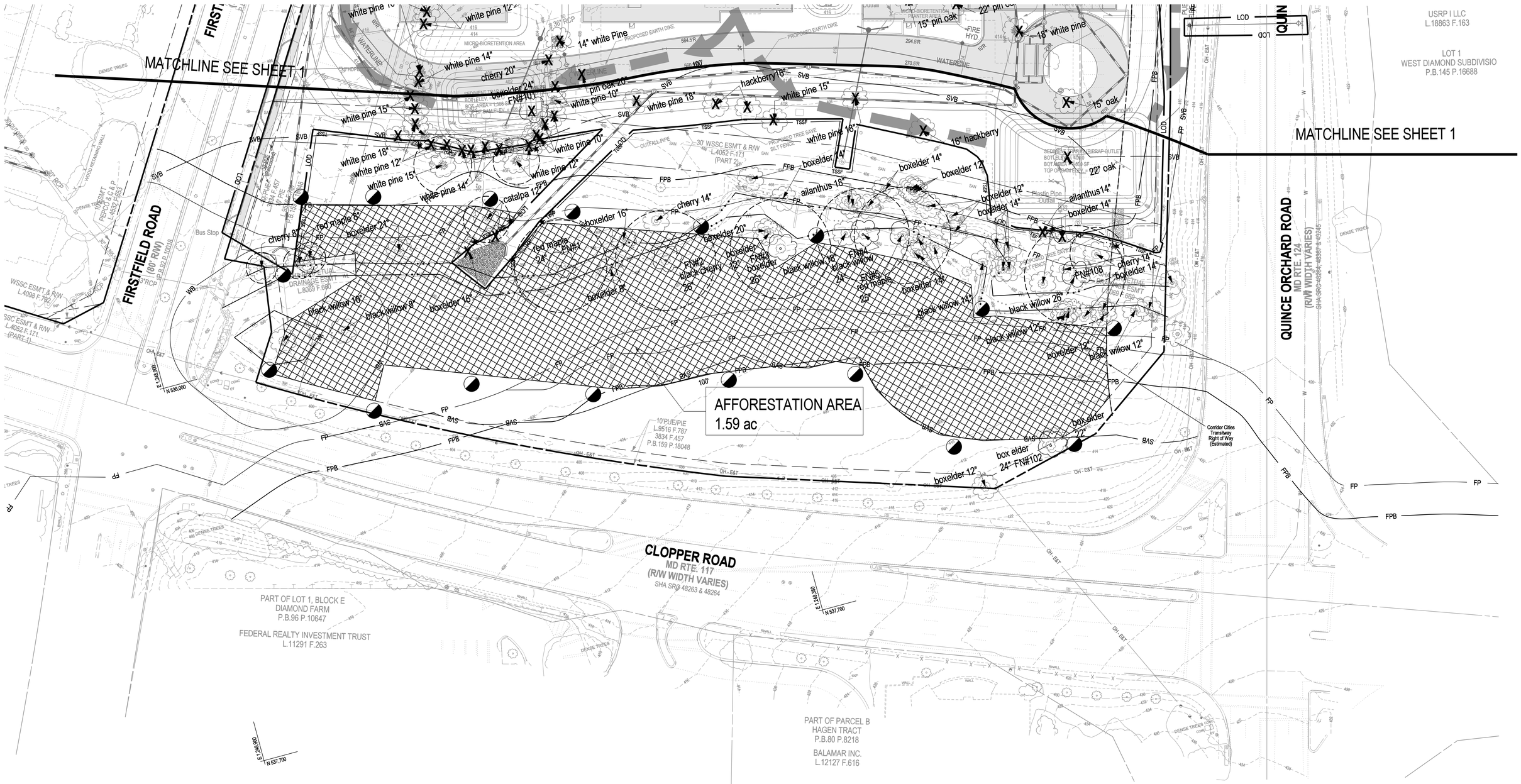

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KEY MAP
SCALE: 1"=500'

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PRELIMINARY FOREST CONSERVATION PLAN

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'
SHEET 2 OF 3
PROJECT NO. 0774-08-00

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MAP 19 GRID A-8,B-8

TAX MAP	ZONING CATEGORY:
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WSSC 200' SHEET	
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SITE DATUM
HORIZONTAL: NAD83
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FOREST CONSERVATION INSPECTION PROCEDURES

1. Upon permit issuance, the builder/developer must arrange for an engineers' stake out of tree protection in accordance with approved plans. A preconstruction meeting will then be scheduled to determine the location of tree protection devices. The Planning and Code Administration inspector shall adjust tree protection and root pruning in the field as necessary, which may expand or decrease the area being protected. Installation of all tree protection devices should be scheduled and an inspection arranged with the City after all work is complete. The City will issue a punch list for any remaining work needed prior to the start of grading, or issue a report approving the start of grading.

2. Once work begins on-site, the tree protection devices will be reinspected on a biweekly basis, and the builder/developer will be notified of any work that is needed. It shall be the builder/developer's responsibility to maintain all tree protection devices and make any repairs needed.

3. City approval is required prior to removal of any tree protection device or entrance into a tree save area. ***Tree save areas cannot be used for storage of any building materials.***

4. The Planning and Code Administration inspector may require pruning and removal of any tree in the tree save area during construction and prior to bond release. These decisions will be based on the trees' health, proximity to buildings, drainage, or other concerns. Every effort will be made to preserve those trees in the tree save area.

5. The City will require mitigation of trees lost during construction in accordance with the Forest Conservation Ordinance. Mitigation will be required prior to bond release, and all replacement trees must be inspected by the City after installation. These replacement trees shall have a one-year guarantee in accordance with the industry standards. The City may also allow the developer to escrow monies for mitigation to satisfy their obligation, which will be used by the City to purchase and install the replacement trees.

6. For mitigation and afforestation, City inspection is required after the plantings have been made. The maintenance period, one year or as stated in the maintenance agreement, will not begin until this inspection has been made. Quarterly reports to the City, if required, on the health of the trees in the save area should also be made, and any recommendations implemented. It shall be the builder/developer's responsibility to maintain these plantings until they are accepted by the City. A final inspection by the City will be made prior to the end of the maintenance period, and a punch list developed for any trees that need to be replaced. The City may allow the developer to escrow monies to satisfy their obligation for any further planting required, which will be used by the City to purchase and install the replacement trees.

7. It shall be the builder/developer's responsibility to satisfy all requirements and conditions of the Forest Conservation Plan and/or any maintenance agreement. In the event of a violation, the City will take enforcement action in accordance with the Trees and Forest Conservation Ordinance (Chapter 22) of the City Code. This may include correction notices, civil citations, or collection of the bond guaranteeing this work.

City of Gaithersburg
Forest Conservation Worksheet
Pond- Phase 1

TRACT AREA, FOREST **RANCE AREA**

A: Tract Area 10.57
(CCT ROW dedication ase 1 area of 11.14 acres)

B: Existing Forest Cover 0.00
B=Forest Cover within Tract Area A

C: Cleared Forest Cover 0.00
C=Forest Cover to be cleared as result of development

D: Retained Forest Cover 0.00
D=B - C
(Existing Forest Cover B - Cleared Forest Cover C)

AFFORESTATION
Use zero (0) for all negative numbers resulting from calculations.

E: Afforestation Threshold
E=Tract Area A x 15% 1.59

F: Afforestation Required* 1.59
F=E-B
(Afforestation Threshold E - Existing Forest Cover B)

REFORESTATION
Use zero (0) for all negative numbers resulting from calculations.

G: Conservation Threshold 20% x A 2.11
G =Tract Area A x land use conservation percentage

Residential	Institutional	Commercial Or Industrial	Mixed Use
0	0	0	1

H: Existing Forest Cover greater than Conservation Threshold 0
H = B - G
(Existing Forest Cover B - Conservation Threshold G)

I: Retained Forest Cover greater than Conservation Threshold 0
I=D-G
(Retained Forest Cover D - Conservation Threshold G)

J: Clearance greater than Conservation Threshold 0
J=H-I

K: Retention Credit for retained forest cover greater than conservation threshold 0
K=D-G
(Retained Forest Cover D - Conservation Threshold G)

L: Clearance less than Conservation Threshold 0
L = G-D
(Conservation Threshold G - Retained Forest Cover D)

M: Reforestation Requirement 0
M = 1/4J-K+2L

BREAKEVEN POINT

N: Breakeven Point 0
N= K x 20% + G
(Retention Credit K x 20% + Conservation Threshold G)

O: Clearance allowed without reforestation 0
O = B-N
(Existing Forest Cover B - Breakeven Point N)

* Subject to 25% credit for onsite landscaping / tree cano

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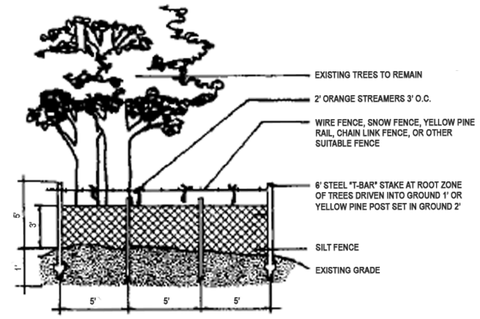

COMBINED SILT AND TREE PROTECTION FENCE

COMBINED SILT AND TREE PROTECTION FENCE
NOT TO SCALE

NOTE: WHEN COMBINED SILT AND TREE PROTECTION FENCE IS USED, ROOT PRUNING SHALL OCCUR ON THE LOD WHERE THE FENCE IS ERECTED.

Orchard Pond
Specimen Tree Removal List

Note: Trees were tagged with a metal tag corresponding to the numbers below. Tags were placed approximately 5' from the ground with colored flagging attached. Tree locations were located by survey or field observation.

Tag #	Common Name	Scientific Name	DBH (inches)	Disposition
FN# 83	Pin Oak	*Quercus palustris*	32	Remove
FN# 84	Pin Oak	*Quercus palustris*	27	Remove
FN# 85	Pin Oak	*Quercus palustris*	32	Remove
FN# 86	Pin Oak	*Quercus palustris*	35	Remove
FN# 87	Pin Oak	*Quercus palustris*	30	Remove
FN# 88	Pin Oak	*Quercus palustris*	30	Remove
FN# 89	Pin Oak	*Quercus palustris*	27	Remove
FN# 90	Pin Oak	*Quercus palustris*	28	Remove
FN# 91	Pin Oak	*Quercus palustris*	28	Remove
FN# 92	Pin Oak	*Quercus palustris*	27	Remove
FN# 93	Pin Oak	*Quercus palustris*	28	Remove
FN# 94	Pin Oak	*Quercus palustris*	25	Remove
FN# 95	Pin Oak	*Quercus palustris*	28	Remove
FN# 96	Pin Oak	*Quercus palustris*	24	Remove
FN# 97	Pin Oak	*Quercus palustris*	27	Remove
FN# 98	Pin Oak	*Quercus palustris*	24	Remove
FN# 99	Pin Oak	*Quercus palustris*	29	Remove
FN# 101	Pin Oak	*Quercus palustris*	24	Remove
FN# 103	Pin Oak	*Quercus palustris*	30	Remove
FN# 104	Pin Oak	*Quercus palustris*	26	Remove
FN# 105	Pin Oak	*Quercus palustris*	30	Remove
FN# 107	Pin Oak	*Quercus palustris*	27	Remove

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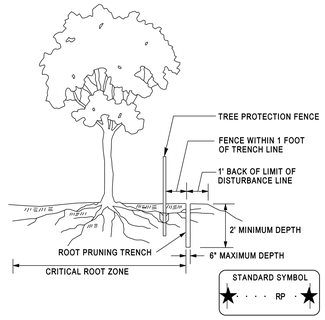
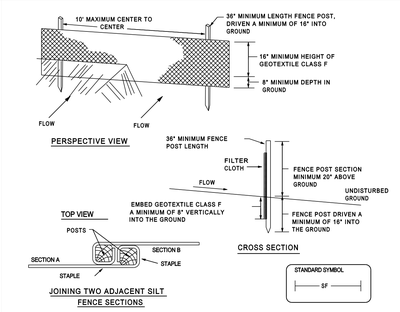


NOTES:
1. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO TRENCHING
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

SOURCE: CITY OF GAITHERSBURG, MD: CITY TREE MANUAL AND THE MD DNR FOREST CONSERVATION MANUAL 1991

ROOT PRUNING
NOT TO SCALE

DETAIL 22 - SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT.
2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

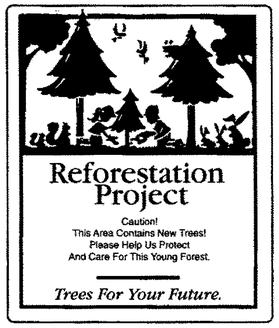
TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL FT / MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REFORESTATION PROJECT AREA SIGN

Source: The Tree Company, Catonsville, Maryland
Size: 11" x 15"



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1" = N.T.S.
SHEET 3 OF 3
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178

Site: Orchard Pond Apartments
Preliminary Forest Conservation Plan Date: 10/23/2009
Review Date: 10/27/2009

General Comments

1. Provide overall site forest conservation master plan (total Phase I and Phase II acreages and total afforestation requirements). Approximately 6.5 acres of afforestation required (minus area for CCT ROW deduction). Need additional reforestation area.
2. Show CCT ROW (proposed tree removal in this area).
3. Noise impacts by North and Northeast area of property

Sheet 1 of 3

1. Show area outside of Matchline (sheet 2) to provide information regarding the proximity and impacts to SVB.
2. Show grading, topo, and impacts to CRZ for all trees impacted by LOD.
3. Why are some trees indicated to be removed while others are not (even if they are located within the proposed building)?
4. The only storm drain improvements shown are pipes. Where are any proposed water quality or quantity structures or BMPs?
5. Can design be modified to avoid removing nearly every specimen tree on the site?
6. Include all symbols on the plan within the legend.
7. Why can't FN #107 be saved?
8. Show general locations of sediment control structures and devices.
9. Show sizes of all proposed storm drain features.
10. Show storm drain that crosses Firstfield Road and eventually outfalls in the existing SWM pond.
11. Show overhead utilities along Quince Orchard Road.

Sheet 2 of 3

1. Show area above matchline to relate development to SVB
2. Proposed 36" storm drain encroaches SVB, need an environmental waiver from Mayor and Council
3. What will happen to existing pond and outfall?
4. Identify WL in the legend; is it the water line or the top of bank?
5. Show CRZ for all trees impacted by the LOD.
6. What improvements are to be made to the degraded stream channel?
7. Show general locations of sediment control structures and devices.

8. What storm drain improvements will take into account the 36” pipe from across Firstfield Road?
9. Evaluate extending afforestation area to include Phase II afforestation (how many acres are available)?
10. Show FCE Category I.
11. Any changes to utilities?

Conceptual Landscape Plan

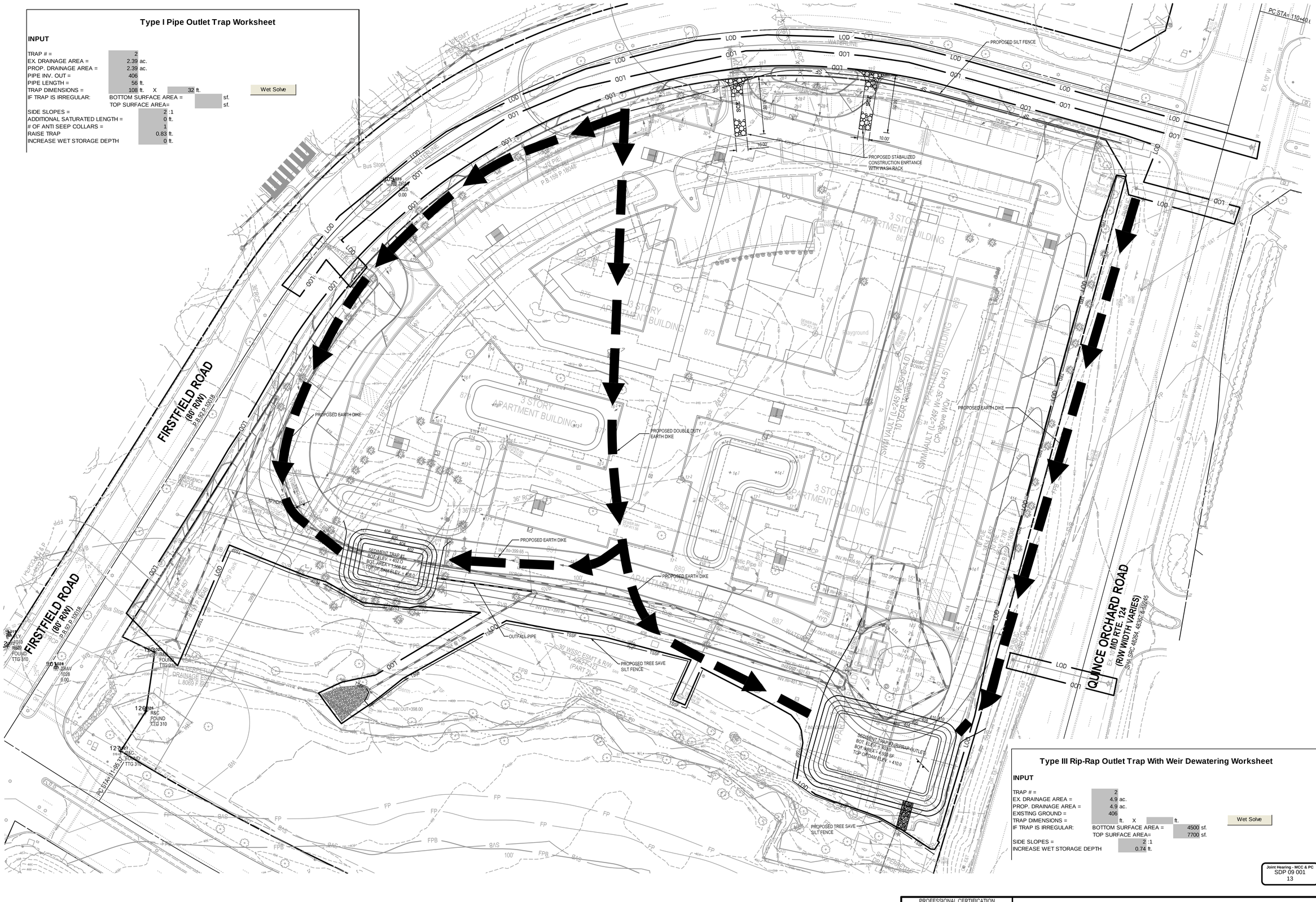
General Comments

1. Street trees improvements and utilities?
2. Median improvements?
3. Tree planting in CCT ROW, shift building over to provide landscape buffer between CCT and parking garage.
4. How is the 45% open space requirement satisfied?
5. SWM?
6. Only one access to parking garage?

Type I Pipe Outlet Trap Worksheet

INPUT

TRAP # =	2			
EX. DRAINAGE AREA =	2.39 ac.			
PROP. DRAINAGE AREA =	2.39 ac.			
PIPE INV. OUT =	406			
PIPE LENGTH =	56 ft.			
TRAP DIMENSIONS =	108 ft.	X	32 ft.	Wet Solve
IF TRAP IS IRREGULAR:	BOTTOM SURFACE AREA =		sf.	
	TOP SURFACE AREA=		sf.	
SIDE SLOPES =	2 :1			
ADDITIONAL SATURATED LENGTH =	0 ft.			
# OF ANTI SEEP COLLARS =	1			
RAISE TRAP	0.83 ft.			
INCREASE WET STORAGE DEPTH	0 ft.			



Type III Rip-Rap Outlet Trap With Weir Dewatering Worksheet

INPUT

TRAP # =	2			
EX. DRAINAGE AREA =	4.9 ac.			
PROP. DRAINAGE AREA =	4.9 ac.			
EXISTING GROUND =	406			
TRAP DIMENSIONS =	ft.	X	ft.	Wet Solve
IF TRAP IS IRREGULAR:	BOTTOM SURFACE AREA =		4500 sf.	
	TOP SURFACE AREA=		7700 sf.	
SIDE SLOPES =	2 :1			
INCREASE WET STORAGE DEPTH	0.74 ft.			

Joint Hearing - MCC & PC
SDP 09 001
13

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. _____, EXPIRATION DATE: _____

CONCEPTUAL SEDIMENT CONTROL PLAN

PHASE 1 & PHASE 2
ORCHARD POND

L. 19371 F. 116
GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'

SHEET 1 OF 1

PROJECT NO. 07-74-08-00

Loiederman Soltesz Associates, Inc.
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Surveying
Environmental Sciences
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Lanham
Frederick
Waldorf
Leonardtown

NO.	REVISIONS	BY	DATE
2.	REVISED SUBMISSION TO CITY OF GAITHERSBURG	TDP	12-07-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: OCTOBER 2009 | CAD STANDARDS VERSION: V8 - 2000
DESIGNED: AXQ | TECHNICIAN: MLE | CHECKED: AXQ

MISS UTILITY NOTE

INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND UTILITY CROSSINGS BY DIGGING TEST PITS BY HAND, WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY COMPANY BEFORE PROCEEDING WITH CONSTRUCTION. CLEARANCES LESS THAN NOTED MAY REQUIRE REVISIONS TO THIS PLAN.

OWNER/DEVELOPER/APPLICANT

COMPANY NAME	JEFFERSON APARTMENT GROUP
ADDRESS	8300 GREENSBORO DRIVE
ADDRESS	SUITE 400
CITY STATE	McLEAN, VA 22102
PHONE #	(703) 563 5200
CONTACT NAME	MALCOLM VAN DE RIET

COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NUMBER 20811199

MAP 19 GRID A-B,B-B

TAX MAP	ZONING CATEGORY:
FT22	MXD
WSSC 200' SHEET	
244NW11	

SITE DATUM
HORIZONTAL: NAD83
VERTICAL: NAVD83

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Transmittal

To:	City of Gaithersburg	Date:	December 7, 2009
	Department of Public Works	Subject:	Orchard Pond – Phase 1
	800 Rabbit Road		SWM Concept Plan
	Gaithersburg, MD 20878		
Attn:	Don Boswell	Project #:	0774-08-00

The following items are transmitted: ☒ Herewith ☐ Separate Cover ☒ Via Messenger ☐ Overnight

Copies	Pages	Description
1	37	SWM Concept Compuations
1	4	SWM Concept Plans

The above items are submitted: ☐ At your request ☐ For your review ☐ For your files ☐ For your approval ☐ For your action ☒ For your information

General Remarks:
Don,

I'm re-submitting this after building layout revisions and incorporating ESD. Please call if you have any questions or need anything else. Thank you.

Copies to:
Steve Tawes, LSA
Theresa Polizzi, LSA

File

By: Amy Quant, P.E.
aquant@LSAssociates.net

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Loiederman
Soltesz Associates, Inc.

Orchard Pond Phase I (& II)

LSA Project No: 0774-08-00

Stormwater Management Concept

City of Gaithersburg, Maryland

STATE OF MARYLAND
AMY X. QUANT
No. 36060
PROFESSIONAL ENGINEER

12/07/09

Prepared by:

Loiederman Soltesz Associates, Inc.
2 Research Place Suite 100 Rockville,
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(301) 948-2750

Amy Quant, P.E.
Date: December 04, 2009

Prepared for:

JPI
8300 Greensboro Dr.
McLean, VA 22102
(703) 847-0990

Joint Hearing - MCC & PC
SDP 09 001
14

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  - EXISTING CONDITION for WQv and CPv calculations
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STORMWATER MANAGEMENT REPORT

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PROJECT DESCRIPTION BACKGROUND

The Residence at Orchard Pond (Orchard Pond) is bordered by a Maryland State Highway Facility to the north, Metropolitan Grove Road to the west, Clopper Road to the south, Quince Orchard Road to the east and the property is bisected by Firstfield Road. (See figured 2) Quince Orchard Road (MD RTE 124) and Clopper Road (MD RTE 117) and the general area surrounding the property consists of high density residential neighborhoods, commercial buildings, and retail shopping centers with limited natural areas.

The entire Orchard Pond property drains to Long Draught Branch in the Great Seneca Creek watershed via three different routes. The closest watercourse to the property is Long Draught Branch, which is located to the southwest of the property. Great Seneca Creek is classified as Use I-P (COMAR 26.08.02.08). See figure 1.

The redevelopment of Orchard Pond is proposed in two phases. Phase I will be constructed first and is the primary focus of this SWM concept. As mentioned above, Residence at Orchard Pond drains into Long Drought Branch via three separate routes.

Phase I of the project is bounded on the west by Clopper Road, south by Quince Orchard Road, and north and east by Firstfield Road. Currently, this portion of the property consists of several three story apartment buildings, associated surface parking and drive areas, lawn areas, and a small wooded area. The proposed development consists a multi-family building containing approximately 450 units. Parking will be provided in a three level garage that is located on the southern end of the site. Access to garage is provided via an access road connecting to Firstfield Road.

Phase I primarily drains to an existing pond located at the southwest corner of this portion of the property, with small portions draining into the stream via surface flow or via a proposed grass swale that runs along the southern edge of the site, next to Quince Orchard Road.

The site slopes from north to south from approximately 426' to 392' above mean sea level. The soil type found on the subject property is Glenelg Silt Loam. The soil has moderate permeability and the potential for frost action is moderate.

Phase I is approximately 11.14 acres in size. Currently most of the site drains to an existing storm drain system that outfalls to an existing stream at the southern end of the property. The drainage area to be controlled by the proposed stormwater management facilities is 7.28 Ac. The rest of the area (3.86 Ac.) is within the stream valley buffer and the floodplain.

Phase II drains to the Long Draught Branch via three separate routes as well. The northwest portion of Phase II drains into an existing storm drain system that outfalls into an existing grass swale located on the west side of Clopper Road. The swale then drains into Long Draught Branch, bypassing the existing culvert under Clopper Road completely.

The southwestern portion of Phase II drains into an existing storm drain system that drains across Firstfield Road and outfalls into the mouth of the existing culvert. The third and remaining portion of Phase II drains into the previously referenced existing pond located in Phase I area.

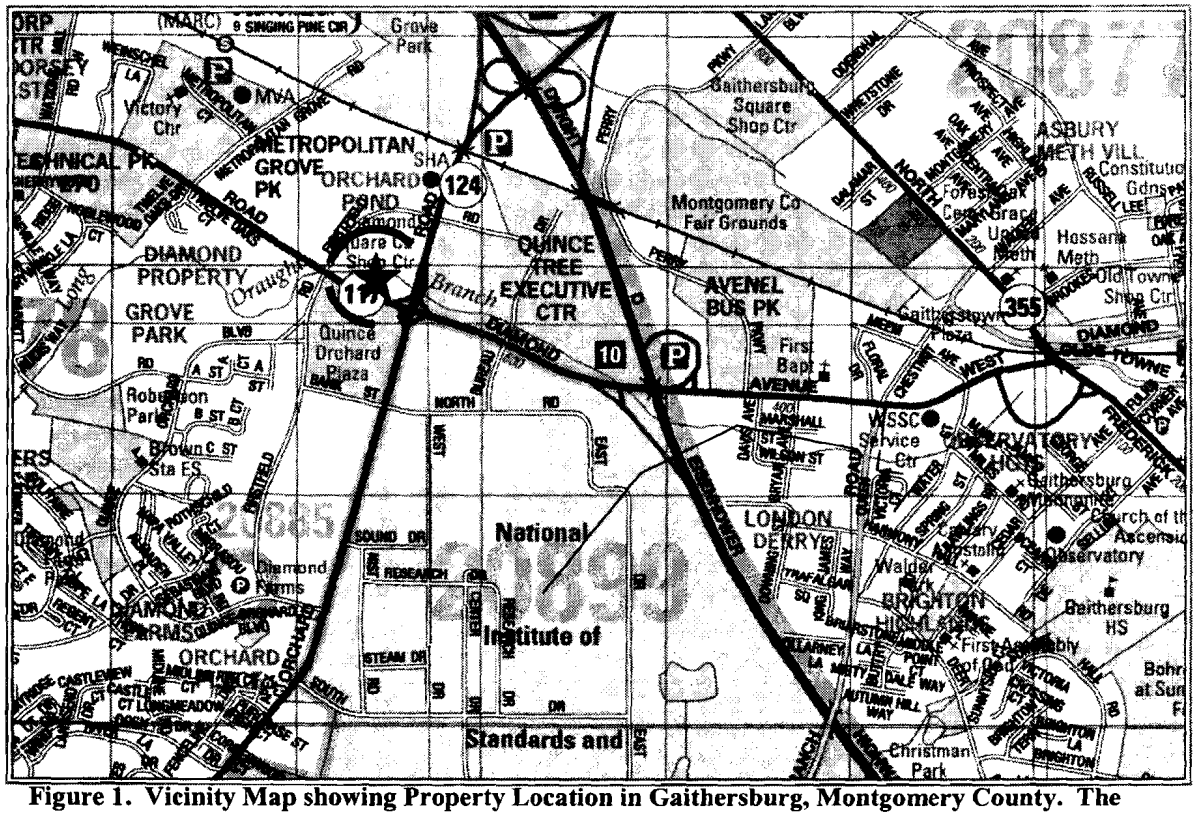

Figure 1. Vicinity Map showing Property Location in Gaithersburg, Montgomery County. The property is located at Md Rt 124 and Clopper Rd (Source: Copyright ADC The Map People. Permitted Use Number 20811199

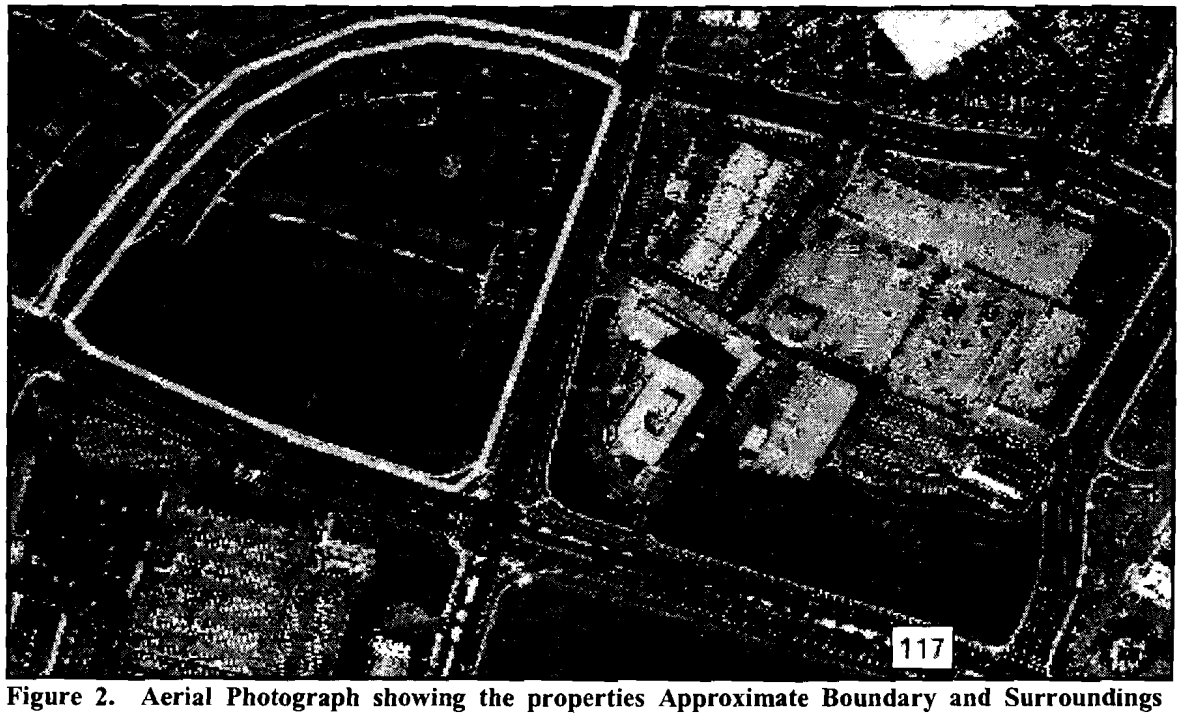

Figure 2. Aerial Photograph showing the properties Approximate Boundary and Surroundings

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(Source: Montgomery County Government GIS Map Viewer, aerial photograph, 2006.) ↑N, no scale

Stormwater Management Approach

Preference has been given to stormwater management utilizing Environmental Site Design measures. Bio-retention areas are proposed in the two courtyards that open onto the private garage access drive. Numerous stormwater management bio-planters are proposed along the southern and western edges of the proposed building. Porous pavers are proposed for internal courtyard/pool area and walkways. Reinforced turf is provided in the fire access entrance as well as the circle at the end of the access road to the parking garage. However, due to the location of the garage access and the nature of the site, treatment for the garage access road and the remaining portion of the site will be provided thru structural devices located under the proposed garage. This includes the remaining channel protection volume and water quality requirements, as well as 10-year quantity control. 10-year quantity will be calculated and released using pre-MDE 2000 standards. The remaining water quality treatment will be provided via an underground cartridge stormfilter or equivalent.

Quantity Control- Channel Protection Volume for Phase I

Due to field conditions, the area inside the stream valley buffer will not be managed and will drain to the existing culvert that runs across Clopper Road to drain into Long Draught Branch.

Of the remaining 7.28 acres, approximately 2.60 acres are being fully treated by ESD measures. Approximately 0.28 acres of area outside of building main entrance and proposed retail space, as well as the eastern edge of phase I drains into an existing inlet in Firstfield Road and channels to the stream valley buffer via an existing storm drain system running along Quince Orchard Road. Because of this and the importance of an aesthetic landscape treatment required for the main building entrances, control can not be provided for this area. Due to natural site grading, approximately 0.77 acres south of the garage access road sheet flows into the stream valley buffer. Additionally, approximately 0.58 acres (a majority being inside the future CCT right-of-way) will drain into the temporary grass swale located along the eastern edge of phase I. Once CCT is construction, this area will drain into the existing storm drain system inside Quince Orchard Road right-of-way. Therefore, the actual area that will drain to the structural stormwater management facilities inside the garage is less approximately 3.05 acres. However the stormwater management vaults will be sized to control the WQv and CPv required for the entire 4.68 acres that are not controlled by ESD.

Channel Protection Volume-Phase II

Due to the site layout for Phase I, the existing pond located near the intersection of Clopper Road and Firstfield Road will be removed. To facilitate the removal of this pond, CPv control will be temporarily provided for the portion of Phase II that currently drains to this pond. Permanently water quality and quantity control will be provided at time of Phase II redevelopment via a separate Stormwater Management Concept Plan.

CPv for Phase II while Phase I is being redeveloped is provided via five separate

underground stormwater management vaults or storage pipes, located under existing surface parking lots. Volume of quantity requirement for Phase II structures is based on MDE 2000 Design Standards. Safe passage will be provided for the 10-year and 100-year storms through these proposed facilities and will outfall into the mouth of the existing culvert.

10-Year Volume-Phase I

Per City of Gaithersburg's request, the 10-year storm quantity control will be provided for the 7.28 acres via an underground vault proposed under the parking garage and adjacent to the storage vault housing the CPv and WQv. 10-year quantity control volume will be calculated using pre-MDE 2000 Standards and release rate will be equal to that of pre-existing conditions (assumed to be brush condition). The 10-year and 100-year storms will be routed through the CPv and WQv SWM vault with a connection chute or pipe. The connection chute invert will be set at the CPv water surface election. Quantity control for the 100 year storm will not be provided due to the drainage study results indicating that the Orchard Pond development is responsible for the flooding at the intersection of Clopper Road and Firstfield Road. Drainage study results shows that Orchard Pond's stormwater has been long drained prior to the rest of the existing culvert's drainage areas peak flow arrives at existing culvert.

Water Quality

As previously mentioned, Phase I is the primary focus of this Stormwater Management Concept. Because of this, water quality control will be provided only for Phase I at this time. Stormwater Management will be provided for Phase II at time of its proposed redevelopment.

The Phase I site is approximately 7.28 acres. As mentioned in the Quantity Control section, approximately 2.60 acres are being fully treated by ESD measures. Approximately 0.28 acres of area outside of building main entrance and proposed retail space, as well as the eastern edge of phase I drain into an existing inlet in Firstfield Road and channels to the stream valley buffer via an existing storm drain system running along Quince Orchard Road. Because of this and the importance of an aesthetic landscape treatment required for the main building entrances, control will not be provided for this area. Due to natural site grading, approximately 0.77 acres south of the garage access road sheet flows into the stream valley buffer. Additionally, approximately 0.58 acres (a majority being inside the future CCT right-of-way) will drain into the temporary grass swale located along the eastern edge of phase I. Once CCT is construction, there will be a 10' strip between tracks and building, too narrow to access area for maintenance if ESD are provided. This area will drain into the existing storm drain system inside Quince Orchard Road right-of-way.

Therefore, the actual area that will drain to the structural stormwater management facilities inside the garage is approximately 3.05 acres. However, WQv equivalent to the entire 4.68 acres will be controlled and stored via the underground storage vault under the proposed parking garage. The entire water quality requirements will be treated with a cartridge stormfilter or equivalent via a flowsplitter structure that will flowsplit the CPv for treatment, located outside of the parking garage and storage facilities.

TR-55 – Phase 1

JOB:	Orchard Pond Phase I			AXQ
DRAINAGE AREA NAME	Existing Drainage Area - CPv			7-Dec-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Grass Area		B	61	2.00 Ac.
Impervious Areas		B	98	2.68 Ac.
		AREA SUBTOTALS:		4.68 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	impervious	'n'=0.01	100 Ft.	4.10% 0.02 Hrs
Shallow Flow	PAVED		285 Ft. 4.50 F.P.S.	4.90% 0.02 Hrs.
Channel Flow Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	446 Ft. 4.50 F.P.S.	0.01% Est at 0.03 Hrs
Total Area in Acres =	4.68 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	82			
Time Of Concentration =	0.10 Hrs.	0.02 Hrs.	0.02 Hrs.	0.03 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.1 In.	7.7 CFS	18,212 Cu. Ft.
2 Year	3.2 In.	1.5 In.	11.2 CFS	26,130 Cu. Ft.
5 Year	4.2 In.	2.4 In.	18 CFS	40,345 Cu. Ft.
10 Year	5.1 In.	3.2 In.	23 CFS	53,831 Cu. Ft.
25 Year	5.6 In.	3.6 In.	27 CFS	61,513 Cu. Ft.
50 Year	6.3 In.	4.3 In.	31 CFS	72,438 Cu. Ft.
100 Year	7.2 In.	5.1 In.	38 CFS	86,707 Cu. Ft.

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JOB:	Orchard Pond - Phase I			AXQ
DRAINAGE AREA NAME	Proposed Drainage Area - CPv			7-Dec-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Grass Area	66UB	B	61	1.72 Ac.
Grass/Porous Area	6A	D	80	0.28 Ac.
Impervious Areas	6A	D	98	0.10 Ac.
Impervious Areas	66UB	B	98	2.58 Ac.
		AREA SUBTOTALS:		4.68 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	dense grass	'n'=0.24	100 Ft.	2.70% 0.21 Hrs
Shallow Flow (a)	UNPAVED		120 Ft. 3.27 F.P.S.	4.10% 0.01 Hrs.
(b)	PAVED		72 Ft. 4.93 F.P.S.	5.88% 0.00 Hrs.
Channel Flow Hydraulic Radius =0.44	2.4 SqFt	'n'=0.013 5.5 Ft.	653 Ft. 8.10 F.P.S.	1.50% 0.02 Hrs.
Total Area in Acres =	4.68 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	83			
Time Of Concentration =	0.25 Hrs.	0.21 Hrs.	0.01 Hrs.	0.02 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.1 In.	5.8 CFS	19,229 Cu. Ft.
2 Year	3.2 In.	1.6 In.	8.5 CFS	27,337 Cu. Ft.
5 Year	4.2 In.	2.5 In.	13 CFS	41,803 Cu. Ft.
10 Year	5.1 In.	3.3 In.	18 CFS	55,462 Cu. Ft.
25 Year	5.6 In.	3.7 In.	20 CFS	63,226 Cu. Ft.
50 Year	6.3 In.	4.4 In.	23 CFS	74,250 Cu. Ft.
100 Year	7.2 In.	5.2 In.	28 CFS	88,625 Cu. Ft.

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JOB:	Orchard Pond Phase I			AXQ
DRAINAGE AREA NAME	Pre-Existing Drainage Area - 10 Yr			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Meadows		B	67	7.28 Ac.
			AREA SUBTOTALS:	7.28 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	impervious	'n'=0.01	100 Ft.	4.10% 0.02 Hrs
Shallow Flow	UNPAVED		285 Ft. 3.57 F.P.S.	4.90% 0.02 Hrs.
Channel Flow Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.030 WP estimated	446 Ft. 4.50 F.P.S.	5.00% Est at 0.03 Hrs
Total Area in Acres =	7.28 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	67			
Time Of Concentration =	0.10 Hrs.	0.02 Hrs.	0.02 Hrs.	0.03 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	0.4 In.	4.0 CFS	10,538 Cu. Ft.
2 Year	3.2 In.	0.7 In.	7.3 CFS	18,157 Cu. Ft.
5 Year	4.2 In.	1.3 In.	14 CFS	33,554 Cu. Ft.
10 Year	5.1 In.	1.9 In.	21 CFS	49,497 Cu. Ft.
25 Year	5.6 In.	2.2 In.	25 CFS	58,994 Cu. Ft.
50 Year	6.3 In.	2.8 In.	31 CFS	72,899 Cu. Ft.
100 Year	7.2 In.	3.5 In.	39 CFS	91,625 Cu. Ft.

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JOB:	Orchard Pond - Phase I			AXQ
DRAINAGE AREA NAME	Proposed Drainage Area - 10 Yr			7-Dec-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Grass Area	66UB	B	61	1.78 Ac.
Grass/Porous Area	6A	D	80	0.28 Ac.
Impervious Areas	6A	D	98	0.10 Ac.
Impervious Areas	66UB	B	98	5.12 Ac.
		AREA SUBTOTALS:		7.28 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	dense grass	'n'=0.24	100 Ft.	2.70% 0.21 Hrs
Shallow Flow (a)	UNPAVED		120 Ft. 3.27 F.P.S.	4.10% 0.01 Hrs.
(b)	PAVED		72 Ft. 4.93 F.P.S.	5.88% 0.00 Hrs.
Channel Flow Hydraulic Radius =0.44	2.4 SqFt	'n'=0.013 5.5 Ft.	653 Ft. 8.10 F.P.S.	1.50% 0.02 Hrs.
Total Area in Acres =	7.28 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	88			
Time Of Concentration =	0.25 Hrs.	0.21 Hrs.	0.01 Hrs.	0.02 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.5 In.	12.2 CFS	38,779 Cu. Ft.
2 Year	3.2 In.	2.0 In.	16.7 CFS	52,773 Cu. Ft.
5 Year	4.2 In.	2.9 In.	24 CFS	77,035 Cu. Ft.
10 Year	5.1 In.	3.8 In.	31 CFS	99,469 Cu. Ft.
25 Year	5.6 In.	4.2 In.	35 CFS	112,089 Cu. Ft.
50 Year	6.3 In.	4.9 In.	41 CFS	129,892 Cu. Ft.
100 Year	7.2 In.	5.8 In.	48 CFS	152,954 Cu. Ft.

Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

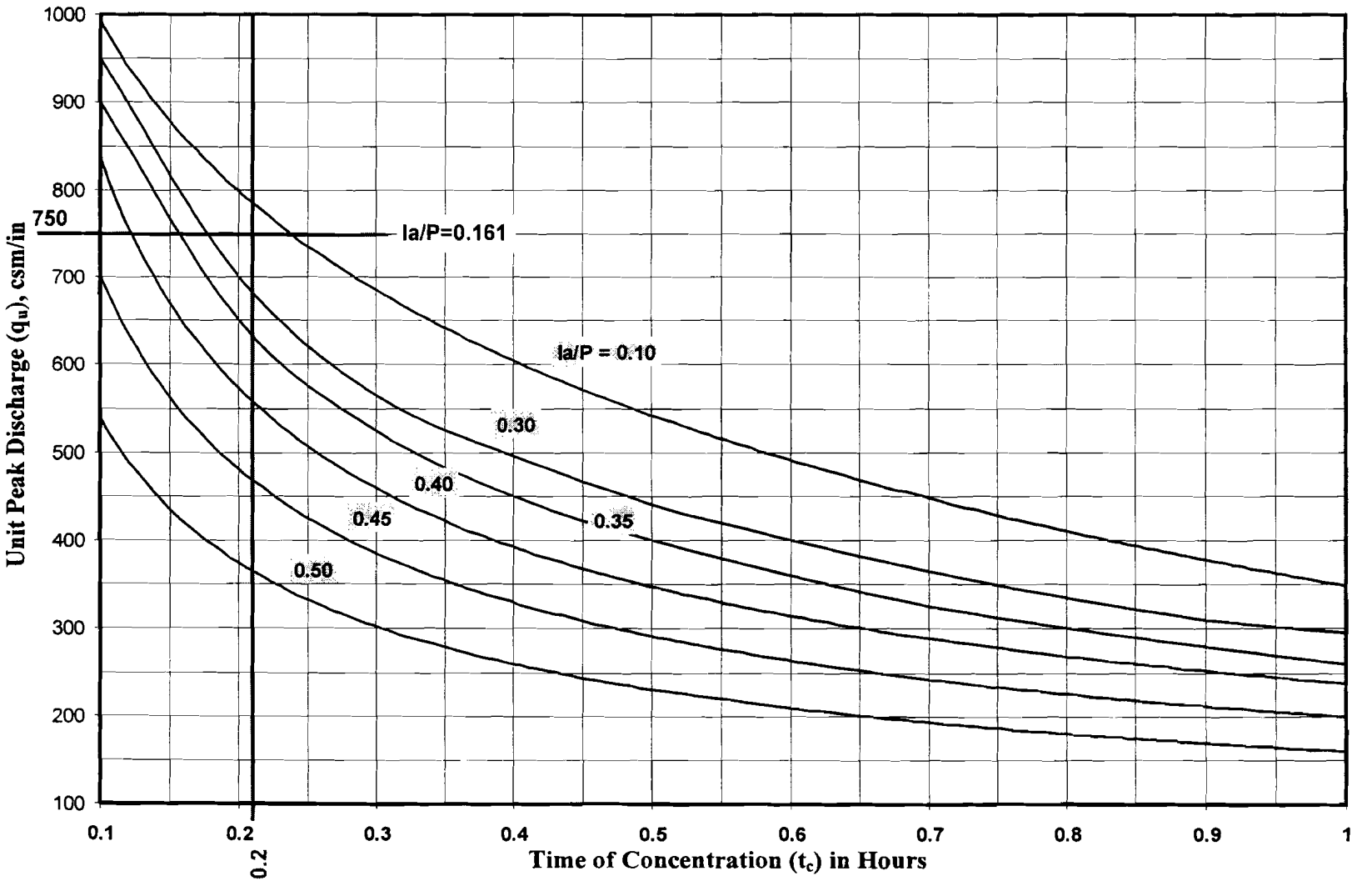
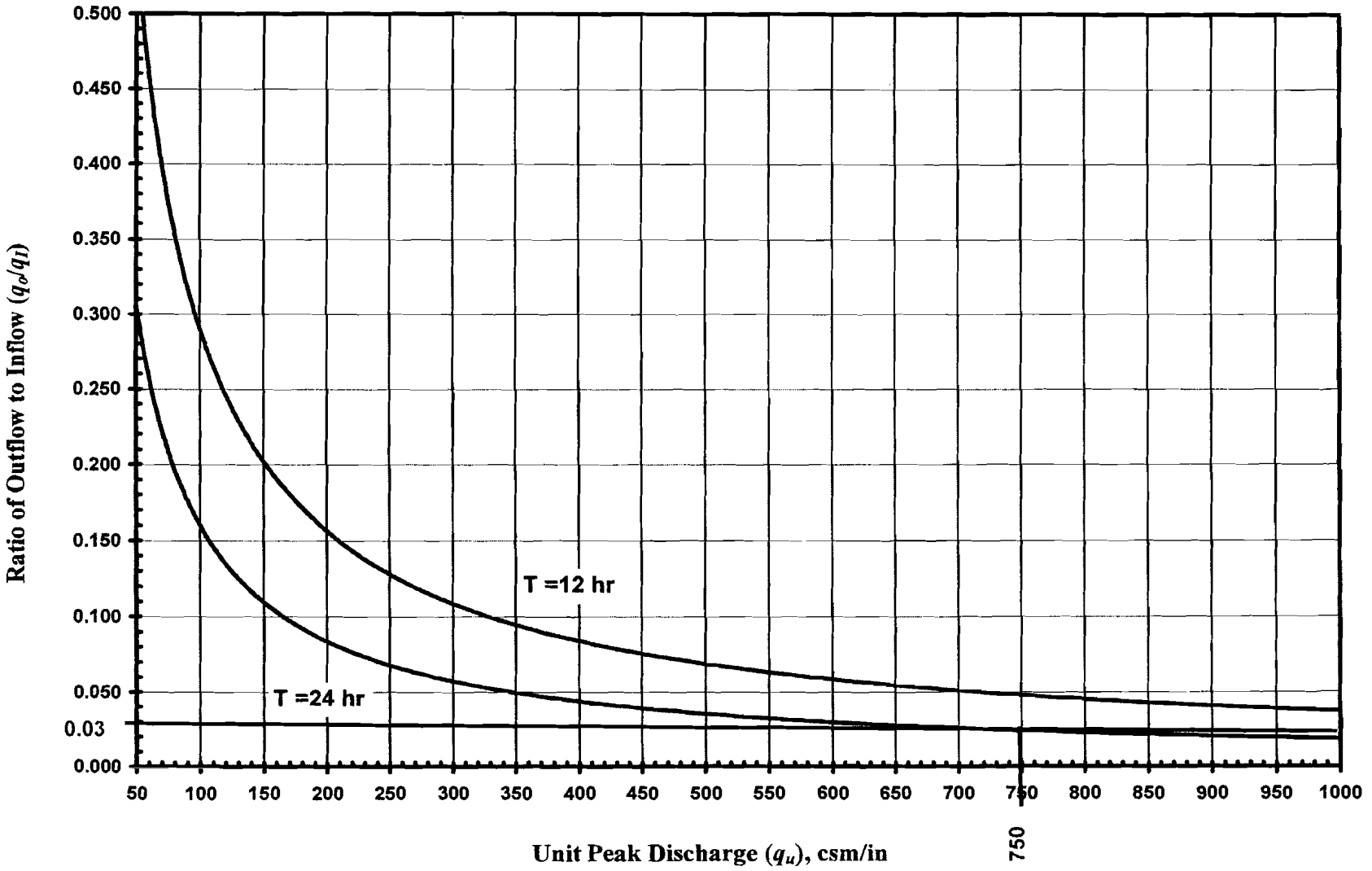


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)



CHANNEL PROTECTION VOLUME – Phase 1

LOIEDERMAN SOLTESZ ASSOCIATES 2 Research Pl., Suite 100 Rockville, Maryland 20850 Tel 301-948-2750 Fax 301-948-9067	Date: 12/7/2009 Revised Date: _____ Project Name: Orchard Pond - Phase 1 Project No.: 7740800 Prepared By: AXQ Checked: _____	Sheet ___ of ___	

Channel Protection Storage Volume Computations - POST DEV. Condition

Post-Development Drainage Area A = 4.68 AC

Time of Concentration, t_c= 0.21 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 83 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a= 2.00 in. (FROM TABLE 5.3 OF 2000 MD STORMWATER DESIGN MANUAL - TO MEET WOODS CONDITION REQUIREMENTS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

83 Initial Abstraction, $I_a = \frac{200}{83} - 2$

Initial Abstraction, I_a = 0.41

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.16

Unit Peak Factor, q_u = 750 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 750 x 4.68/640 x 2

q_i = 10.97 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.030 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.33 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.780 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

$V_s/V_r = 0.683 - 1.43\,(0.03) + 1.64\,(0.03)^2 - 0.804\,(0.03)^3$

V_s/V_r = 0.642

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.500 acre-ft **

21798 cu-ft

Vault Size		
Minimum Size		
L=	249	ft
W=	35	ft
Depth=	2.5	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.5 ft.

# PIPES	pipe size		pipe lenth	
3	72	in	257	ft
		Area		
		28.27	sf	
		Volume	21798	c.f

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Project No.	0774-08-00
By	AXQ
Checked	

ORIFICE CALCULATION - CPV

Vs =	0.500	Ac. Ft.	From Channel Protection Storage Volume
Elev. (Vs) =	410.00		Elevation corresponding to Vs=0.500 Ac. Ft.
Vault Bottom =	405.50		Elevation of the bottom of the Vault
H =	4.50	Ft.	

Qo = 0.33 CFS — From Channel Protection Storage Volume

$$A = \frac{Qo}{0.6 \times (2gH)^{0.5}}$$ g = 32.20

= 0.03231 Ft^2

$$D = \left(\frac{4 \times A}{3.1416}\right)^{0.5}$$ Appendix D.11.1 SWM 2000 Manual

= 0.20282 Ft.

= **2.43 in.**

Use D = **4.00 in. Pipe** — Use Orifice PLATE Size 2.50 "

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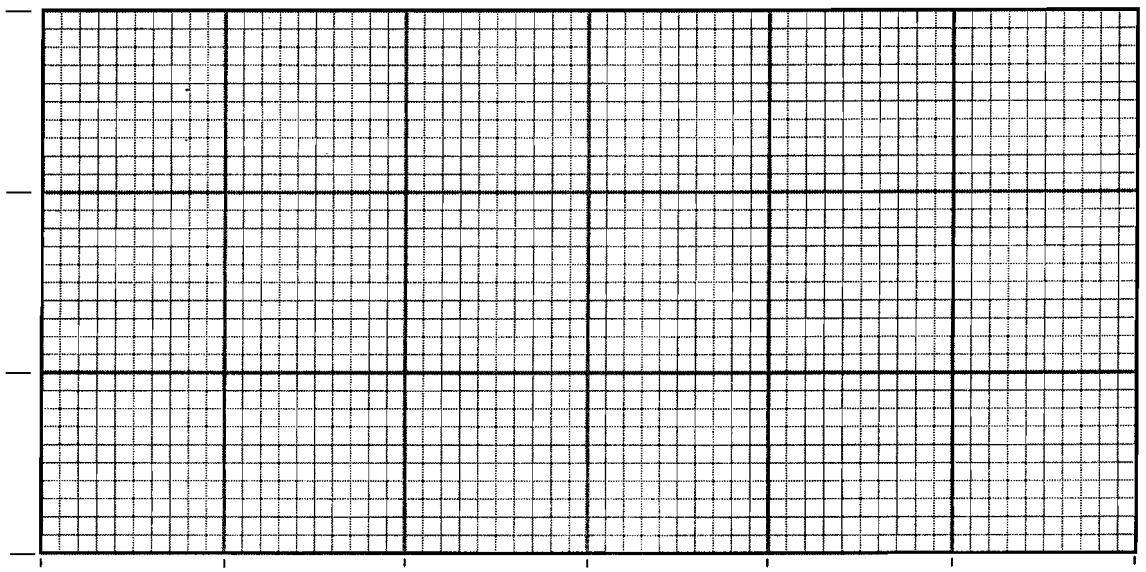
10 YEAR QUANTITY VOLUME – Phase 1

Worksheet 6a: Detention basin storage, peak outflow discharge (q_o) known

Project	By	Date
Orchard Pond - Phase I	AXQ	10/20/09
Location	**Checked**	**Date**
City of Gaithersburg		

Check one: ☐ Present ☒ Developed

☐ Elevation or ☐ stage



Detention basin storage (acre feet)

1. Data:
   Drainage area ..... A_m = 0.011 mi²
   Rainfall distribution type (I, IA, II, III) = II

	1st Stage	2nd Stage
2. Frequency ..... yr	10	100
3. Peak inflow discharge q_i ..... ft³/s (from worksheet 4 or 5b)	28	45
4. Peak outflow discharge q_u ..... ft³/s	10	22 1/
5. Compute $\frac{q_o}{q_i}$	0.357	0.489
6. $\frac{V_s}{V_r}$ ..... (Use $\frac{q_o}{q_i}$ with figure 6-1)	0.342	0.280
7. Runoff, Q ..... in (From worksheet 2)	3.4	5.3
8. Runoff volume V_r..... ac ft ($V_r = QA_m$ 53.33)	1.99	3.11
9. Storage volume, V_s ..... ac-ft ($V_s = V_r \left(\frac{V_s}{V_r}\right)$)	0.68	0.87
10. Maximum storage E_{max} (from plot)		

Not Controlled

Not Controlled

1/ 2nd stage q_o includes 1st stage q_o.

Ochard Pond - Phase I

nput requirements and procedures

;se figure 6-1 to estimate storage volume (V_s) equired or peak outflow discharge (q_o). The most requent application is to estimate V_s, for which the equired inputs are runoff volume (V_r), q_o, and peak nflow discharge (q_i). To estimate q_o, the required nputs are V_r, V_s, and q_i.

Estimating V_s

Use worksheet 6a to estimate V_s, storage volume required, by the following procedure.

1. Determine q_o. Many factors may dictate the selection of peak outflow discharge. The most common is to limit downstream discharges to a desired level, such as predevelopment discharge. Another factor may be that the outflow device has already been selected.
2. Estimate q_i by procedures in chapters 4 or 5. Do not use peak discharges developed by any other procedure. When using the Tabular Hydrograph method to estimate q_i for a subarea, only use

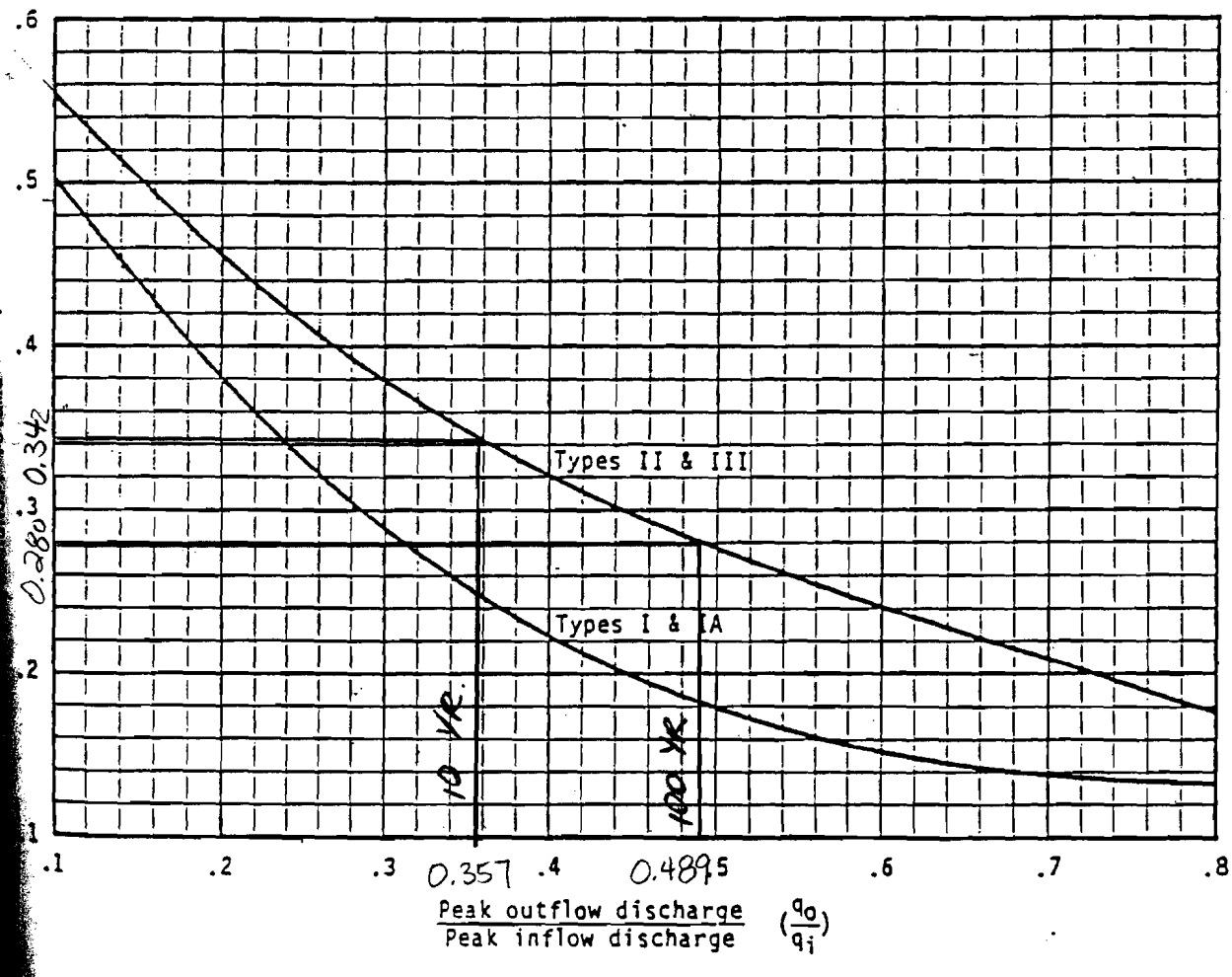


Figure 6-1.—Approximate detention basin routing for rainfall types I, IA, II, and III.

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Plan Scale:

Water Quantity Stage Storage Tabulation for Underground Vault (245' x 35' x 4.5')

Elevation	Area	Average Area	Differential Depth	Incremental Volume	Cumulative Volume	Cumulative Volume
(ft.)	(sq.ft.)	(sq.ft.)	(ft.)	(cu.ft.)	(cu.ft.)	(ac.ft.)
405.50	8,575				0	0.0000
		8,575	0.50	4,288		
406.00	8,575				4,288	0.0984
		8,575	0.50	4,288		
406.50	8,575				8,575	0.1969
		8,575	0.50	4,288		
407.00	8,575				12,863	0.2953
		8,575	0.50	4,288		
407.50	8,575				17,150	0.3937
		8,575	0.50	4,288		
408.00	8,575				21,438	0.4921
		8,575	0.50	4,288		
408.50	8,575				25,725	0.5906
		8,575	0.50	4,288		
409.00	8,575				30,013	0.6890
		8,575	0.50	4,288		
409.50	8,575				34,300	0.7874
		8,575	0.50	4,288		
410.00	8,575				38,588	0.8858

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WATER QUALITY – Phase 1

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Date:	12/3/2009	Revised Date:	
Project	**Orchard Pond - Phase 1**		
Project No.:	0774-08-00		
Prepared By:	MCS	Checked:	

ENVIRONMENTAL SITE DESIGN (ESD) SIZING REQUIREMENTS

DA# 1:

Drainage Area (DA):	20,960 ft^2	
Impervious Area (I):	12,000 ft^2	
% Impervious:	57.3 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	2.0 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	1.13 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	1975 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	1481 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention

Surface Area (A_f)	3000 ft^2	
Treated Rainfall (P_E)	2.1 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	6 inches	
Temp Storage Provided	1500 ft^3	

DA# 2:

Drainage Area (DA):	24,470 ft^2	
Impervious Area (I):	13,440 ft^2	
% Impervious:	54.9 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	1.8 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	0.98 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	1998 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	1499 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention

Surface Area (A_f)	3000 ft^2	
Treated Rainfall (P_E)	1.8 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	6 inches	
Temp Storage Provided	1500 ft^3	

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Project	**Orchard Pond - Phase 1**		
Project No.:	0774-08-00		
Prepared By:	MCS	Checked:	

ENVIRONMENTAL SITE DESIGN (ESD) SIZING REQUIREMENTS

DA# 3:

Drainage Area (DA):	29,400 ft^2	
Impervious Area (I):	18,400 ft^2	
% Impervious:	62.6 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	2.0 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	1.23 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	3005 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	2254 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention

Surface Area (A_f)	4000 ft^2	
Treated Rainfall (P_E)	2.0 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	8 inches	
Temp Storage Provided	2667 ft^3	

DA# 4:

Drainage Area (DA):	5,690 ft^2	
Impervious Area (I):	4,200 ft^2	
% Impervious:	73.8 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	2.2 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	1.57 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	745 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	559 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention Planter Box

Surface Area (A_f)	840 ft^2	
Treated Rainfall (P_E)	2.2 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	8 inches	
Temp Storage Provided	560 ft^3	

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Date:	12/3/2009	Revised Date:	
Project	**Orchard Pond - Phase 1**		
Project No.:	0774-08-00		
Prepared By:	MCS	Checked:	

ENVIRONMENTAL SITE DESIGN (ESD) SIZING REQUIREMENTS

DA# 5:

Drainage Area (DA):	20,830 ft^2	
Impervious Area (I):	10,960 ft^2	
% Impervious:	52.6 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	1.8 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	0.94 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	1636 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	1227 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention Planter Box

Surface Area (A_f)	2500 ft^2	
Treated Rainfall (P_E)	1.8 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	6 inches	
Temp Storage Provided	1250 ft^3	

DA# 6:

Drainage Area (DA):	6,500 ft^2	
Impervious Area (I):	5,200 ft^2	
% Impervious:	80.0 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	2.2 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	1.69 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	918 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	688 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention Planter Box

Surface Area (A_f)	1000 ft^2	
Treated Rainfall (P_E)	2.3 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	12 inches	
Temp Storage Provided	1000 ft^3	

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Project	**Orchard Pond - Phase 1**		
Project No.:	0774-08-00		
Prepared By:	MCS	Checked:	

ENVIRONMENTAL SITE DESIGN (ESD) SIZING REQUIREMENTS

DA# 7:

Drainage Area (DA):	3,700 ft^2	
Impervious Area (I):	2,900 ft^2	
% Impervious:	78.4 %	
Soil Type:	B	
Target RCN	55	For Soil Type B, "woods in good condition"
Taget Rainfall (P_E)	2.2 inches	From Table 5.3 OF 2000 MD Stormwater Design Manual
Target Runoff Depth (Q_E)	1.66 inches	$Q_E = P_E \times R_V$, $R_V = 0.05 + (0.009 \times I)$
Runoff Volume (ESD_V)	512 ft^3	$(P_E \times R_V \times A) / 12$
Temp Storage Required	384 ft^3	$0.75 \times ESD_V$

ESD provided: Microbioretention Planter Box

Surface Area (A_f)	550 ft^2	
Treated Rainfall (P_E)	2.2 inches	$P_E = 15$ in $\times A_f / DA$
Ponding Depth	12 inches	
Temp Storage Provided	550 ft^3	

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Project Name	Orchard Pond - Phase 1
Project No.	0774-08-00
By	AXQ
Checked	

WATER QUALITY VOLUME (WQ_V) COMPUTATIONS

Inches of Rainfall, P = 2.0 in. (PE = 2.0" Per MDE 2007 for Wood Condition)

Drainage Area, A = 4.68 Acres

Impervious Area, A_I = 2.68 Acres

Percent Imperviousness, I = 57.3 %

Volumetric Runoff Coefficient, R_V = 0.05 + 0.009(I)

R_V = 0.05 + 0.009(57.3)

R_V = 0.565

Water Quality Volume, WQ_V = (P x R_V x A)/12

WQ_V = (2 in. x 0.565 x 4.68 Ac.)/12

WQ_V = 0.441 Ac-Ft
= (19197 Ft^3)
(To be stored under CPv in concrete vault under garage)

Vault Size		
Minimum Size		
L=	249	ft
W=	35	ft
Depth=	2.2	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.2 ft.

FLOWSPLITTER COMPUTATION – Phase 1

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Date 12/7/09
Project Name ORCHARD POND - Ph. 1
Project No. 0774-08-00
By AXQ
Checked

Structure #FSP-11 (Weir Wall Flowsplitter)
CPV- FLOWSPLITTER COMPUTATIONS

DESIGN INPUT:

TOTAL D.A.= **4.68** **ac**

IMPERV. D.A.= **2.68** **ac**

% IMPERV. (I) = **57.3%**

Rainfall (P) = **2.0** **in** (PE = 2.0" Per MDE 2007 for Wood Condition)

R_v = 0.05 + 0.009 (I)= **0.57**

Runoff Volume (Q_a) = P x R_v = **1.13** **in**

CN = 1000 / [10+5P+10Q_a - 10 x sqrt (Q_a^2+1.25Q_aP)] = **90.535**

I_a = 200/CN -2 = **0.2091**

I_a/P = **0.10455**

Unit Peak Discharge (q_u) = **750** **csm/in** {Exhibit 4-II from Technical Release 55 Chapter 4}

SPLITTER DESIGN:

Flow Rate Required = Peak Discharge = (TOTAL D.A./640AC./SQMI./in) x Q_a x q_u = **6.20 CFS**

SPLITTER PIPE DIAMETER= **15** **IN.**

CROSS-SECTIONAL AREA OF SPLITTER PIPE= **1.227 SF**

INVERT OF SPLITTER PIPE IN STRUCTURE= **405.50**

INVERT OF OUTGOING STORM DRAIN= **407.50**

HEAD ON SPLITTER=INV. S.D.-INV. SPLITTER-DIA./24= **1.38 FT.**

SPLITTER FLOWRATE=0.6XAREA OF SPLITTERX$(64.4XHEAD)^{0.5}$= **6.93 CFS**

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Date	10/20/2009
Project Name	ORCHARD POND
Project No.	0774-08-00
By	AXQ
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Stormfilter Sizing Computations(FLOW BASE)
UNDERGROUND FILTER

TOTAL D.A.= **4.68** **ac**
IMPERV. D.A.= **2.68** **ac**
% IMPERV. (I) = **57.3%**
Rainfall (P) = **1** **in**
R_v = 0.05 + 0.009 (I)= **0.57**
Runoff Volume (Q_a) = P x R_v = **0.57** **in**
CN = 1000 / [10+5P+10Q_a - 10 x sqrt (Q_a^2+1.25Q_aP)]
CN = **95.03217**
I_a = 200/CN -2 = **0.104551**
I_a/P = **0.104551**
Unit Peak Discharge (q_u) = **750** **csm/in**
Flow Rate Required = Peak Discharge
= (TOTAL D.A./640AC./SQMI./in) x Qa x qu
= **3.10** **CFS**

Nflow (# Cartridges) = Q (449 gpm/cfs/ 22.5 gpm/cart) (Utilitzing 27" Cartridges)
= 61.87781
Use 62 Cartridges.
Requires(2) '8' x 20' Stormfilter

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TR-55 – Phase II

EXISTING DA DATA

COLLECTED: 10/22/2009
BY: MLE

Drainage Area	Type	Description	Soil Name	Soil Type	CN (Table 2-2)	Area (Ac.)
Ph2_SWM1	Impervious	Pavement	66 UB	B/D	98	0.81
		Sidewalk	66 UB	B/D	98	0.14
		Tennis Court	66 UB	B/D	98	0.60
		Building	66 UB	B/D	98	0.25
	Open Space		66 UB	B/D	69	1.44
					Total Area	3.24

Drainage Area	Type	Description	Soil Name (Type	Soil Type	CN (Table 2-2)	Area (Ac.)
Ph2_SWM2	Impervious	Pavement	66 UB	B/D	98	0.23
		Sidewalk	66 UB	B/D	98	0.28
		Building	66 UB	B/D	98	0.63
	Impervious	Pavement	66 UC	B/D	98	0.30
		Sidewalk	66 UC	B/D	98	0.08
		Building	66 UC	B/D	98	0.12
	Open Space	Grass Fair	66 UB	B/D	69	1.49
		Grass Fair	66 UC	B/D	69	1.10
					Total Area	4.23

Drainage Area	Type	Description	Soil Name (Type	Soil Type	CN (Table 2-2)	Area (Ac.)
Ph2_SWM3	Impervious	Pavement	66 UB	B/D	98	1.03
		Sidewalk	66 UB	B/D	98	0.13
		Building	66 UB	B/D	98	0.35
		Pool	66 UB	B/D	98	0.00
	Impervious	Pavement	66 UC	B/D	98	0.00
		Sidewalk	66 UC	B/D	98	0.10
		Building	66 UC	B/D	98	0.50
		Pool	66 UC	B/D	98	0.18
	Open Space	Grass Fair	66 UB	B/D	69	0.89
		Grass Fair	66 UC	B/D	69	1.16
					Total Area	4.34

Drainage Area	Type	Description	Soil Name (Type	Soil Type	CN (Table 2-2)	Area (Ac.)
Ph2_SWM4	Impervious	Pavement	66 UB	B/D	98	0.61
		Sidewalk	66 UB	B/D	98	0.13
		Building	66 UB	B/D	98	0.63
	Impervious	Pavement	66 UC	B/D	98	0.60
		Sidewalk	66 UC	B/D	98	0.09
		Building	66 UC	B/D	98	0.14
	Open Space	Grass Fair	66 UB	B/D	69	1.85
		Grass Fair	66 UC	B/D	69	0.46
					Total Area	4.51

Drainage Area	Type	Description	Soil Name (Type	Soil Type	CN (Table 2-2)	Area (Ac.)
Ph2_SWM5	Impervious	Pavement	66 UB	B/D	98	0.54
		Sidewalk	66 UB	B/D	98	0.24
		Building	66 UB	B/D	98	0.26
	Impervious	Pavement	66 UC	B/D	98	0.56
		Sidewalk	66 UC	B/D	98	0.11
		Building	66 UC	B/D	98	0.80
	Open Space	Grass Fair	66 UB	B/D	69	1.56
		Grass Fair	66 UC	B/D	69	0.44
					Total Area	4.51

JOB:	Orchard Pond Phase 2			AXQ
DRAINAGE AREA NAME:	Existing Drainage Area - SWM1			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Pavement	66 UB	B/D	98	0.81 Ac.
Sidewalk	66 UB	B/D	98	0.14 Ac.
Tennis Court	66 UB	B/D	98	0.60 Ac.
Buildings	66 UB	B/D	98	0.25 Ac.
Open Space Grass Fair	66 UB	B/D	69	1.44 Ac.
			AREA SUBTOTALS:	3.24 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	short grass	'n'=0.15	100 Ft.	2.71% 0.14 Hrs
Shallow Flow	UNPAVED		104 Ft. 3.34 F.P.S.	4.29% 0.01 Hrs.
Channel Flow (a) Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	205 Ft. 4.50 F.P.S.	2.00% Est at 0.01 Hrs
(b) Hydraulic Radius =0.75	X-S estimated	'n'=0.013 WP estimated	50 Ft. 6.69 F.P.S.	0.50% 0.00 Hrs.
		WP estimated		
Total Area in Acres =	3.24 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	85			
Time Of Concentration =	0.17 Hrs.	0.14 Hrs.	0.01 Hrs.	0.01 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	Precipitation (P) inches	Runoff (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.3 In.	5.3 CFS	14,803 Cu. Ft.
2 Year	3.2 In.	1.8 In.	7.6 CFS	20,672 Cu. Ft.
5 Year	4.2 In.	2.6 In.	11 CFS	31,018 Cu. Ft.
10 Year	5.1 In.	3.5 In.	15 CFS	40,701 Cu. Ft.
25 Year	5.6 In.	3.9 In.	17 CFS	46,180 Cu. Ft.
50 Year	6.3 In.	4.6 In.	20 CFS	53,939 Cu. Ft.
100 Year	7.2 In.	5.4 In.	24 CFS	64,028 Cu. Ft.

Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

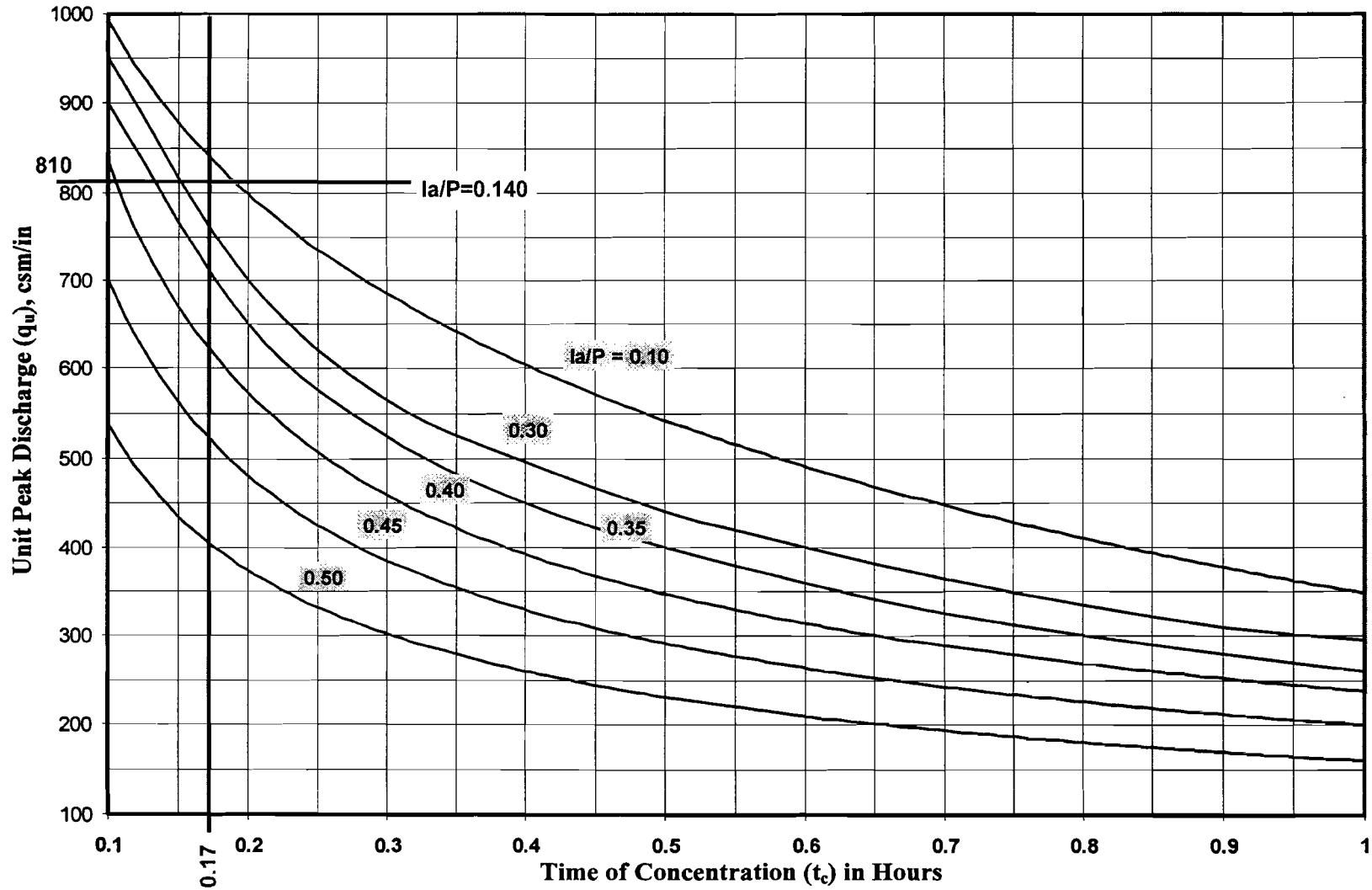
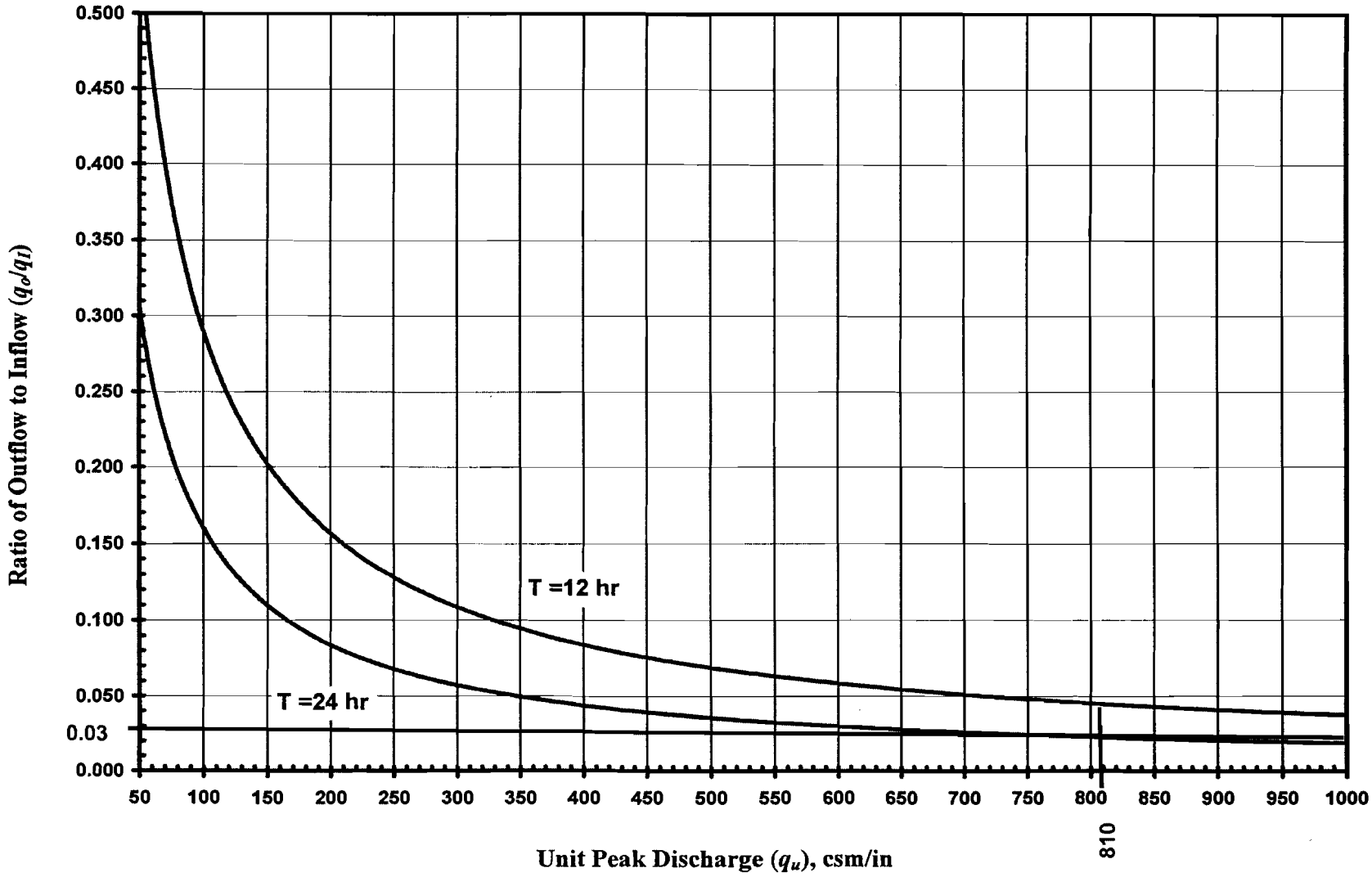


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)



JOB:	Orchard Pond Phase 2			AXQ
DRAINAGE AREA NAME:	Existing Drainage Area - SWM2			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Pavement	66 UB	B/D	98	0.23 Ac.
Sidewalk	66 UB	B/D	98	0.28 Ac.
Building	66 UB	B/D	98	0.63 Ac.
Pavement	66 UC	B/D	98	0.30 Ac.
Sidewalk	66 UC	B/D	98	0.08 Ac.
Building	66 UC	B/D	98	0.12 Ac.
Grass Fair	66 UB	B/D	69	1.49 Ac.
Grass Fair	66 UC	B/D	69	1.10 Ac.
			AREA SUBTOTALS:	4.23 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	short grass	'n'=0.15	100 Ft.	9.22% 0.09 Hrs
Shallow Flow	UNPAVED		203 Ft. 2.27 F.P.S.	1.97% 0.02 Hrs.
Channel Flow (a) Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	237 Ft. 4.50 F.P.S.	3.08% Est at 0.01 Hrs
(b) Hydraulic Radius =0.75	X-S estimated	'n'=0.013 WP estimated	120 Ft. 6.69 F.P.S.	0.50% 0.00 Hrs.
		WP estimated		
Total Area in Acres =	4.23 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	80			
Time Of Concentration =	0.13 Hrs.	0.09 Hrs.	0.02 Hrs.	0.02 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.0 In.	5.6 CFS	14,721 Cu. Ft.
2 Year	3.2 In.	1.4 In.	8.3 CFS	21,526 Cu. Ft.
5 Year	4.2 In.	2.2 In.	13 CFS	33,905 Cu. Ft.
10 Year	5.1 In.	3.0 In.	18 CFS	45,762 Cu. Ft.
25 Year	5.6 In.	3.4 In.	21 CFS	52,550 Cu. Ft.
50 Year	6.3 In.	4.1 In.	25 CFS	62,234 Cu. Ft.
100 Year	7.2 In.	4.9 In.	30 CFS	74,922 Cu. Ft.

Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

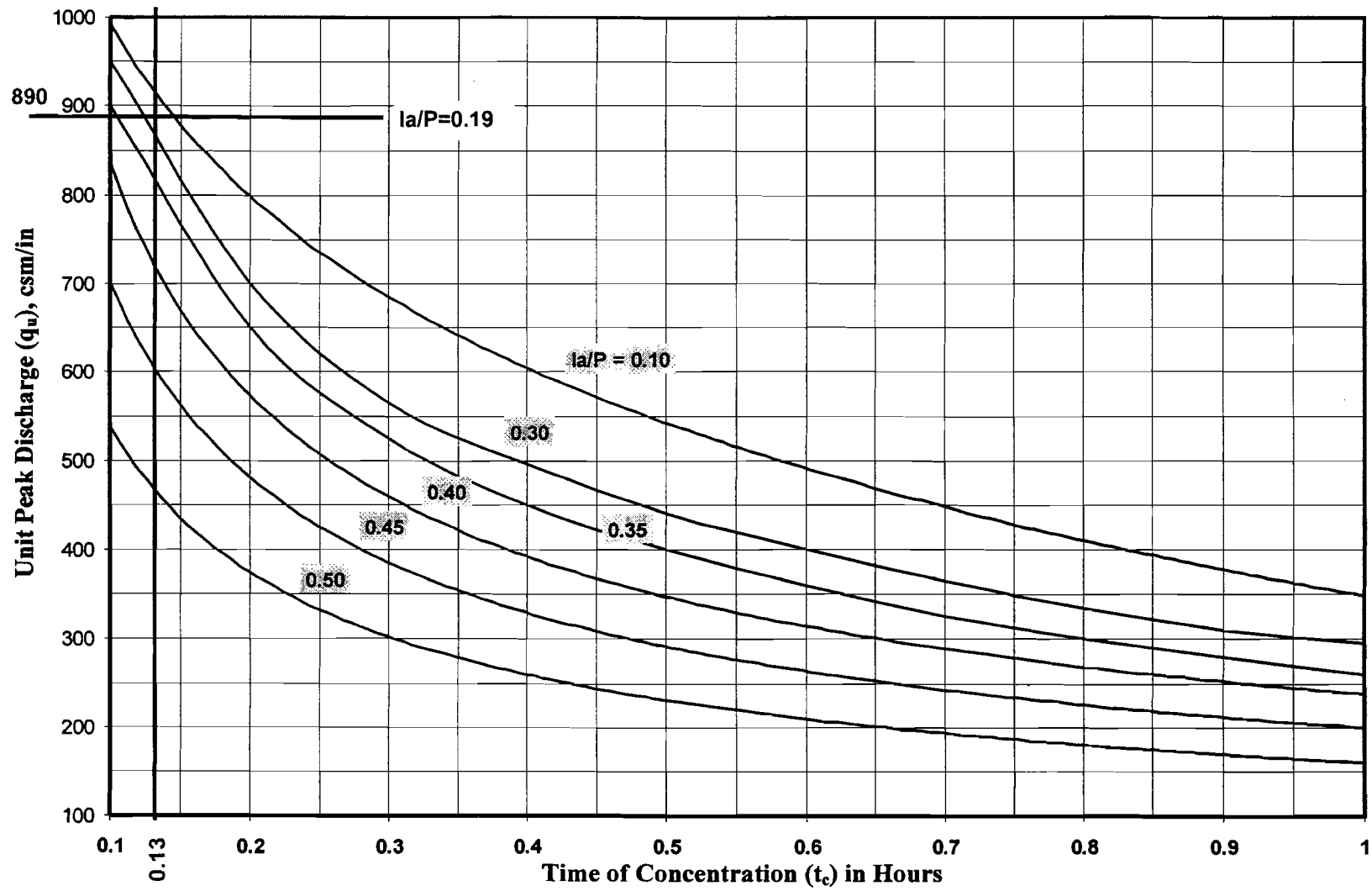
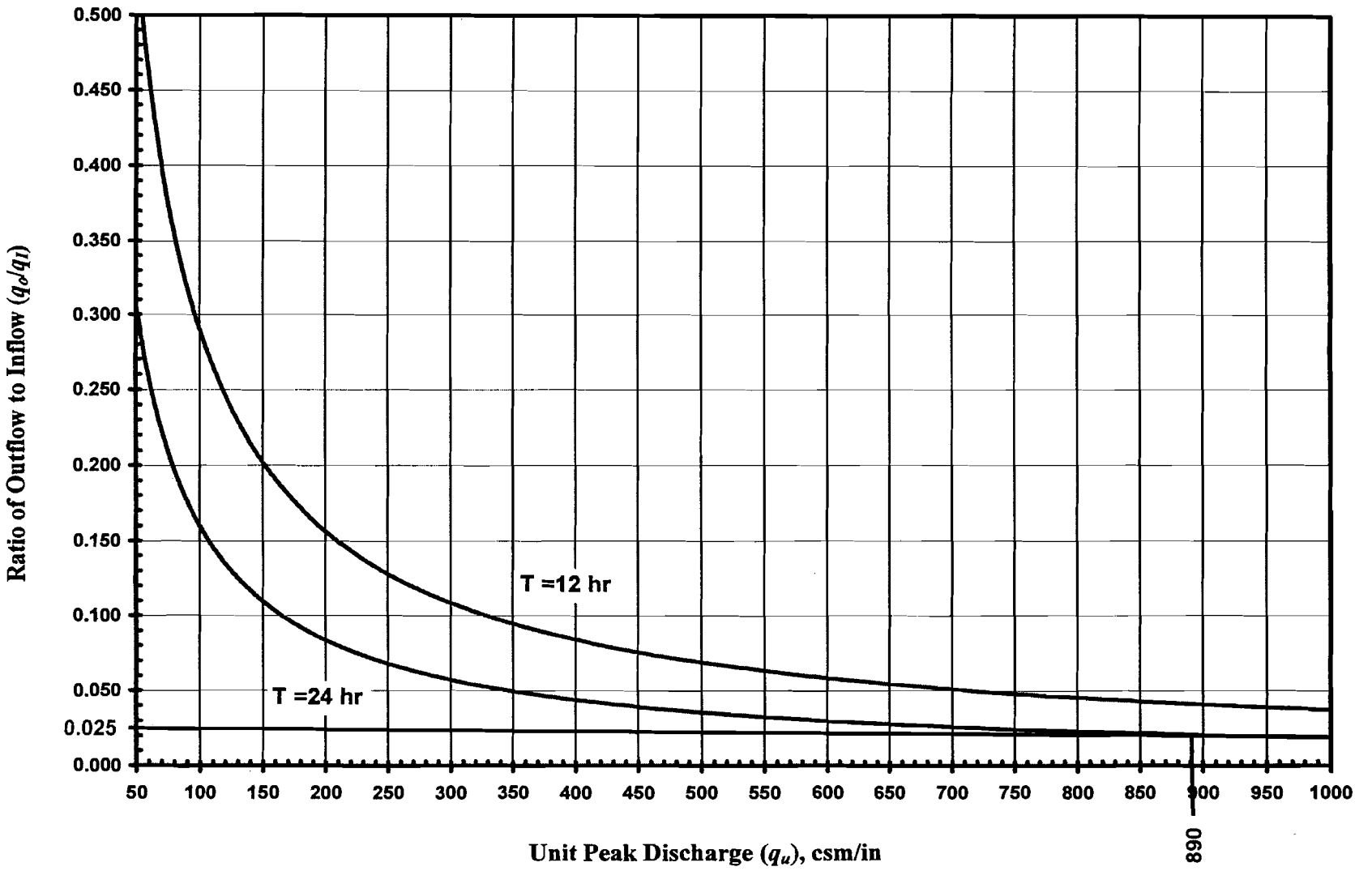


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)



JOB:	Orchard Pond Phase 2			AXQ
DRAINAGE AREA NAME:	Existing Drainage Area - SWM 3			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Pavement	66 UB	B/D	98	1.03 Ac.
Sidewalk	66 UB	B/D	98	0.13 Ac.
Building	66 UB	B/D	98	0.35 Ac.
Pool	66 UB	B/D	98	
Pavement	66 UC	B/D	98	
Sidewalk	66 UC	B/D	98	0.10 Ac.
Building	66 UC	B/D	98	0.50 Ac.
Pool	66 UC	B/D	98	0.18 Ac.
Grass Fair	66 UB	B/D	69	0.89 Ac.
Grass Fair	66 UC	B/D	69	1.16 Ac.
			AREA SUBTOTALS:	4.34 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	impervious	'n'=0.01	100 Ft.	1.37% 0.02 Hrs
Shallow Flow	PAVED		362 Ft. 4.44 F.P.S.	4.77% 0.02 Hrs.
Channel Flow (a) Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	330 Ft. 4.50 F.P.S.	2.94% Est at 0.02 Hrs
(b) Hydraulic Radius =0.75	X-S estimated	'n'=0.013 WP estimated	135 Ft. 8.19 F.P.S.	0.75% 0.00 Hrs.
		WP estimated		
Total Area in Acres =	4.34 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	84			
Time Of Concentration =	0.10 Hrs.	0.02 Hrs.	0.02 Hrs.	0.02 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	Precipitation (P) inches	Runoff (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.2 In.	8.0 CFS	18,812 Cu. Ft.
2 Year	3.2 In.	1.7 In.	11.4 CFS	26,504 Cu. Ft.
5 Year	4.2 In.	2.5 In.	17 CFS	40,144 Cu. Ft.
10 Year	5.1 In.	3.4 In.	23 CFS	52,966 Cu. Ft.
25 Year	5.6 In.	3.8 In.	26 CFS	60,237 Cu. Ft.
50 Year	6.3 In.	4.5 In.	31 CFS	70,548 Cu. Ft.
100 Year	7.2 In.	5.3 In.	37 CFS	83,973 Cu. Ft.

Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

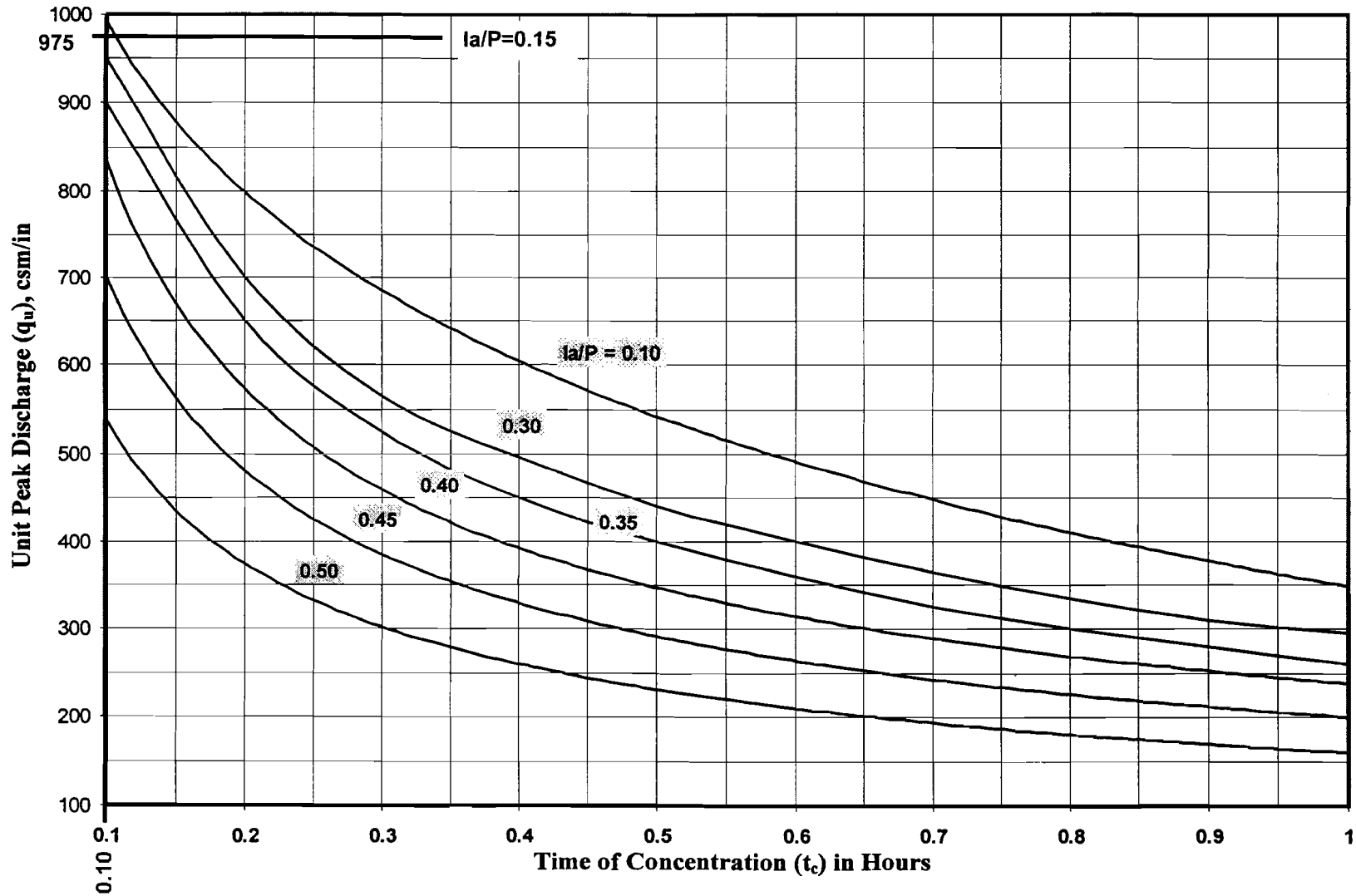
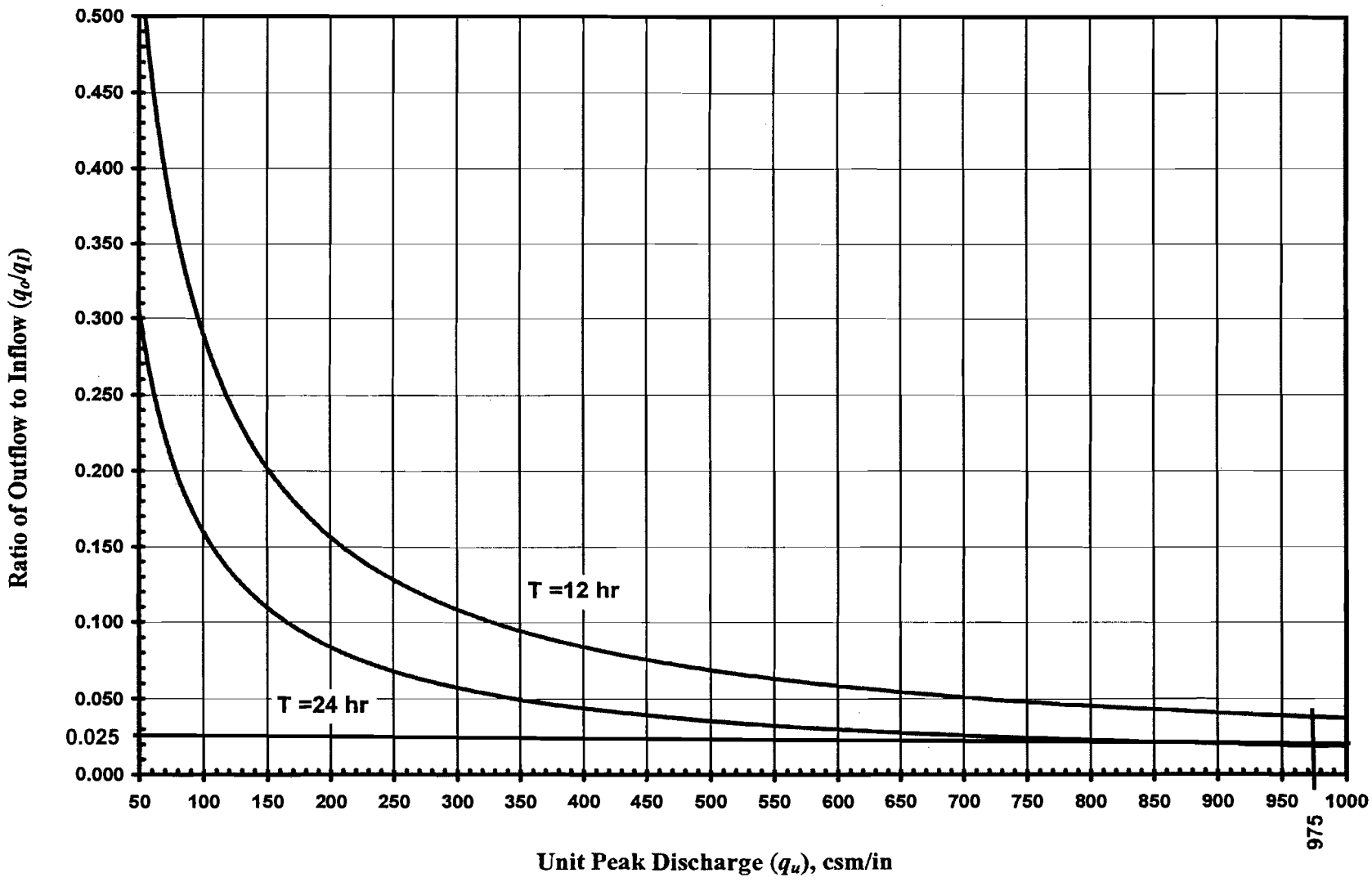


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)



JOB:	Orchard Pond Phase 2			AXQ
DRAINAGE AREA NAME:	Existing Drainage Area - SWM 4			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Pavement	66 UB	B/D	98	0.61 Ac.
Sidewalk	66 UB	B/D	98	0.13 Ac.
Building	66 UB	B/D	98	0.63 Ac.
Pavement	66 UC	B/D	98	0.60 Ac.
Sidewalk	66 UC	B/D	98	0.09 Ac.
Building	66 UC	B/D	98	0.14 Ac.
Grass Fair	66 UB	B/D	69	1.85 Ac.
Grass Fair	66 UC	B/D	69	0.46 Ac.
			AREA SUBTOTALS:	4.51 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	short grass	'n'=0.15	100 Ft.	3.60% 0.13 Hrs
Shallow Flow (a)	PAVED		151 Ft. 4.42 F.P.S.	4.74% 0.01 Hrs.
(b)	PAVED		259 Ft. 4.53 F.P.S.	4.96% 0.02 Hrs.
Channel Flow (a) Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	65 Ft. 4.50 F.P.S.	1.00% Est at 0.00 Hrs
(b) Hydraulic Radius =0.75	X-S estimated	'n'=0.013 WP estimated	27 Ft. 6.69 F.P.S.	0.50% 0.00 Hrs.
		WP estimated		
Total Area in Acres =	4.51 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	83			
Time Of Concentration =	0.16 Hrs.	0.13 Hrs.	0.03 Hrs.	0.01 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.1 In.	6.7 CFS	18,531 Cu. Ft.
2 Year	3.2 In.	1.6 In.	9.7 CFS	26,344 Cu. Ft.
5 Year	4.2 In.	2.5 In.	15 CFS	40,285 Cu. Ft.
10 Year	5.1 In.	3.3 In.	20 CFS	53,448 Cu. Ft.
25 Year	5.6 In.	3.7 In.	23 CFS	60,929 Cu. Ft.
50 Year	6.3 In.	4.4 In.	27 CFS	71,553 Cu. Ft.
100 Year	7.2 In.	5.2 In.	32 CFS	85,406 Cu. Ft.

JOB:	Orchard Pond Phase 2			AXQ
DRAINAGE AREA NAME:	Existing Drainage Area - SWM 5			20-Oct-09
COVER DESCRIPTION	SOIL NAME	GROUP A,B,C,D?	CN from TABLE 2-2	AREA (In acres)
Pavement	66 UB	B/D	98	0.54 Ac.
Sidewalk	66 UB	B/D	98	0.24 Ac.
Building	66 UB	B/D	98	0.26 Ac.
Pavement	66 UC	B/D	98	0.56 Ac.
Sidewalk	66 UC	B/D	98	0.11 Ac.
Building	66 UC	B/D	98	0.80 Ac.
Grass Fair	66 UB	B/D	69	1.56 Ac.
Grass Fair	66 UC	B/D	69	0.44 Ac.
			AREA SUBTOTALS:	4.51 Ac.
2-Yr 24 Hr Rainfall = 3.2 In	Surface Cover Cross Section	Manning 'n' Wetted Per	Flow Length Avg Velocity	Slope Tt (Hrs)
Sheet Flow	ultivated, cover<20'	'n'=0.06	100 Ft.	2.90% 0.07 Hrs
Shallow Flow	PAVED		324 Ft. 4.87 F.P.S.	5.74% 0.02 Hrs.
Channel Flow (a) Hydraulic Radius =0.75	Assumed Velocity X-S estimated	'n'=0.013 WP estimated	149 Ft. 4.50 F.P.S.	3.70% Est at 0.01 Hrs
(b) Hydraulic Radius =0.75	X-S estimated	'n'=0.013 WP estimated	117 Ft. 6.69 F.P.S.	0.50% 0.00 Hrs.
		WP estimated		
Total Area in Acres =	4.51 Ac.	Total Sheet Flow=	Total Shallow Flow=	Total Channel Flow =
Weighted CN =	85			
Time Of Concentration =	0.10 Hrs.	0.07 Hrs.	0.02 Hrs.	0.01 Hrs.
Pond Factor =	1	RAINFALL TYPE II		
STORM	*Precipitation* (P) inches	*Runoff* (Q)	Qp, PEAK DISCHARGE	TOTAL STORM Volumes
1 Year	2.6 In.	1.3 In.	8.8 CFS	20,605 Cu. Ft.
2 Year	3.2 In.	1.8 In.	12.5 CFS	28,775 Cu. Ft.
5 Year	4.2 In.	2.6 In.	19 CFS	43,176 Cu. Ft.
10 Year	5.1 In.	3.5 In.	25 CFS	56,654 Cu. Ft.
25 Year	5.6 In.	3.9 In.	28 CFS	64,282 Cu. Ft.
50 Year	6.3 In.	4.6 In.	33 CFS	75,082 Cu. Ft.
100 Year	7.2 In.	5.4 In.	39 CFS	89,125 Cu. Ft.

Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

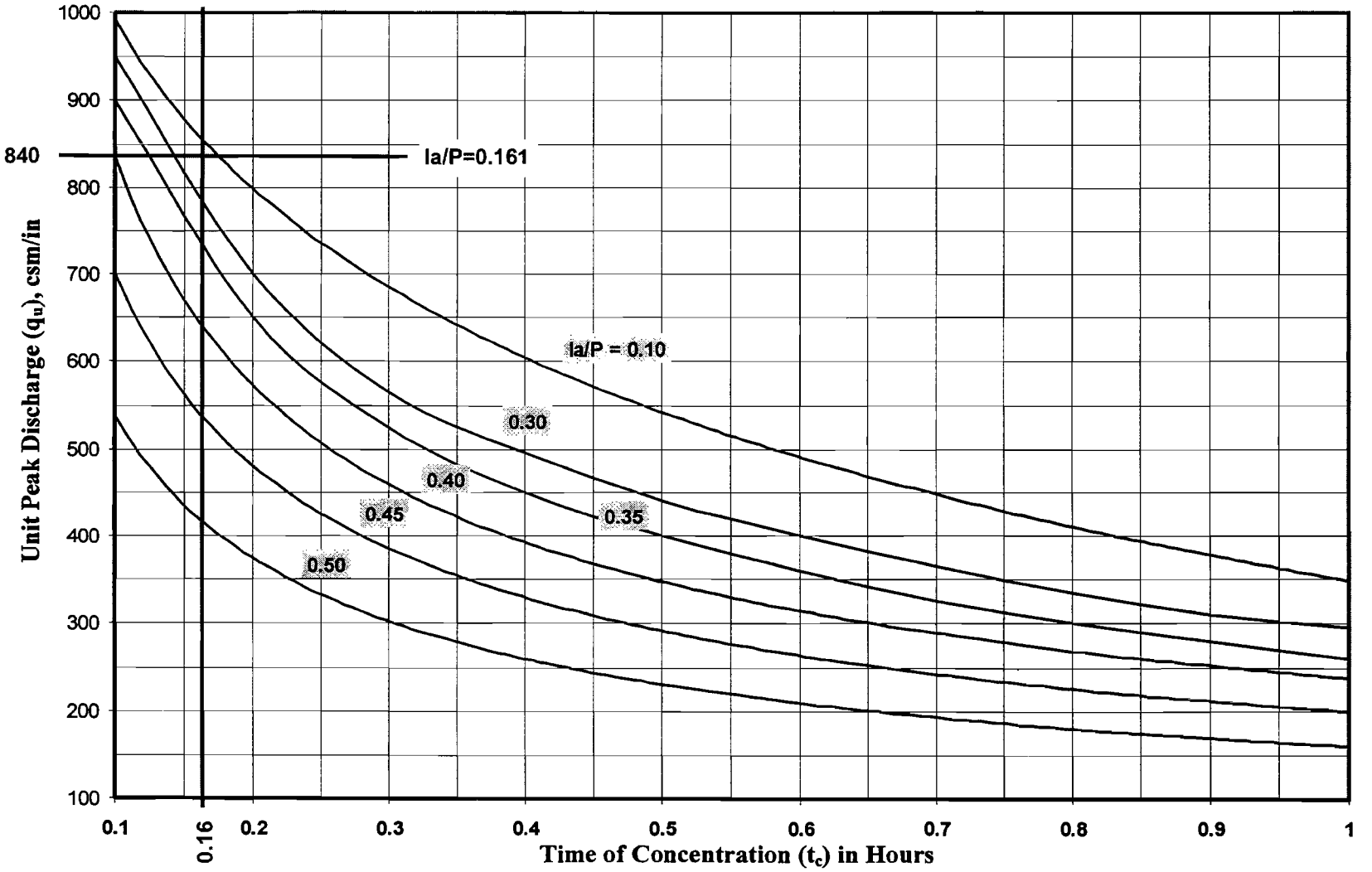


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)

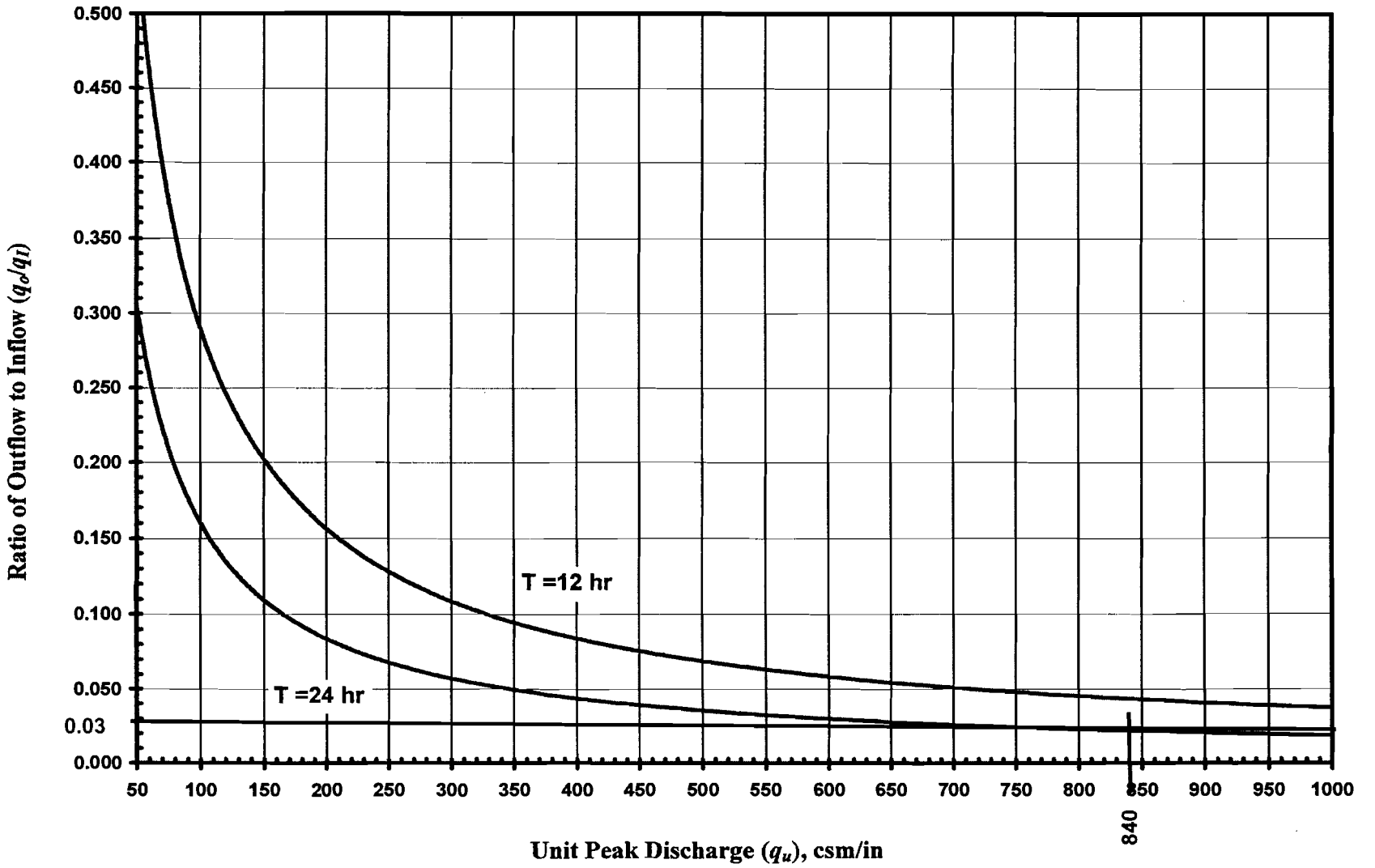


Figure D.11.1 **SCS Graphical Method of Determining Peak Discharge (q_u) in csm/in for 24-Hour Type II Storm Distribution**

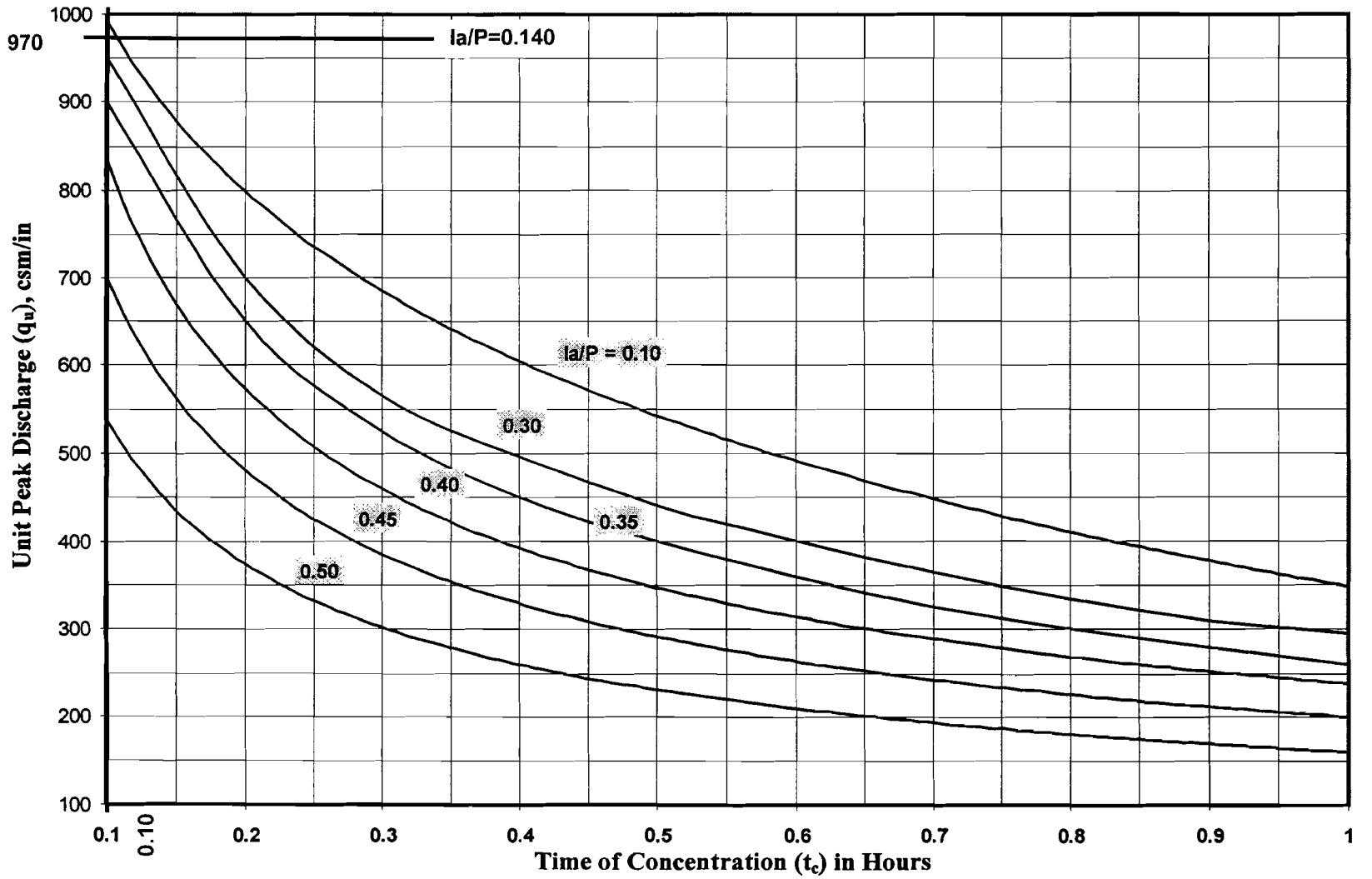
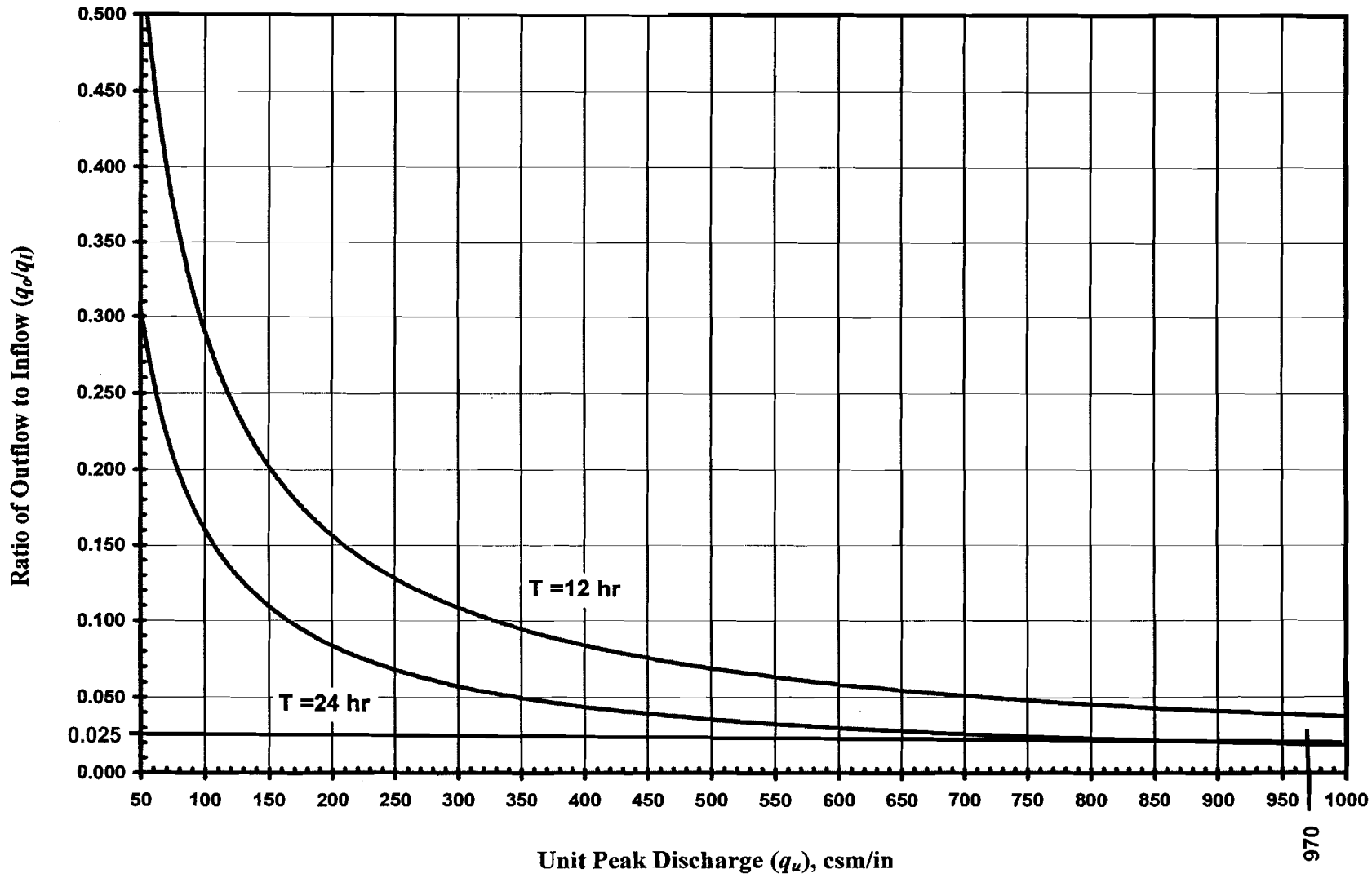


Figure D.11.2 Detention Time Versus Discharge Ratios (q_o/q_i)



CHANNEL PROTECTION VOLUME – Phase II

LOIEDERMAN SOLTESZ ASSOCIATES 2 Research Pl., Suite 100 Rockville, Maryland 20850 Tel 301-948-2750 Fax 301-948-9067	Date: 10/23/2009 Revised Date: _____ Project Name: Orchard Pond - Phase 2 Project No.: 7740800 Prepared By: AXQ Checked: _____	Sheet ___ of ___	

Channel Protection Storage Volume Computations - EX DEV. Condition
Phase 2 - SWM 1

Post-Development Drainage Area A = 3.24 AC

Time of Concentration, t_c= 0.17 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 85 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a= 1.30 in. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

85 Initial Abstraction, $I_a = \frac{200}{85} - 2$

Initial Abstraction, I_a = 0.35

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.14

Unit Peak Factor, q_u = 810 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 810 x 3.24/640 x 1.3

q_i = 5.33 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.030 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.16 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.351 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

V_s/V_r = 0.683 − 1.43 (0.03) + 1.64 (0.03)^2 − 0.804 (0.03)^3

V_s/V_r = 0.642

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.225 acre-ft **

9809 cu-ft

Vault Size		
Minimum Size		
L=	71	ft
W=	55	ft
Depth=	2.5	ft

# PIPES	pipe size		pipe lenth	
8	48	in	98	ft
		Area		
		12.57	sf	
		Volume	9809	c.f

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Channel Protection Storage Volume Computations - EX DEV. Condition
Phase 2 - SWM 2

Post-Development Drainage Area A = 4.23 AC

Time of Concentration, t_c= 0.13 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 80 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a= 1.00 in. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

80 Initial Abstraction, $I_a = \frac{200}{80} - 2$

Initial Abstraction, I_a = 0.50

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.19

Unit Peak Factor, q_u = 890 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 890 x 4.23/640 x 1

q_i = 5.88 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.025 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.15 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.353 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

$V_s/V_r = 0.683 - 1.43\,(0.025) + 1.64\,(0.025)^2 - 0.804\,(0.025)^3$

V_s/V_r = 0.648

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.229 acre-ft **

9954 cu-ft

Vault Size		
Minimum Size		
L=	80	ft
W=	50	ft
Depth=	2.5	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.5 ft.

# PIPES	pipe size		pipe lenth	
8	48	in	99	ft
		Area		
		12.57	sf	
		Volume	9954	c.f

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Channel Protection Storage Volume Computations - EX DEV. Condition
Phase 2 - SWM 3

Post-Development Drainage Area A = 4.34 AC

Time of Concentration, t_c = 0.10 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 84 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a = 1.20 in. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

84 Initial Abstraction, $I_a = \frac{200}{84} - 2$

Initial Abstraction, I_a = 0.38

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.15

Unit Peak Factor, q_u = 975 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 975 x 4.34/640 x 1.2

q_i = 7.93 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.025 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.20 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.434 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

$V_s/V_r = 0.683 - 1.43\,(0.025) + 1.64\,(0.025)^2 - 0.804\,(0.025)^3$

V_s/V_r = 0.648

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.281 acre-ft **

12255 cu-ft

Vault Size		
Minimum Size		
L=	89	ft
W=	55	ft
Depth=	2.5	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.5 ft.

# PIPES	pipe size		pipe lenth	
8	48	in	122	ft
		Area		
		12.57	sf	
		Volume	12255	c.f

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Channel Protection Storage Volume Computations - EX DEV. Condition
Phase 2 - SWM 4

Post-Development Drainage Area A = 4.51 AC

Time of Concentration, t_c= 0.16 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 83 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a= 1.10 in. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

83 Initial Abstraction, $I_a = \frac{200}{83} - 2$

Initial Abstraction, I_a = 0.41

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.16

Unit Peak Factor, q_u = 840 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 840 x 4.51/640 x 1.1

q_i = 6.51 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.030 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.20 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.413 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

$V_s/V_r = 0.683 - 1.43\,(0.03) + 1.64\,(0.03)^2 - 0.804\,(0.03)^3$

V_s/V_r = 0.642

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.265 acre-ft **

11553 cu-ft

Vault Size		
Minimum Size		
L=	84	ft
W=	55	ft
Depth=	2.5	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.5 ft.

# PIPES	pipe size		pipe lenth	
8	48	in	115	ft
		Area		
		12.57	sf	
	Volume		11553	c.f

P:\07740800\HYD\swm_CONCEPT\Swm_Comps_Ph2.xls

LOIEDERMAN SOLTESZ ASSOCIATES 2 Research Pl., Suite 100 Rockville, Maryland 20850 Tel 301-948-2750 Fax 301-948-9067	Date: 9/8/2009 Revised Date: ____ Project Name: Orchard Pond - Phase 1 Project No.: 7740800 Prepared By: AXQ Checked: ____	Sheet ___ of ___	

Channel Protection Storage Volume Computations - EX DEV. Condition
Phase 2 - SWM 5

Post-Development Drainage Area A = 4.51 AC

Time of Concentration, t_c = 0.10 hr. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Post-Development Curve Number, CN = 85 (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

One-Year Post-Development Runoff Depth, Q_a = 1.30 in. (FROM TR-55 RUN FOR POST-DEVELOPMENT CONDITIONS)

Initial Abstraction, $I_a = \frac{200}{CN} - 2$

85 Initial Abstraction, $I_a = \frac{200}{85} - 2$

Initial Abstraction, I_a = 0.35

One-Year Rainfall Depth, P = 2.60 in. (FROM TABLE 2-2 OF 2000 MD STORMWATER DESIGN MANUAL)

I_a/P = 0.14

Unit Peak Factor, q_u = 710 cfs/sq. mi./in. runoff (FROM FIG. D.11.1 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Inflow Discharge, $q_i = q_u \times A \times Q_a$

q_i = 710 x 4.51/640 x 1.3

q_i = 6.50 cfs

24-Hour Outflow-to-Inflow Ratio, q_o/q_i = 0.025 (FROM FIG. D.11.2 OF 2000 MD STORMWATER DESIGN MANUAL)

Post-Development Peak Outflow Discharge, $q_o = \left(q_o/q_i\right) \times q_i$

q_o = 0.16 cfs *

Post-Development Runoff Volume, $V_r = Q_a/12 \times A$

V_r = 0.489 acre-ft

Storage-to-Runoff Volume Ratio, $V_s/V_r = 0.683 - 1.43\left(q_o/q_i\right) + 1.64\left(q_o/q_i\right)^2 - 0.804\left(q_o/q_i\right)^3$

$V_s/V_r = 0.683 - 1.43\,(0.025) + 1.64\,(0.025)^2 - 0.804\,(0.025)^3$

V_s/V_r = 0.648

Post-Development Storage Volume, $V_s = (V_s/V_r) \times V_r$

V_s = 0.317 acre-ft **

13797 cu-ft

Vault Size		
Minimum Size		
L=	100	ft
W=	55	ft
Depth=	2.5	ft

Vault sized to store WQv below CPv. Actual depth to be approximately 4.5 ft.

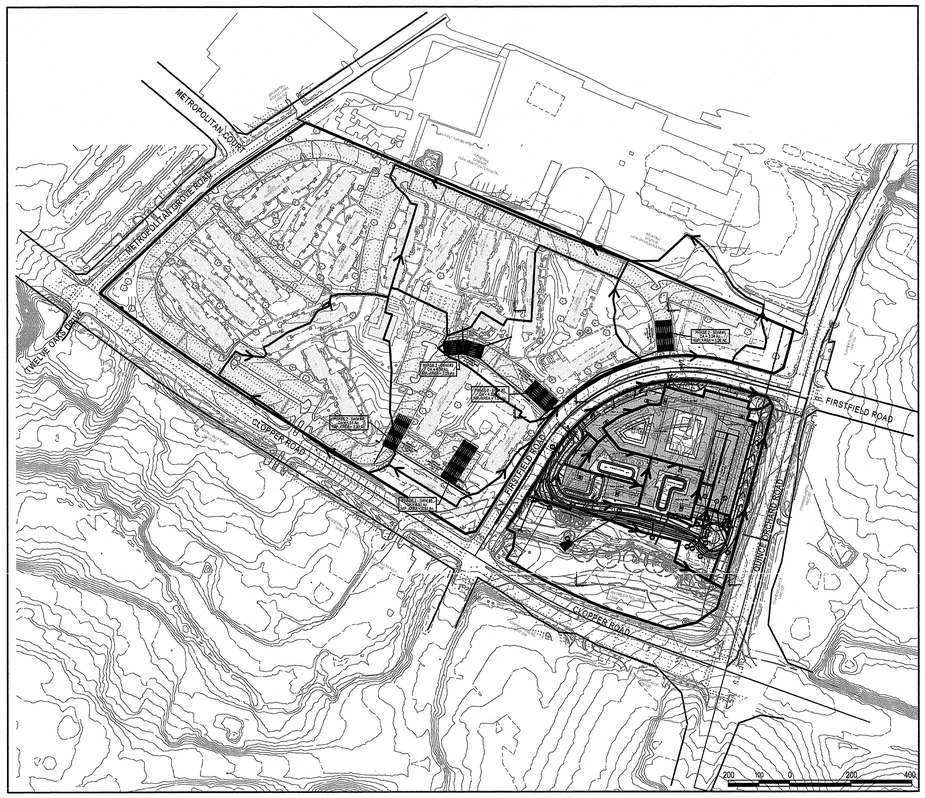
# PIPES	pipe size		pipe lenth	
8	48	in	137	ft
		Area		
		12.57	sf	
		Volume	13797	c.f

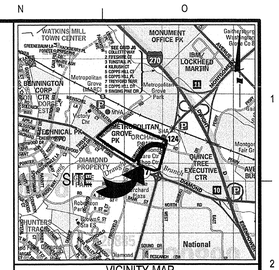
P:\07740800\HYD\swm_CONCEPT\Swm_Comps_Ph2.xls

STORMWATER MANAGEMENT CONCEPT PLAN

ORCHARD POND

PHASE 1 & 2





VICINITY MAP
SCALE: 1"=2000'

SHEET INDEX

COVER SHEET	1
SWM DRAINAGE AREA MAP	2
SWM PLAN	3
SWM PLAN	4

Joint Hearing - MCC & PC
SDP 09 001
15

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LICENSE NO. 36060 EXPIRATION DATE: 6/26/10

STATE OF MARYLAND · AMY X. QUANG · No. 36060 · PROFESSIONAL ENGINEER · 12/07/09

STORMWATER MANAGEMENT CONCEPT

PHASE 1 & PHASE 2
ORCHARD POND

L. 19371 F. 116

GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = AS SHOWN
SHEET 1 OF 4
PROJECT NO. 0774-08-00

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NO.	REVISIONS	BY	DATE
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-27-2009

DATE: OCTOBER 2009 | CAD STANDARDS VERSION: V8 - 2000
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OWNER/DEVELOPER/APPLICANT

COMPANY NAME	JEFFERSON APARTMENT GROUP
ADDRESS	8300 GREENSBORO DRIVE
ADDRESS	SUITE 400
CITY STATE	McLEAN, VA 22102
PHONE #	(703) 553 5200
CONTACT NAME	MALCOLM VAN DE RIET

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PERMITTED USE NUMBER 20811159

MAP 19 GRID A-B,B-B

TAX MAP	ZONING CATEGORY:
FT22	MXD
WSSC 200' SHEET	
244NW11	
SITE DATUM	
HORIZONTAL: NAD83	
VERTICAL: NAVD83	

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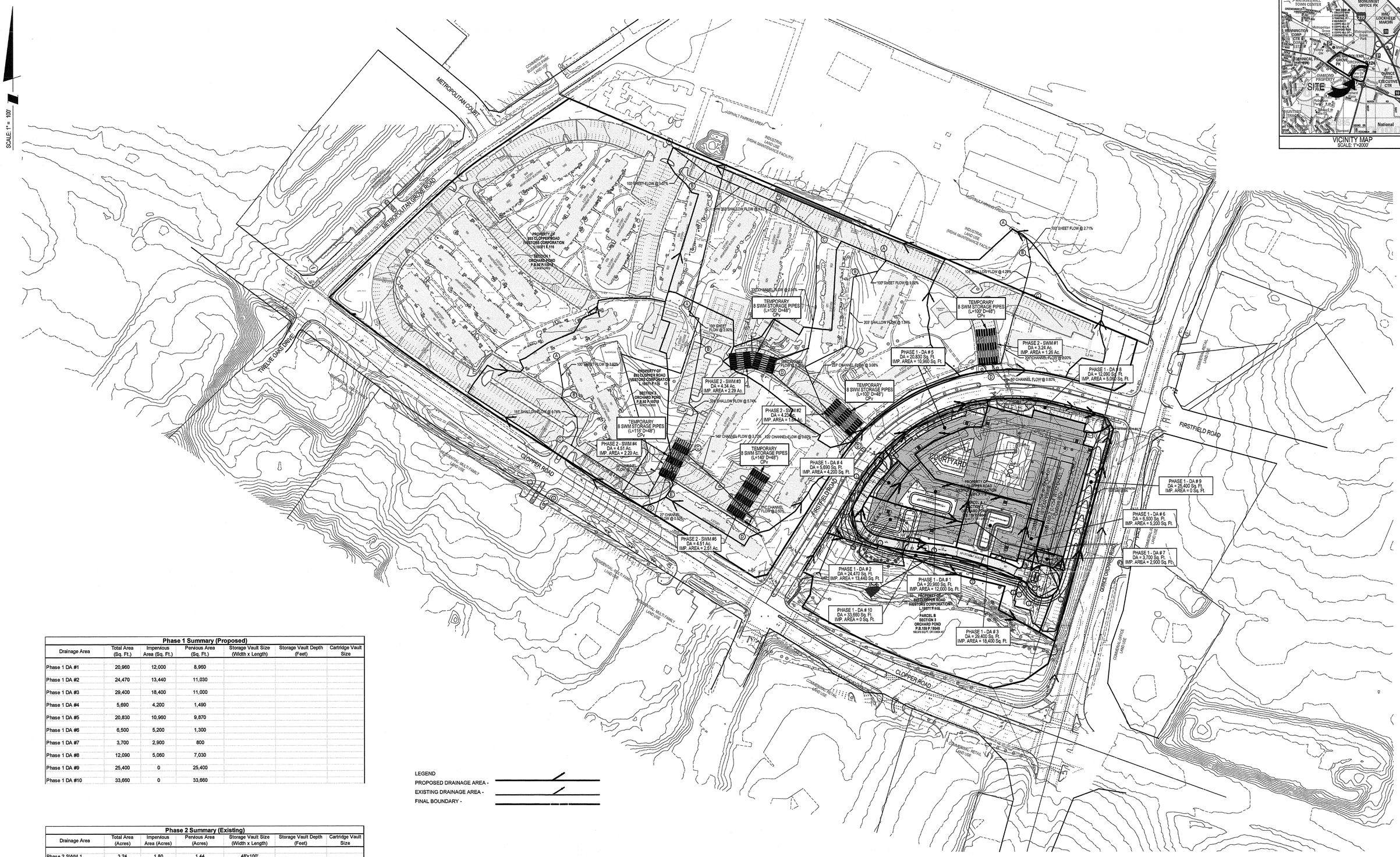

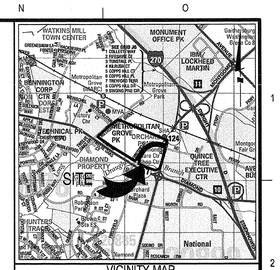

VICINITY MAP
SCALE: 1"=2000'

Phase 1 Summary (Proposed)						
Drainage Area	Total Area (Sq. Ft.)	Impervious Area (Sq. Ft.)	Pervious Area (Sq. Ft.)	Storage Vault Size (Width x Length)	Storage Vault Depth (Feet)	Cartridge Vault Size
Phase 1 DA #1	20,960	12,000	8,960			
Phase 1 DA #2	24,470	13,440	11,030			
Phase 1 DA #3	29,400	18,400	11,000			
Phase 1 DA #4	5,690	4,200	1,490			
Phase 1 DA #5	20,830	10,960	9,870			
Phase 1 DA #6	6,500	5,200	1,300			
Phase 1 DA #7	3,700	2,900	800			
Phase 1 DA #8	12,090	5,060	7,030			
Phase 1 DA #9	25,400	0	25,400			
Phase 1 DA #10	33,660	0	33,660			

Phase 2 Summary (Existing)						
Drainage Area	Total Area (Acres)	Impervious Area (Acres)	Pervious Area (Acres)	Storage Vault Size (Width x Length)	Storage Vault Depth (Feet)	Cartridge Vault Size
Phase 2 SWM 1	3.24	1.80	1.44	48'x100'		
Phase 2 SWM 2	4.23	1.64	2.59	48'x100'		
Phase 2 SWM 3	4.34	2.29	2.05	48'x120'		
Phase 2 SWM 4	4.51	2.20	2.31	48'x115'		
Phase 2 SWM 5	4.51	2.51	2.00	48'x140'		

LEGEND
PROPOSED DRAINAGE AREA -
EXISTING DRAINAGE AREA -
FINAL BOUNDARY -

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 36060 EXPIRATION DATE: 6/26/10

STATE OF MARYLAND AMY X. QUANG No. 36060 PROFESSIONAL ENGINEER 12/7/09

STORMWATER MANAGEMENT DRAINAGE AREA MAP

PHASE 1 & PHASE 2
ORCHARD POND

L. 19371 F. 116

GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 100'

SHEET 2 OF 4

PROJECT NO. 0774-08-00

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NO.	REVISIONS	BY	DATE
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-27-2009

DATE: OCTOBER 2009 CAD STANDARDS VERSION: V8 - 2000
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COMPANY NAME: JEFFERSON APARTMENT GROUP
ADDRESS: 8300 GREENSBORO DRIVE
ADDRESS: SUITE 400
CITY STATE: McLEAN, VA 22102
PHONE #: (703) 563 5200
CONTACT NAME: MALCOLM VAN DE RIET

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MAP 19 GRID A-B,B-B
TAX MAP FT22 ZONING CATEGORY: MXD
WSSC 200' SHEET 244NW11
SITE DATUM HORIZONTAL: NAD83 VERTICAL: NAVD83

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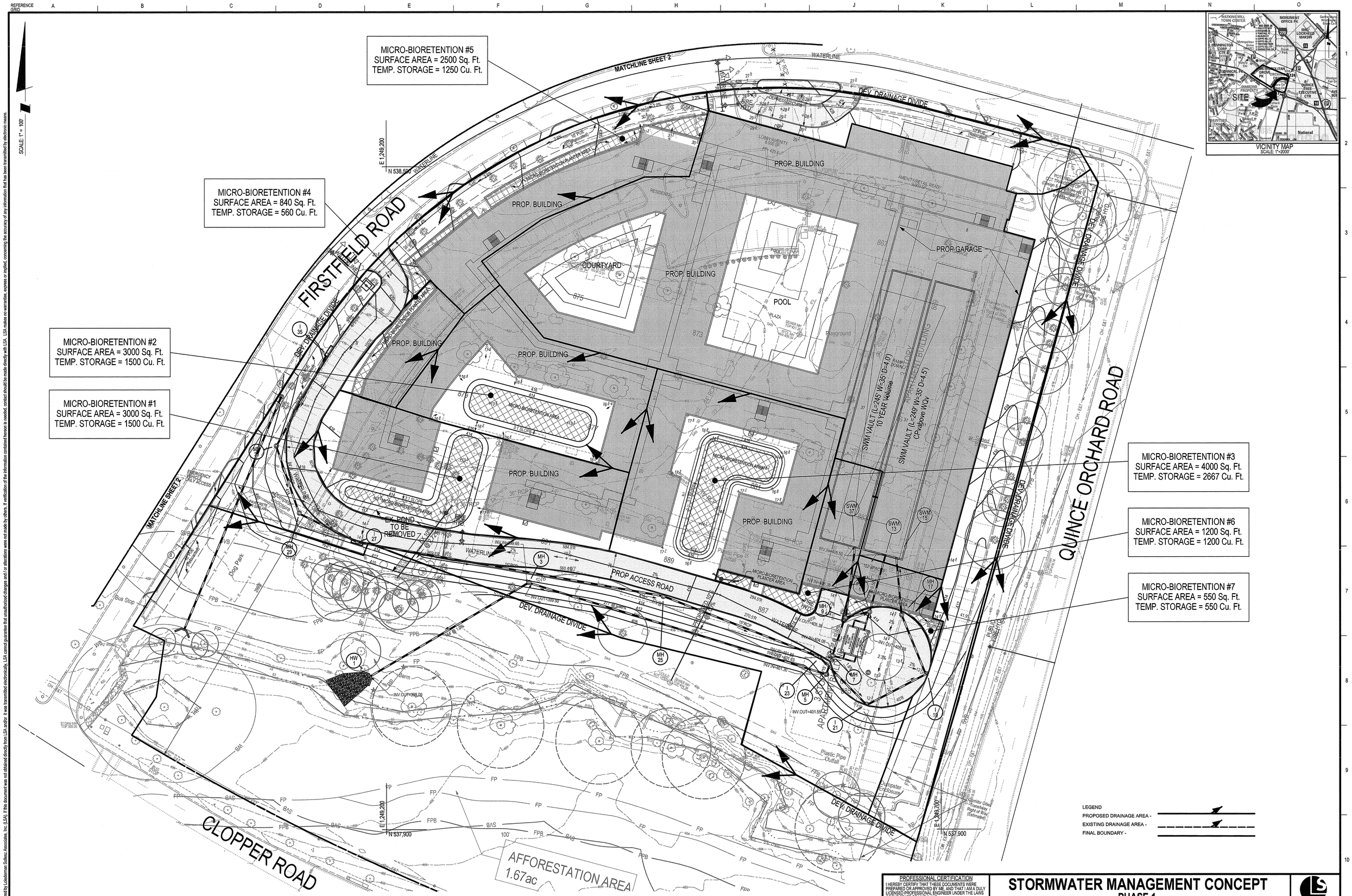

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STATE OF MARYLAND · AMY X. QUANT · No. 35060 · PROFESSIONAL ENGINEER · 12/07/09

STORMWATER MANAGEMENT CONCEPT
PHASE 1

PHASE 1 & PHASE 2
ORCHARD POND

L. 19371 F. 116

GAITHERSBURG (9th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 30'

SHEET 3 OF 4

PROJECT NO. 0774-08-00

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P&CA PLANNING AND CODE ADMINISTRATION Gaithersburg

CASH MANAGEMENT ROUTING SHEET

#56061

TYPE	SWM (Plan Review Fee)
ADDRESS	PO Box 619208 DFW Station Dallas TX 75261
BUSINESS NAME	LaSalle Investment Management,
NAME	For Orchard Pond Application (eliza)

DATE PAID November 6, 2009

☐ **Credit Card**

☑ **Check** **Check #** 2112

☐ **Cash**

PERMIT # _____ **LICENSE #** _____ **CITATION #** _____

TAXABLE

ACCOUNT TYPE		NUMBER	AMOUNT

NON-TAXABLE

ACCOUNT TYPE		NUMBER	AMOUNT
	SWM Plan Review Fee	100-449-200	$1,500.00

SUBMITTED BY: Tammy Majano

Joint Hearing - MCC & PC
SDP 09 001
16

MISCELLANEOUS PAYMENT RECPT#: 56061
CITY OF GAITHERSBURG
31 SOUTH SUMMIT AVE.
GAITHERSBURG MD 20877-2098

#56061

DATE: 11/06/09 TIME: 11:29
CLERK: pwoodruff DEPT:
0USTOMER#:

PARCEL: .

CHG: SWMGMT STORM WATER MAN 1500.00

REVENUE:
1 100 449200 1500.00
STORMWATER MGMT PLAN REVIEW FE
REF1: ORCHARD PO REF2: ND
CASH:
001 101000 CASH-BANK OF

1500.00 PAID AMT

150 PAID BY NAME
LASALLE INVES PAY METHOD
CHECK
2112

AMT TENDERED: ORCH. POND
AMT APPLIED: 1500.00
CHANGE: 1500.00

DATE:11032009 CK#:2112 TOTAL:$1,500.00 BANK:Harris - Orchard Pond HP(jp01)
PAYEE:CITY OF GAITHERSBURG(jpi0022)

Property	Account	Invoice - Date	Description	Amount
igf50001	1582300-0	0774-08-00 Feb (2nd)	Storm Water Mgmnt Concept Review	1,500.00
				1,500.00

100-449200

Gaithersburg
A CHARACTER COUNTS! CITY

CITY OF GAITHERSBURG
31 SOUTH SUMMIT AVENUE, GAITHERSBURG, MARYLAND 20877
301-258-6330

RECEIPT

FROM NAME: LaSalle Investment Management, Inc
ADDRESS:

FOR: Orchard Pond Sediment Control + Stormwater Mgt App

TOTAL AMOUNT $ 1500 00

DATE: 11/4
BY: TM

Ck# 2112

04/09

Traffic Impact Analysis

REVISED

ORCHARD POND APARTMENTS

City of Gaithersburg, Maryland

Revised December 15, 2009

Prepared for:

JPI Development Company

Joint Hearing - MCC & PC
SDP 09 001
17

INTRODUCTION AND SUMMARY OF FINDINGS

Traffic Impact Analysis

ORCHARD POND APARTMENTS
City of Gaithersburg, Maryland

Prepared for
JPI Development Company

STUDY PURPOSE

The Traffic Group, Inc. has conducted this Revised Traffic Impact Analysis to determine what impact the proposed redevelopment of the Orchard Pond Apartments will have on the adjacent road network in Gaithersburg, Maryland. This site is planned to be redeveloped with a total of 420 apartment units. This site is currently developed with 156 apartment units.

The site is located on the south side of Firstfield Road between MD 117 and MD 124. Access to the site will be from Firstfield Road.

STUDY CRITERIA/METHODOLOGY

This Traffic Impact Analysis has been prepared in accordance with the City of Gaithersburg requirements. This revised analysis was prepared to reflect the appropriate background totals which were received from the City staff.

Intersection Capacity analysis have been performed using the Critical Lane Volume (CLV) methodology. Trip generation determinations were made based on the Maryland National Capital Park and Planning Commission (M-NCPPC) guidelines and the Institute of Transportation Engineers (ITE) Trip Generation Report (8th Edition).

SCOPE OF SERVICES

The following is a list of tasks undertaken as part of this report:

- *CONDUCT FIELD INSPECTION TO COLLECT PHYSICAL INFORMATION CONCERNING THE NEARBY ROAD SYSTEM TO INCLUDE CONDITION DIAGRAMS AND PHOTO SURVEYS.*
- *CONDUCT INTERSECTION TURNING MOVEMENT COUNTS INCLUDING PEDESTRIANS AND BICYCLES FROM 6:30 TO 9:30 AM AND 4 TO 7 PM ON A WEEKDAY AT EACH OF THE STUDY AREA LOCATIONS.*
- *OBTAIN INFORMATION FROM THE CITY OF GAITHERSBURG RELATIVE TO OTHER APPROVED DEVELOPMENTS PLANNED IN THE VICINITY OF THE SITE.*

- *CONDUCT TRIP GENERATION AND TRIP DISTRIBUTION ANALYSIS FOR THE APPROVED NEARBY DEVELOPMENTS.*

- *CONDUCT TRIP GENERATION AND TRIP DISTRIBUTION ANALYSIS FOR THE PROPOSED DEVELOPMENT OF THE ORCHARD POND APARTMENTS.*

- *CONDUCT INTERSECTION CAPACITY ANALYSIS TO DETERMINE EXISTING AND PROJECTED LEVELS OF SERVICE AT THE STUDY AREA INTERSECTIONS.*

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The results of the analysis indicate that all of the study area intersections are currently operating below the City's Congestion Standard of 1450 CLV.

Based on the adjusted background development totals and the projected traffic to be generated by the Orchard Pond site, all of the study are intersections will continue to operate within the congestion standard of 1,450 CLV established by the city of Gaithersburg.

The data and methodology used to undertake this study is detailed in the sections that follow.

EXISTING TRAFFIC CONDITIONS

SITE INFORMATION

The subject property is located on the south side of Firstfield Road between MD 117 and MD 124 as shown on Exhibit 1. This property is currently developed with 156 apartment units with access to Firstfield Road at two (2) locations.

STUDY AREA

Based on correspondence with the City staff, the following intersections were identified to be included in this traffic impact analysis:

- MD 124 and Firstfield Road
- MD 117 and Orchard Pond Access
- Firstfield Road and South Orchard Pond Access
- Firstfield Road and North Orchard Pond Access
- MD 117 and West Watkins Mill Road/Pheasant Run Drive
- MD 117 and Firstfield Road
- MD 117 and MD 124
- MD 117 and Bureau Drive
- MD 117 and Metropolitan Grove/Twelve Oaks Drive

MD 117 is a four-lane east/west divided roadway with a posted speed limit of 35 MPH in the vicinity of the site. East of Firstfield Road, MD 117 is a six-lane roadway.

Firstfield Road is a four-lane divided roadway in the vicinity of the subject site with a posted speed limit of 25 MPH. The intersections of MD 117 and Firstfield Road and MD 124 and Firstfield Road are signalized.

Exhibit 2 has been prepared to show the existing lane use and traffic control at each of the study area intersections. Condition diagrams and photo surveys for each of the locations is contained in Appendix A.

TRAFFIC VOLUMES

The Traffic Group conducted intersection turning movement counts, pedestrian counts, and bicycle counts from 6:30 to 9:30 AM and 4 to 7 PM at each of the study area intersections on a weekday when school was in session. The total vehicles observed during these counts are show on the summary sheets contained in Appendix A. The existing peak hour volumes are shown on Exhibit 3.

The pedestrian counts were also summarized and are contained in Appendix A. Pedestrian activity at the study intersections was not heavy but generally busier during the evening peak period. Sidewalks exist along both sides of MD 117. Sidewalks also exist along Firstfield Road.

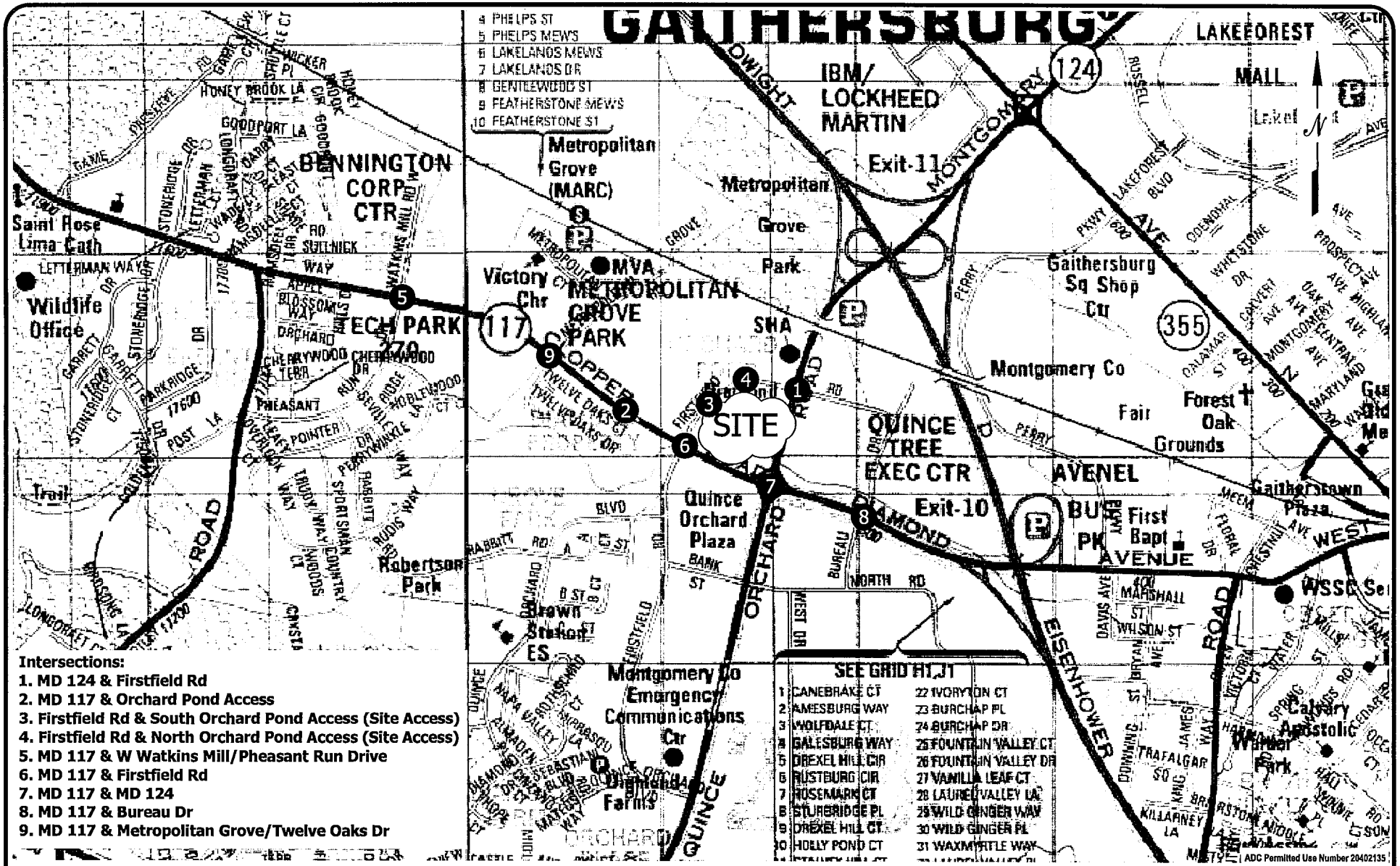
Transit is available along both Firstfield Road and MD 117. No specific bike facilities exist in the area.

Pedestrian indications and crosswalks exist at all of the signalized study intersections. Pedestrian timing was determined at intersections using a stop watch and the distance across the intersection was established with a measuring wheel. Pedestrian timing is shown on Exhibit 12.

ANALYSIS OF EXISTING TRAFFIC CONDITIONS

Intersection Capacity analysis were conducted for each of the study area locations and the results are shown on Exhibit 11. Copies of the capacity worksheets are contained in Appendix B.

The results of our analysis indicate that all of the study intersections are currently operating below the congestion standard during both the morning and evening peak periods.



Intersections:

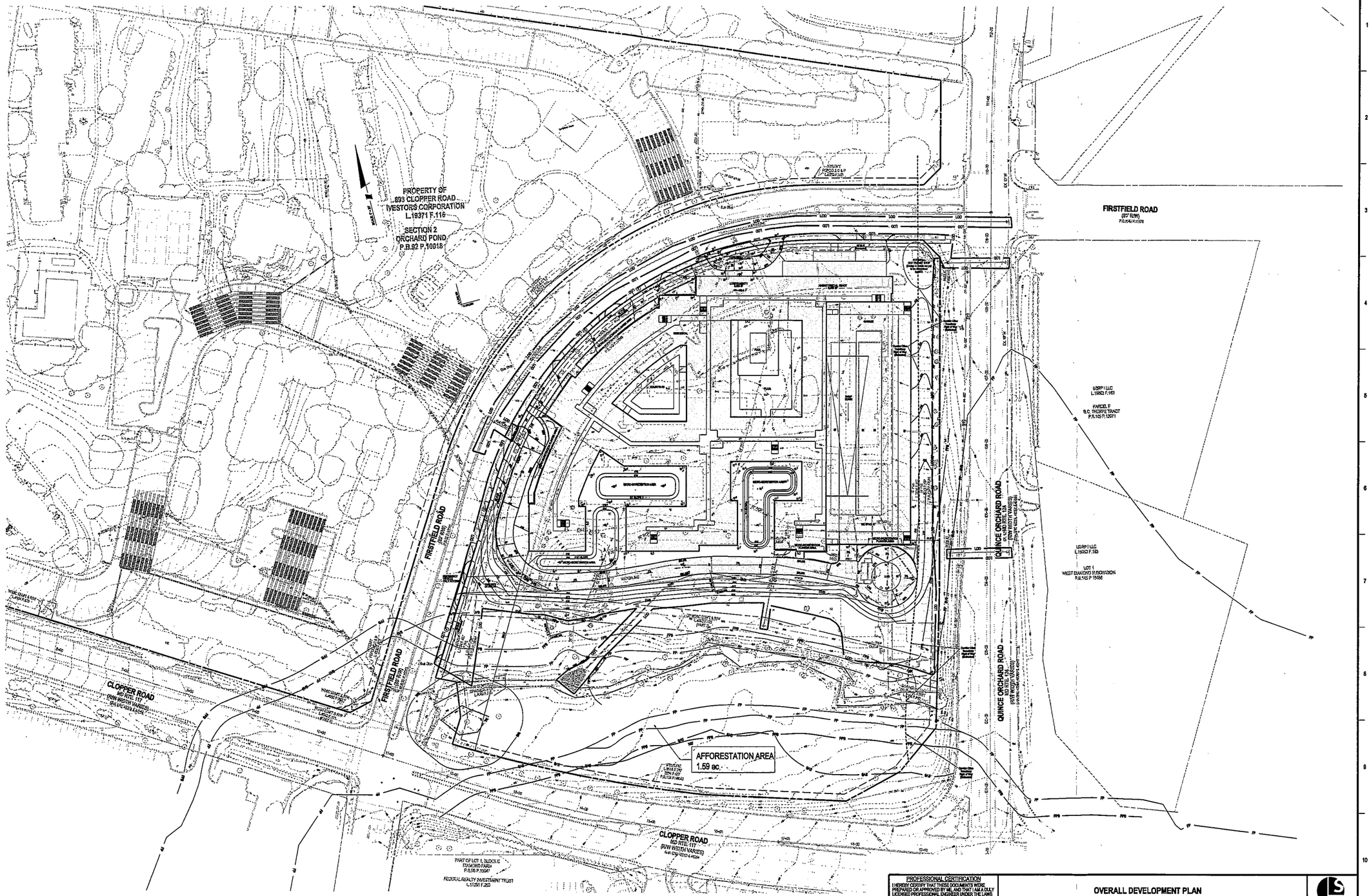
1. MD 124 & Firstfield Rd
2. MD 117 & Orchard Pond Access
3. Firstfield Rd & South Orchard Pond Access (Site Access)
4. Firstfield Rd & North Orchard Pond Access (Site Access)
5. MD 117 & W Watkins Mill/Pheasant Run Drive
6. MD 117 & Firstfield Rd
7. MD 117 & MD 124
8. MD 117 & Bureau Dr
9. MD 117 & Metropolitan Grove/Twelve Oaks Dr

The Traffic Group®

Study Intersection

EXHIBIT 1
SITE LOCATION MAP
(GRID SPACING: 2000 FT)

..., 080911\dec09\sitel.dwg-loc_st, f12/02/09



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2.	REVISED PER CITY COMMENTS PROVIDED NOVEMBER 12, 2009	TDP	12-04-2009
1.	SUBMISSION TO CITY OF GAITHERSBURG	TDP	10-23-2009

DATE: FEBRUARY, 2009 | CAD STANDARDS VERSION: V6 - 2006
DESIGNED: SJN | TECHNICIAN: SJN | CHECKED: CSS

MISS UTILITY NOTE

OWNER/DEVELOPER/APPLICANT

COMPANY NAME JEFFERSON APARTMENT GROUP
ADDRESS 8300 GREENSBORO DRIVE
ADDRESS SUITE 400
CITY STATE McLEAN, VA 22102
PHONE # (703) 663 8200
CONTACT NAME MALCOLM VAN DE REET

COPYRIGHT ADC THE MAP PEOPLE
PERMITTED USE NUMBER 20011109
MAP 19 GRID A-B,B-B

TAX MAP	ZONING CATEGORY:
FT22	MXD

WSSC 200' SHEET
244NW11

SITE DATUM:
HORIZONTAL: NAD83
VERTICAL: NAVD83

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. EXPIRATION DATE:

OVERALL DEVELOPMENT PLAN

PHASE 1
ORCHARD POND
SECTION 3
PARCELS A & B

GAITHERSBURG (6th) ELECTION DISTRICT, MONTGOMERY COUNTY, MARYLAND

1" = 50'
SHEET 1 OF 1
PROJECT NO. 0774-09-00

P:\0774\0900\Civil\Con\25DP_Overall.sht Scale=50.0000 ft / in. User=vanoss PLT dv=PDF_Grey_NO.pltPenSt=TEXT_SUB.TBL 12/11/2009 1:20:30 PM

The original of the drawing document was prepared by Loiederman Soltesz Associates, Inc. (LSA). If this document was not obtained directly from LSA and/or it was transmitted electronically, LSA cannot guarantee that unauthorized changes and / or alterations were not made by others. Verification of the information contained herein is invalid, contact should be made directly with LSA. LSA makes no warranties, express or implied, concerning the accuracy of any information that has been transmitted by electronic means.

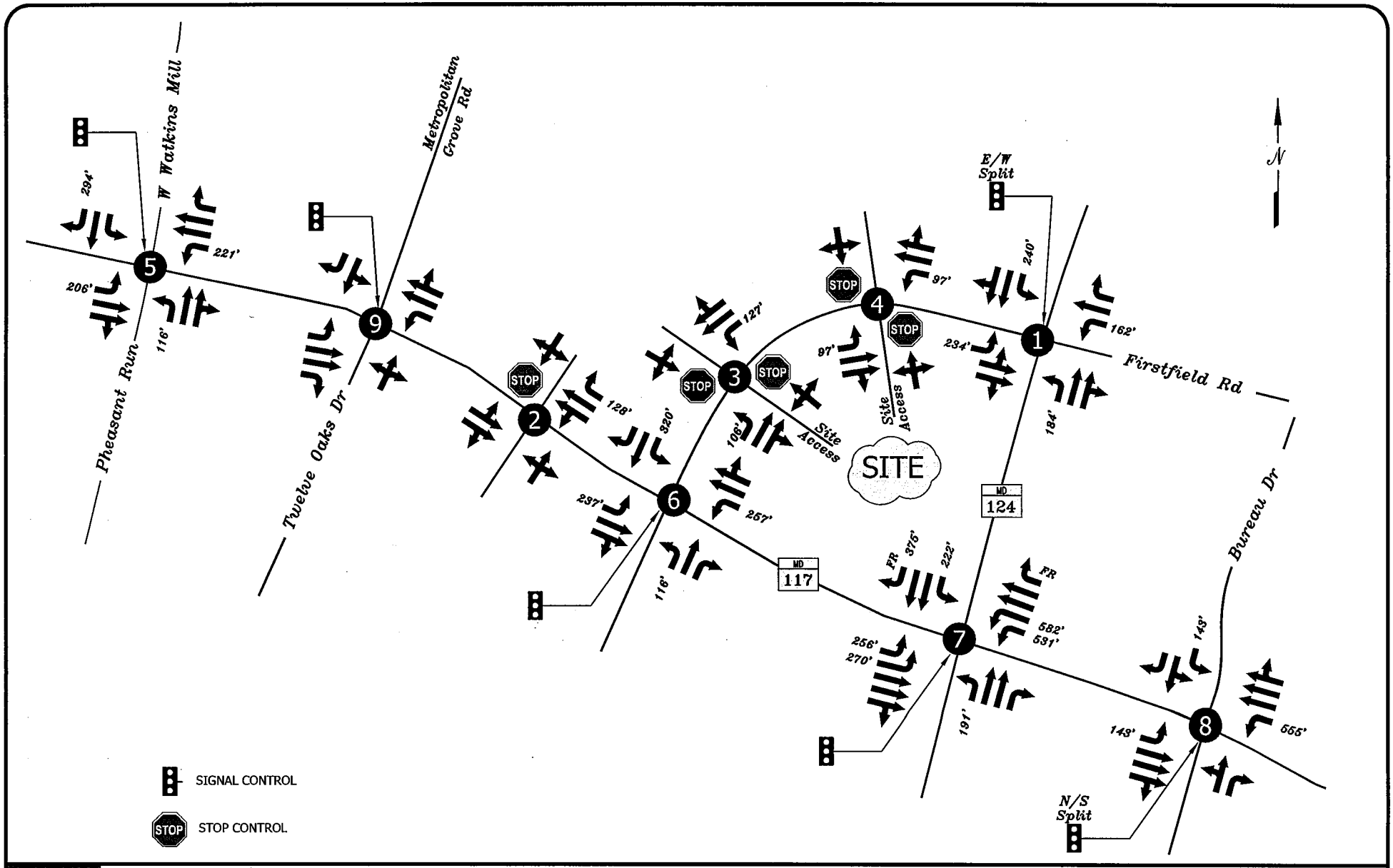

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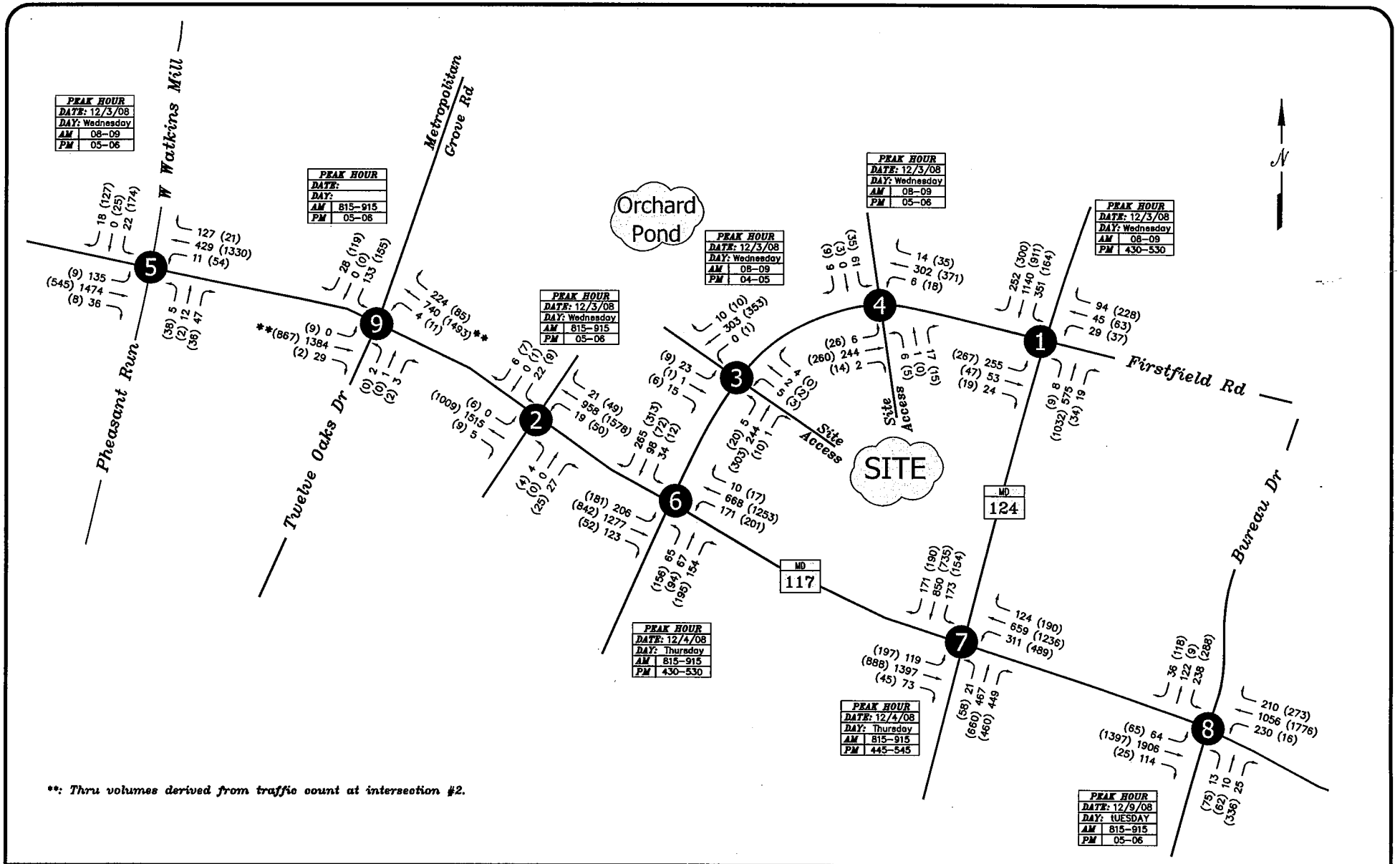
EXHIBIT 2
EXISTING LANE USE

rh, 080911\dec09\sitel.dwg-lu-ex, f12/02/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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EXHIBIT 3
2008 EXISTING PEAK HOUR
TRAFFIC VOLUMES

rh, 080911\dec09\sitel.dwg-exist, f12/02/09

BACKGROUND TRAFFIC CONDITIONS

DESIGN YEAR

This project is planned to be developed within three (3) years and therefore as stated in the M-NCPPC guidelines, regional traffic growth is not included in this report.

BACKGROUND TRAFFIC

Based on the revised information obtained from the City, four projects were identified to be included in background development. They are as follows:

- Watkins Mill Town Center - 94 single family units, 342 townhouse/condo units
- Casey East Phase 1 - Phase I
- Aree Building - 96,300 sq ft office space
- Bank at Bank Street - 3,714 sq ft drive-in bank

The location of each of the above developments is shown on Exhibit 4. We then consulted the trip generation tables established by the Maryland National Capital Park and Planning Commission and ITE to determine the number of trips projected to be generated by these developments as shown on Exhibit 5.

The peak hour trips shown on Exhibit 5 were then distributed and assigned to the nearby road system as shown on Exhibit C-1 through C-5 contained in Appendix C. The combined peak hour trips are shown on Exhibit 6. Combining the trips to be generated by the other developments, with the existing peak hour volumes, results in the background peak hour volumes shown on Exhibit 7.

There are several major road projects planned in the vicinity of the subject site. These projects are presently shown in the Maryland State Highway Administration's Consolidated Transportation Program (CTP) under the Secondary Development and Evaluation Program, however, there is presently no construction funds listed for any of these projects. Contained in Appendix A are copies of the Line Items from the CTP.

ANALYSIS OF BACKGROUND TRAFFIC CONDITIONS

Intersection Capacity analysis were conducted for each of the study area intersections and the results are shown on Exhibit 11. Copies of the capacity worksheets are contained in Appendix B.

The results of the analysis indicate that all of the study area intersections are projected to operate within the congestion standard of 1450 CLV.

TRIP GENERATION FOR BACKGROUND DEVELOPMENTS

		MORNING PEAK HOUR			EVENING PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
1. Watkins Mill Town Center Phase I - without interchange							
94	units, Single Family Detached	21	62	83	63	35	98
342	units, Townhouse /Condos	30	146	176	133	66	199
	Net off-site trips	***51***	***208***	***259***	***196***	***101***	***297***
2. Casey East - Phase I [1/]							
224	units, Multi-Family Residential Trips	17	81	98	78	38	116
	Internal Trips	-5	-24	-29	-27	-20	-47
	Net off-site trips	***12***	***57***	***69***	***51***	***18***	***69***
64,000	sq.ft. Office & Recreational Community Trips	187	47	234	40	129	169
	Internal Trips	-8	-5	-13	-11	-11	-22
	Net off-site trips	***179***	***42***	***221***	***29***	***118***	***147***
87,700	Retail/Restaurants Trips	250	212	462	411	354	765
	Internal Trips	-53	-32	-85	-69	-70	-139
	Pass-by trips	-75	-65	-140	-158	-135	-293
	Net off-site trips	***122***	***115***	***237***	***184***	***149***	***333***
	Total off-site trips for Phase 1 - without interchange	***313***	***214***	***527***	***264***	***285***	***549***
3. Aree Building							
96,300	sq.ft. General Office	136	20	156	27	132	159
4. Bank at Bank Street							
3,714	sq.ft. Drive-in Bank	26	20	46	48	48	96
	Pass-by trips (PM-47%)				-23	-23	-46
	Net off-site trips	**26**	**20**	**46**	**25**	**25**	**50**

Note: 1. Trips information taken from TIS report for Casey East & Modified by the data from County staff. Details refer to Appendex C.

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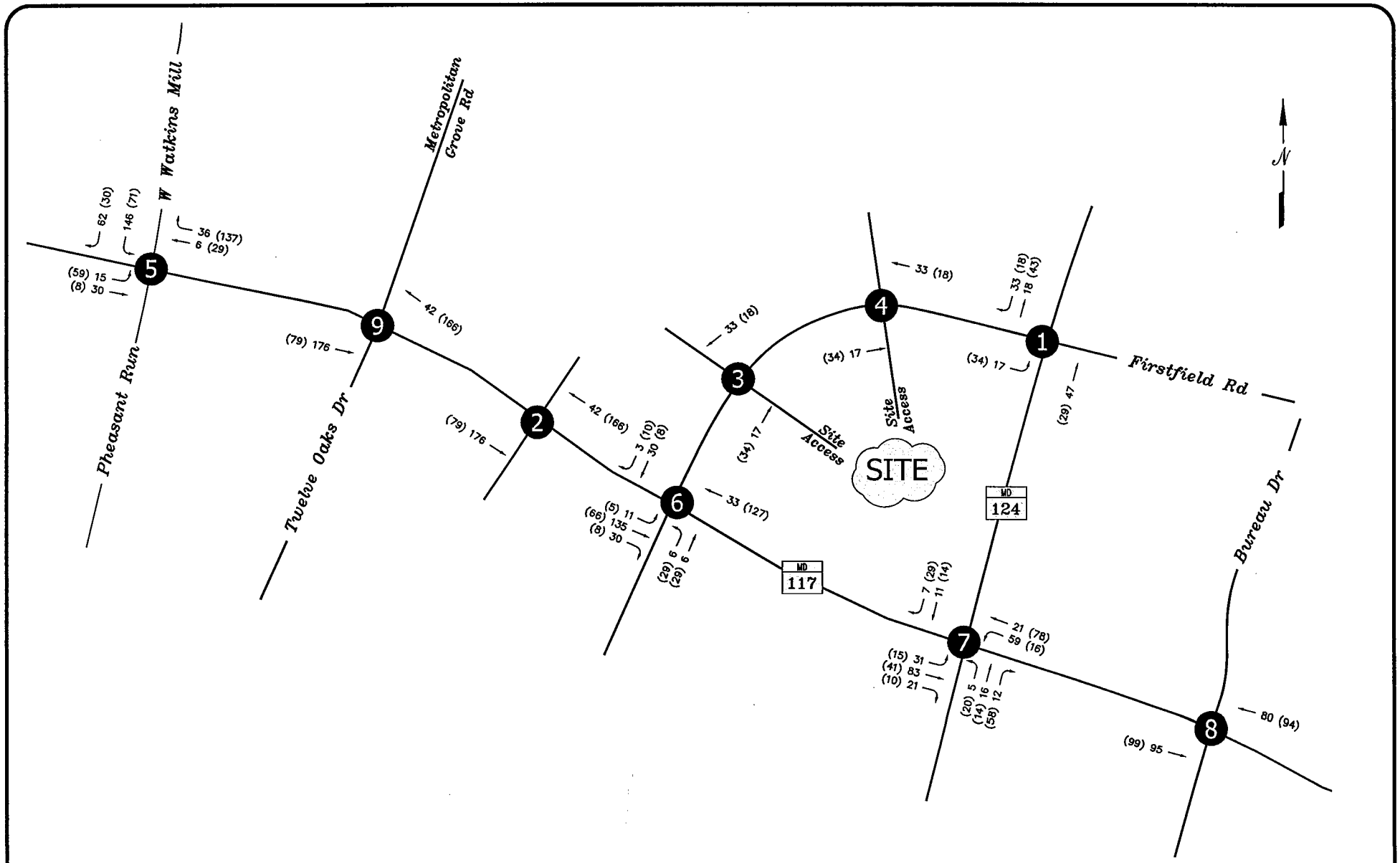
EXHIBIT 5 (CONT'D)

TRIP GENERATION RATES AND TOTALS

FOR BACKGROUND DEVELOPMENTS

rh, 080911\dec09\tgen.xls-back, f12/15/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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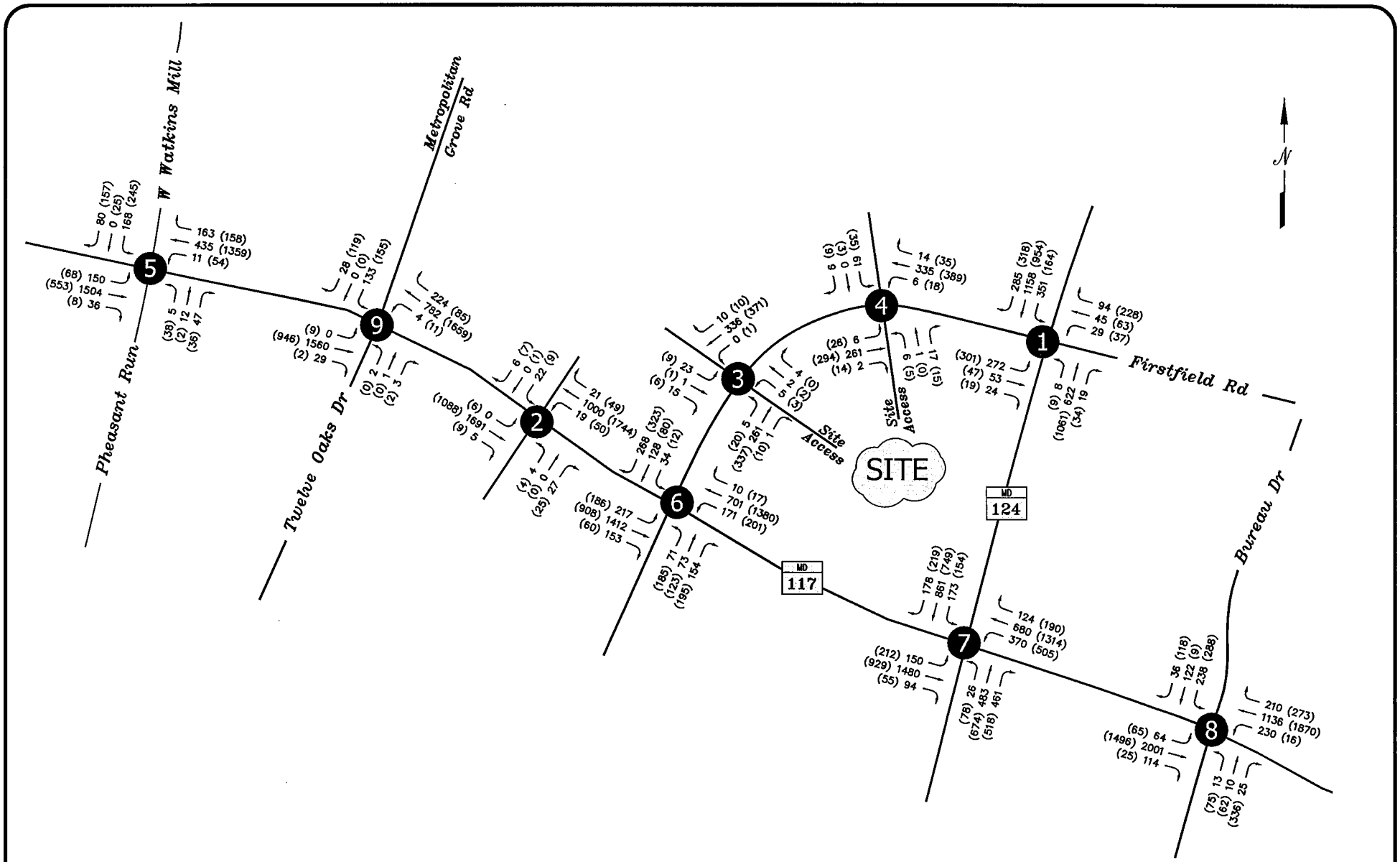
EXHIBIT 6
COMBINED TRIPS GENERATED
BY APPROVED DEVELOPMENTS

rh, 080911\dec09\new.dwg-comb, f12/15/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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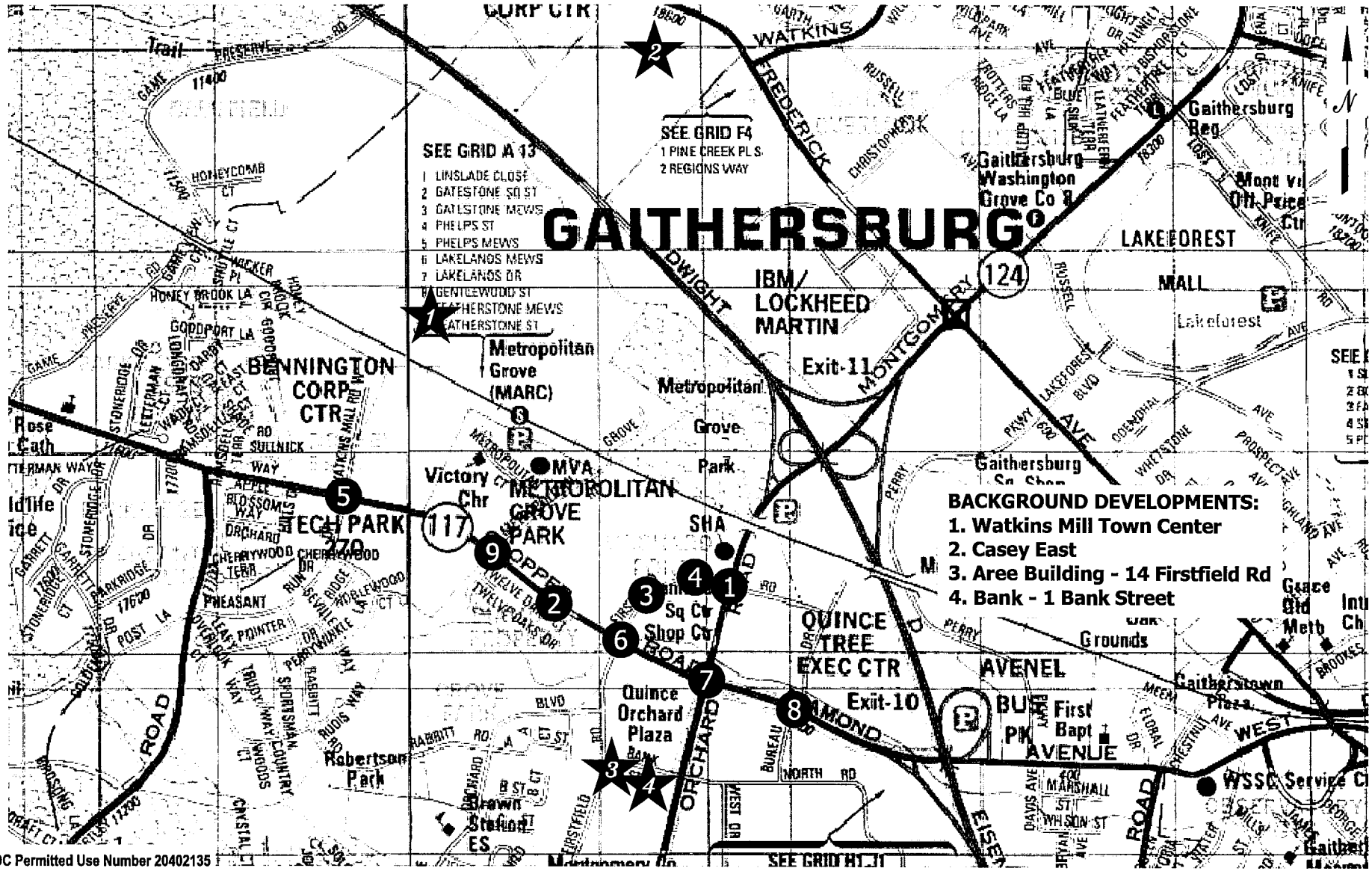
EXHIBIT 7
BACKGROUND PEAK
HOUR TRAFFIC VOLUMES

rh, 080911\dec09\new.dwg-back, f12/15/09



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Study Intersection

★ Approved Development

EXHIBIT 4
LOCATION MAP FOR
BACKGROUND DEVELOPMENTS

rh, 080911\dec09\sitel.dwg-loc_dev, f12/02/09

TRIP GENERATION RATES

LAND USE	FORMULA	Enter	Exit
General Office (ksf, Montgomery County Rate >25,000 sf GFA)			
	Morning Trips = 1.70 x (ksf) - 8	87%	13%
	Evening Trips = 1.44 x (ksf) + 20	17%	83%
General Retail (ksf, Montgomery County Rate, from 50,000 sf up to 200,000 sf)			
	Morning Trips = 25% of Evening Trips	52%	48%
	Evening Trips = 7.43 x (ksf) + 247	52%	48%
Single Family Detached (Units, Montgomery Country Rate > 75 units)			
	Morning Trips = 0.62 x units +25	25%	75%
	Evening Trips = 0.82 x units + 21	64%	36%
Townhouse (Units, Montgomery Country Rate > 100 units)			
	Morning Trips = 0.53 x units - 5	17%	83%
	Evening Trips = 0.48 x units + 35	67%	33%
Garden and Mid-Rise Apartments (Units, Montgomery Country Rate > 75 units)			
	Morning Trips = 0.4 x units + 3	20%	80%
	Evening Trips = 0.47 x units + 1	66%	34%
High-Rise Apartments (Units, Montgomery Country Rate < 100 units)			
	Morning Trips = 0.4 x units	25%	75%
	Evening Trips = 0.46 x units	61%	39%
Drive-in Bank (Drive-in Lanes, ITE-912)			
	Morning Trips = 12.35 x ksf	56%	44%
	Evening Trips = 25.82 x ksf	50%	50%
Hotel Rooms (ITE-310)			
	Morning Trips = 0.56 x Rooms	61%	39%
	Evening Trips = 0.59 x Rooms	53%	47%

Note: Trip generation rate obtained from Local Area Transportation Review and Policy Area Mobility Review Guidelines and ITE Trip Generation Manual 8th Edition, 2008.

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EXHIBIT 5

TRIP GENERATION RATES AND TOTALS

FOR BACKGROUND DEVELOPMENTS

rh, 080911\lgen.xls-back rate, f12/22/08

TOTAL TRAFFIC CONDITIONS

SITE INFORMATION

The subject site is located on the south side of Firstfield Road between MD 117 and MD 124 in Gaithersburg, Maryland. This property is presently developed with 156 apartment units. The proposed redevelopment of this property will result in 420 apartment units. Access to the site will remain along Firstfield Road, however, these access points are currently being evaluated. For the purposes of this analysis we have assumed one (1) access point for vehicular traffic in order to reflect a "worst" case analysis.

TRIP GENERATION/DISTRIBUTION

In order to determine the amount of traffic to be generated by the redevelopment of this site, we have prepared Exhibit 8 which shows the traffic projected to be generated by the proposed 420 apartments using the M-NCPPC Trip Generation Tables. The traffic currently being generated by the 156 existing apartment units was then subtracted to establish the number of additional trips to be generated by the proposed plan. The existing traffic which presently utilizes two access points were reassigned to the single access point previously discussed.

The additional trips to be generated by the redevelopment of the Orchard Pond Apartments were then distributed and assigned to the roadway network as shown on Exhibit 9.

The additional peak hour trips projected to be generated by the site were then combined with the background peak hour volumes resulting in the total peak hour volumes shown on Exhibit 10.

ANALYSIS OF TOTAL TRAFFIC CONDITIONS

Intersection Capacity analysis were again conducted for each of the study area intersections and the results are shown on Exhibit 11. Copies of the capacity worksheets are contained in Appendix B.

The results of the analysis indicate that with the redevelopment of the Orchard Pond Apartments, all of the study area intersections will operate within the City's Congestion Standard of 1450 CLV.

TRIP GENERATION RATES

LAND USE	FORMULA	DISTRIBUTION
Garden and Mid-Rise Apartments > 75 Units (Units, Montgomery County Rate)		
	Morning Trips = 0.40 x Units + 3	20/80
	Evening Trips = 0.47 x Units + 1	66/34

TRIP GENERATION TOTALS

	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Orchard Pond Apartments						
Existing Traffic Generation (based on traffic count)						
156 Units, Garden and Mid-Rise Apartments	10	35	45	47	25	72
Proposed (based on Montgomery County Rate)						
420 Units, Garden and Mid-Rise Apartments	34	137	171	131	67	198
Net New Additional Trips	***24***	***102***	***126***	***84***	***42***	***126***

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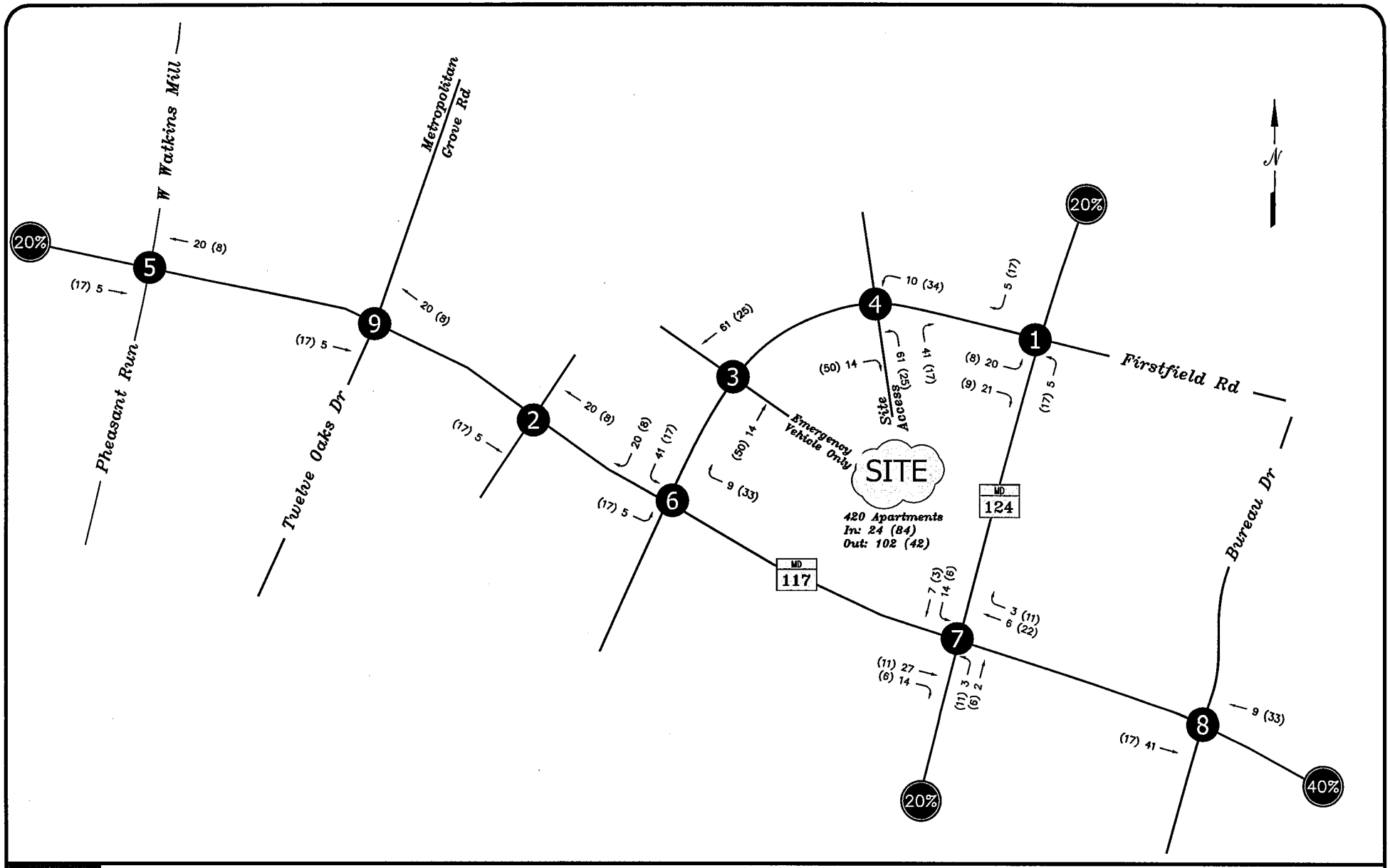
EXHIBIT 8
TRIP GENERATION
FOR SUBJECT SITE

rh, 080911\tgen.xls-site, f01/14/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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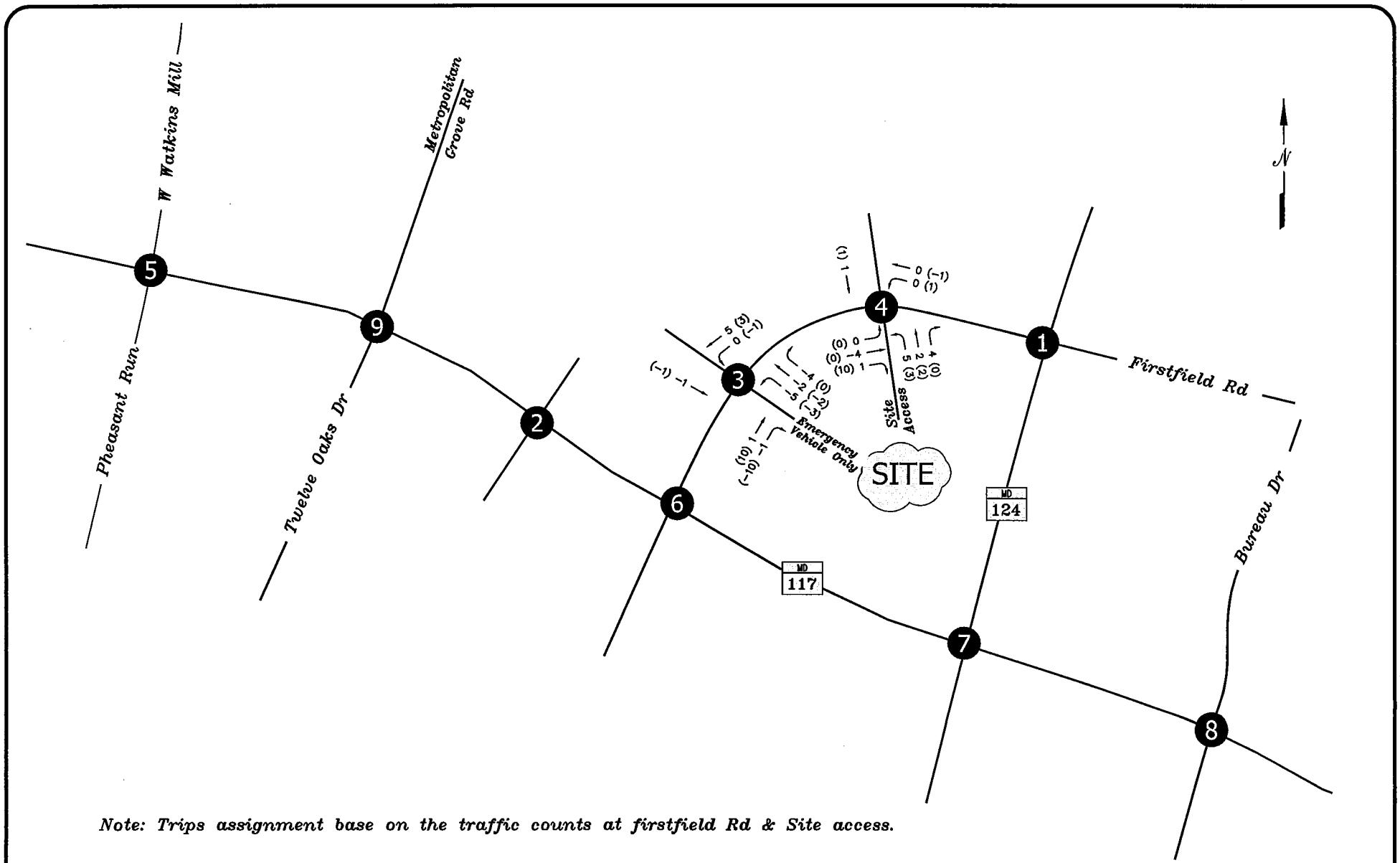
EXHIBIT 9
TRIP ASSIGNMENT
FOR SUBJECT SITE

rh, 080911\dec09\new.dwg-stn, f12/15/09



Note: Trips assignment base on the traffic counts at firstfield Rd & Site access.

00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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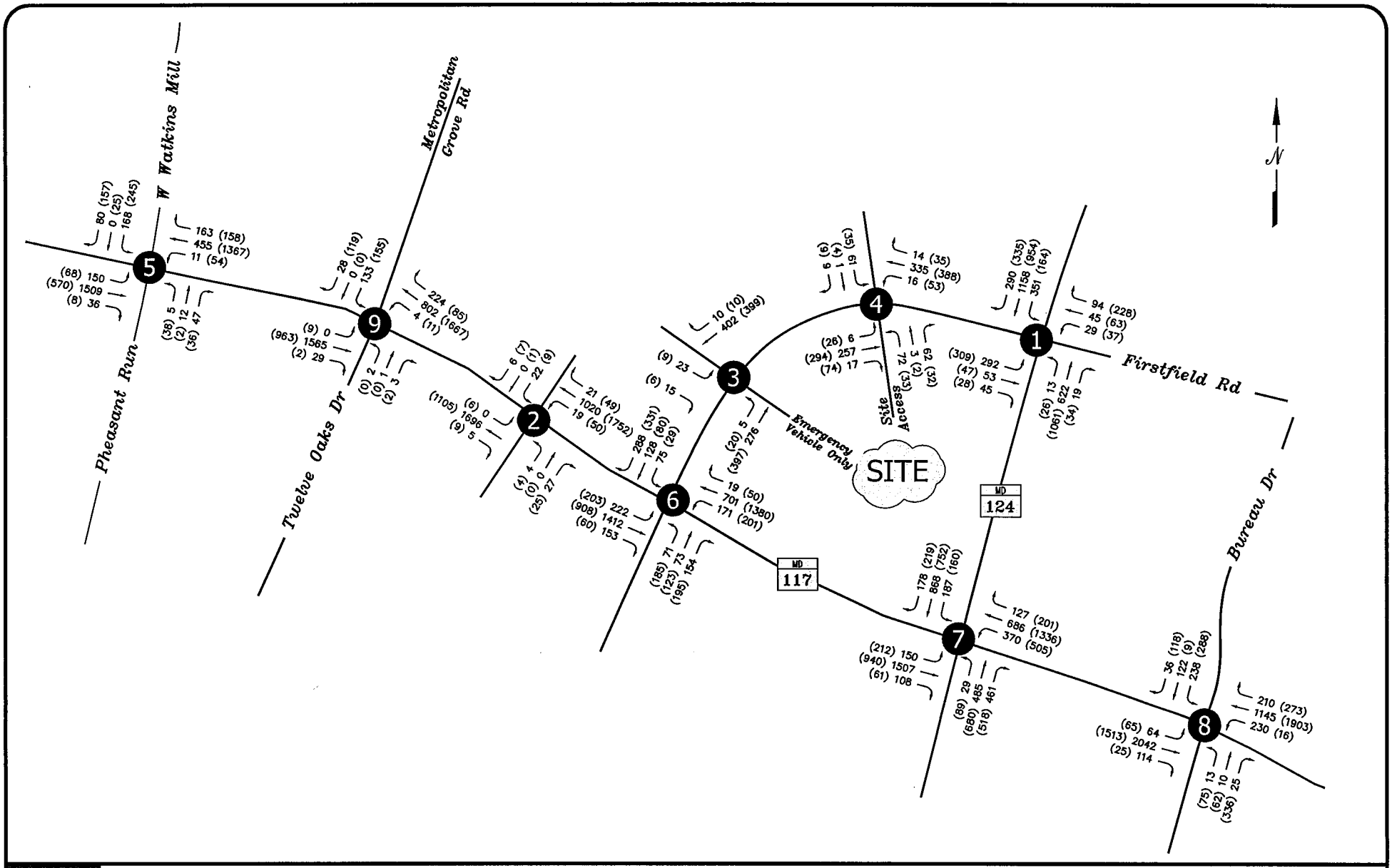
EXHIBIT 9A
EXISTING TRIP TO BE REASSIGNED
DU TO NEW ASSESS POINT

rh, 080911\dec09\new.dwg-stp, f12/15/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

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EXHIBIT 10
TOTAL PEAK HOUR
TRAFFIC VOLUMES

rh, 080911\dec09\new.dwg-tot, f12/15/09

RESULTS, RECOMMENDATIONS, and CONCLUSIONS

STUDY PURPOSE

The Traffic Group, Inc. has conducted this Revised Traffic Impact Analysis to determine what impact the proposed redevelopment of the Orchard Pond Apartments will have on the adjacent road network in Gaithersburg, Maryland. This site is planned to be redeveloped with a total of 420 apartment units. This site is currently developed with 156 apartment units.

The site is located on the south side of Firstfield Road between MD 117 and MD 124. Access to the site will be from Firstfield Road.

STUDY CRITERIA/METHODOLOGY

This Traffic Impact Analysis has been prepared in accordance with the City of Gaithersburg requirements. This revised analysis was prepared to reflect the appropriate background totals which were received from the City staff.

Intersection Capacity analysis have been performed using the Critical Lane Volume (CLV) methodology. Trip generation determinations were made based on the Maryland National Capital Park and Planning Commission (M-NCPPC) guidelines and the Institute of Transportation Engineers (ITE) Trip Generation Report (8th Edition).

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The results of the analysis indicate that all of the study area intersections are currently operating below the City's Congestion Standard of 1450 CLV.

Based on the adjusted background development totals and the projected traffic to be generated by the Orchard Pond site, all of the study are intersections will continue to operate within the congestion standard of 1,450 CLV established by the city of Gaithersburg.

CLV

	Existing Traffic	Background Traffic	Total Traffic
Morning Peak Hour Traffic	**CLV**	**CLV**	**CLV**
1. MD 124 & Firstfield Rd	926	962	980
2. MD 117 & Apt. Access	878	971	974
3. Firstfield Rd & S. Orchard Pond Access (EMV Only)	215	232	261
4. Firstfield Rd & N. Orchard Pond Access	258	276	389
5. MD 117 & Watkins Mill/Pheasant Run Dr.	864	1026	1029
6. MD 117 & Firstfield Rd	1076	1199	1199
7. MD 117 & MD 124	1181	1260	1283
8. MD 117 & Bureau Dr.	1191	1227	1242
9. MD 117 & Metropolitan/Twelve Oaks Dr	877	970	972
Evening Peak Hour Traffic	**CLV**	**CLV**	**CLV**
1. MD 124 & Firstfield Rd	935	968	972
2. MD 117 & Apt. Access	907	995	999
3. Firstfield Rd & S. Orchard Pond Access (EMV Only)	231	241	252
4. Firstfield Rd & N. Orchard Pond Access	296	306	352
5. MD 117 & Watkins Mill/Pheasant Run Dr.	908	1053	1058
6. MD 117 & Firstfield Rd	1142	1248	1274
7. MD 117 & MD 124	1263	1319	1340
8. MD 117 & Bureau Dr.	1300	1335	1347
9. MD 117 & Metropolitan/Twelve Oaks Dr	1002	1090	1095

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EXHIBIT 11
RESULTS OF INTERSECTION
CAPACITY ANALYSES (CLV)

rh, 080911\dec09\los.xls-newresult, f12/15/09

Intersection	Street Width (ft)	Available Time (seconds) 1/	Desired Time (seconds) 2/
1. MD 124 & Firstfield Rd			
South Leg of MD 124	61	16	20
East Leg of Firstfield Rd	67	18	22
West Leg of Firstfield Rd	67	18	22
5. MD 117 & Watkins Mill/Pheasant Run Dr.			
North Leg of Watkins Mill Rd	65	19	22
South Leg of Pheasant Run Dr.	48	19	16
East Leg of MD 117	72	20	24
West Leg of MD 117	60	20	20
6. MD 117 & Firstfield Rd			
North Leg of Firstfield Rd	68	16	23
South Leg of Firstfield Rd	59	16	20
East Leg of MD 117	80	18	27
West Leg of MD 117	62	18	21
7. MD 117 & MD 124			
North Leg of MD 124	84	46	28
South Leg of MD 124	65	17	22
West Leg of MD 117	97	60	32
8. MD 117 & Bureau Dr.			
North Leg of Bureau Dr.	69	20	23
South Leg of Bureau Dr. (52' Median)	100	20	33
West Leg of MD 117	93	30	31
9. MD 117 & Metropolitan/Twelve Oaks Dr			
North Leg of Metropolitan Grove Rd	35	14	12
South Leg of Twleve Oaks Dr.	27	14	9
West Leg of MD 117	73	20	24

Note: 1. Start of flashing "Do Not Walk" to end of Signal Phase.

2. 3 ft/sec walking spped assumed.

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EXHIBIT 12
RESULTS OF INTERSECTION
PEDESTRIAN SIGNAL TIMING

rh, 080911\los.xls-ped sig time, f12/23/08

APPENDIX A

Intersection Turning Movement Counts

Condition Diagrams and Photos

Glenn Cook

From: Malcolm VanDeRiet [mvanderiet@jagllc.com]
Sent: Tuesday, November 24, 2009 11:32 AM
To: Glenn Cook; Joe Caloggero, P.E., PTOE, PTP
Cc: Jody Kline
Subject: RE: Orchard Pond TIS

I wanted to confirm that you received by email below regarding the City of Gaithersburg requested revisions to the TIS for Orchard Pond?

From: Malcolm VanDeRiet
Sent: Friday, November 20, 2009 1:18 PM
To: Glenn Cook
Cc: Jody Kline
Subject: FW: Orchard Pond TIS

Please review and revise the TIS for Orchard Pond based on the comments below from the City of Gaithersburg.

Please confirm you received this email. I need to turn this around to the city quickly.

Thanks,

Malcolm

From: Eliza Voigt [mailto:EVoigt@gaithersburgmd.gov]
Sent: Thursday, November 19, 2009 3:57 PM
To: Malcolm VanDeRiet
Cc: stawes@lsassociates.net; Jody Kline; Lauren Pruss; Ollie Mumpower
Subject: FW: Orchard Pond TIS

Malcolm,

Thank you for meeting with us today. In terms of providing accurate information to your traffic engineer, I looked at the background development totals in the TIS and they have the correct numbers for the Watkins Mill project, but they don't really show what they are using for Casey East/Spectrum project. These are the current numbers for Casey East/Spectrum Phase 1:

Police/Office	28,000 sq ft
4 class A restaurants	30,400 sq. ft.
1 bank/mixed use office	6,000 sq. ft.
5 mixed use retail	57,300 sq. ft.
1 Senior ctr.	30,000 sq. ft.
Multi-family residential	224 units

As Ollie mentioned in his email below, these need to be forwarded to your traffic engineer and incorporated into the TIS at the 100%, not 50% level, of the site traffic for these two developments.

I will be forwarding a timetable soon showing the public hearing process and when the revised materials are

needed.

Eliza

Eliza Voigt
Planner
City of Gaithersburg | 31 South Summit Avenue | Gaithersburg, MD 20877
(P) 301-258-6330 (F) 301-258-6336

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The opinions expressed in this message are not necessarily those of the City of Gaithersburg Staff, Mayor or Council

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From: Ollie Mumpower
Sent: Thursday, November 19, 2009 9:24 AM
To: Eliza Voigt
Subject: Orchard Pond TIS

I have reviews the Orchard Pond TIS and offer the following comments:

- For the background development of Watkins Mill Town Center and Casey East (Spectrum) need to confirm with Planning the development totals shown in the study reflects the latest numbers
- Than the study needs to include 100%, not 50%, of the site traffic for these two developments

Once the study is updated with this information we can do a more in-depth review.

Ollie K. Mumpower
Engineering Services Director
Department of Public Works
800 Rabbitt Road Gaithersburg, Maryland 20878-1600
301-258-6370 Ext. 106
301-258-6375 FAX
301-258-6430 TTY
omumpower@gaithersburgmd.gov
www.gaithersburgmd.gov

Glenn Cook

From: Ollie Mumpower [OMumpower@gaithersburgmd.gov]
Sent: Tuesday, December 16, 2008 2:36 PM
To: Glenn Cook
Cc: Trudy Schwarz
Subject: RE: Orchard Pond Apartments

sorry for the delay in getting back to you.

I would add the MD 117 and Metropolitan Grove intersection in your analysis.

I do not think you need to count Bureau Drive at Firstfield Road

By copy of this e-mail I am asking that Trudy Schwarz from our Planning Department provide you with any nearby background information.

Also a reminder to hold off until the second week in January to conduct new counts.

For the rest just follow our adopted TIS.

From: Glenn Cook [mailto:GCook@trafficgroup.com]
Sent: Monday, December 08, 2008 3:51 PM
To: Ollie Mumpower
Subject: FW: Orchard Pond Apartments
Importance: High

Hi Ollie!

Any luck reviewing this Scope?

From: Glenn Cook
Sent: Tuesday, November 18, 2008 3:05 PM
To: 'omumpower@gaithersburgmd.gov'
Cc: Wes Guckert; Susan Brown; 'malcolm.vanderiet@jpi.com'
Subject: Orchard Pond Apartments

Hi Ollie!

I hope all is well! We have been asked by JPI to perform a traffic study for the rezoning of a portion of the Orchard Ponds Apartments in Gaithersburg. This property is located in the northwest quadrant of the MD 124 and MD 117 intersection. It is the triangular piece of land which is bordered by Firstfield Road. I have attached an aerial shot of the property. This property currently contains 140 occupied apartment units and with the rezoning would consist of approximately 412 apartment units. Using M-NCPPC trip rates the proposed project would generate 168 trips during the morning peak hour and 195 trips during the evening peak hour.

Based on the location of the property we anticipate having to study six (6) intersections and will be counting four (4) others which serve as access points for the entire Orchard Pond Apartment complex. The access points will be counted to determine the number of trips currently being generated by the subject property and the current distribution of traffic from the site which can be used for the future trip assignments. The intersections are as follows:

1. Metropolitan Grove & existing access to Orchard Pond

2. MD 117 & existing access to Orchard Pond
3. Firstfield Road & south access to Orchard Pond
4. Firstfield Road & north access to Orchard Pond
5. MD 117 & W. Watkins Mill Road/Pheasant Run Drive
6. MD 117 & Firstfield Road
7. MD 117 & MD 124
8. MD 117 & Bureau Drive
9. Bureau Drive & Firstfield Road
10. MD 124 & Firstfield Road

I have also attached a map which shows the location of each of these intersections. Please review the above list and let us know if this study area is appropriate.

It would be greatly appreciated if you can provide a list of background developments that need to be included, or point us in the right direction.

Glenn Cook
Vice President

The Traffic Group, Inc.®
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Baltimore, Maryland 21236
410.931.6600 / 800.583.8411
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gcook@trafficgroup.com
www.trafficgroup.com

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Richard Huang

From: Glenn Cook
Sent: Friday, December 19, 2008 9:00 AM
To: Richard Huang
Subject: FW: Orchard Pond Apartments TIS

Here is information from the City for Background.

-----Original Message-----
From: Eliza Voigt [mailto:EVoigt@gaithersburgmd.gov]
Sent: Friday, December 19, 2008 8:51 AM
To: Glenn Cook
Cc: Ollie Mumpower; Trudy Schwarz
Subject: Orchard Pond Apartments TIS

Gary:

In terms of "pipeline" developments in the near vicinity of the Orchard Pond Apartments for the TIS:

A. Watkins Mill Town Center - property is located north of CSX Railroad tracks and Metropolitan Grove Road and south of Interstate 270 Phase I: Watkins Mill Road Extended includes: 472 attached and detached residential units; 252 condominium units; 106,639 square feet of mixed use; 493,450 square feet office; 210 room hotel and related 38,000 square feet meeting room/dining facilities; 65 penthouse condos. At this time final site plan approval has been granted for 436 dwelling units for The Woodlands at Watkins Mill Town Center. Phase 2 at the time the Watkins Mill Interchange is completed will include: 14,400 sf (bank/service), 80,600 sf (retail/restaurant), 360,000 office, and 184 room hotel. Phase 3 at the time of the Corridor Cities Transitway (CCT): 276 condo units; 20,300 sf mixed use; 83,200 sf office.

B. Casey East - 40.10 acres of land located northwest of the intersection of Maryland Route 355 (North Frederick Avenue) and Watkins Mill Road, the proposed plan includes a mix of uses, including 303 residential units, and office, restaurant, retail, service station, and public uses.

C. AREE Building = 14 Firstfield Road - 96,300 office building approved.

D. 1 Bank Street - 3,714 square foot bank building with drive up windows approved.

Please let me know if you have any questions -

Eliza Voigt
Planner
City of Gaithersburg
31 South Summit Avenue
Gaithersburg, MD 20877-2098
301-258-6330
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VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: Orchard Pond Access / Apt Access
Location: Montgomery Co., MD

Counted by: AN
Date: December 3, 2008
Weather: Fair, Cold
Entered by: RB

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Orchard Pond Access					TRAFFIC FROM SOUTH on: Apt Access					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	0	0	6	0	6	12	0	1	0	13	0	105	5	0	110	1	282	0	0	283	412
45-00	0	0	8	0	8	7	0	1	0	8	2	123	5	0	130	1	353	2	0	356	502
07:0-15	1	0	4	0	5	10	0	1	0	11	4	135	2	0	141	1	322	0	0	323	480
15-30	0	0	3	0	3	10	0	4	0	14	3	158	2	0	163	2	386	1	1	390	570
30-45	1	0	3	0	4	7	0	2	0	9	3	168	3	0	174	4	371	1	0	376	563
45-00	0	0	6	0	6	13	0	1	0	14	3	193	4	0	200	4	388	0	0	392	612
08:0-15	2	0	9	0	11	4	0	1	0	5	4	189	3	0	196	3	384	0	0	387	599
15-30	1	0	6	0	7	7	0	0	0	7	5	229	5	0	239	1	397	0	0	398	651
30-45	1	0	6	0	7	7	0	1	0	8	7	239	3	0	249	2	367	0	0	369	633
45-00	3	0	4	0	7	12	0	3	0	15	4	235	6	0	245	0	391	0	0	391	658
09:0-15	1	0	6	0	7	1	0	0	0	1	5	255	5	0	265	2	360	0	0	362	635
15-30	3	0	4	0	7	5	0	1	0	6	4	264	8	0	276	5	327	1	0	333	622
3 Hr Totals	13	0	65	0	78	95	0	16	0	111	44	2293	51	0	2388	26	4328	5	1	4360	5680
1 Hr Totals																					
630-730	1	0	21	0	22	39	0	7	0	46	9	521	14	0	544	5	1343	3	1	1352	1964
645-745	2	0	18	0	20	34	0	8	0	42	12	584	12	0	608	8	1432	4	1	1445	2115
07-08	2	0	16	0	18	40	0	8	0	48	13	654	11	0	678	11	1467	2	1	1481	2225
715-815	3	0	21	0	24	34	0	8	0	42	13	708	12	0	733	13	1529	2	1	1545	2344
730-830	4	0	24	0	28	31	0	4	0	35	15	779	15	0	809	12	1540	1	0	1553	2425
745-845	4	0	27	0	31	31	0	3	0	34	19	850	15	0	884	10	1536	0	0	1546	2495
08-09	7	0	25	0	32	30	0	5	0	35	20	892	17	0	929	6	1539	0	0	1545	2541
815-915	6	0	22	0	28	27	0	4	0	31	21	958	19	0	998	5	1515	0	0	1520	2577
830-930	8	0	20	0	28	25	0	5	0	30	20	993	22	0	1035	9	1445	1	0	1455	2548
PEAK HOUR																					
815-915	6	0	22	0	28	27	0	4	0	31	21	958	19	0	998	5	1515	0	0	1520	2577
PM																					
04:0-15	1	0	3	0	4	6	0	0	0	6	10	313	8	0	331	3	221	0	0	224	565
15-30	1	0	8	0	9	6	0	1	0	7	10	346	10	1	367	0	224	1	2	227	610
30-45	1	0	4	0	5	5	0	1	0	6	6	350	19	0	375	4	251	1	2	258	644
45-00	0	0	1	0	1	7	0	3	0	10	10	334	13	0	357	3	272	0	0	275	643
05:0-15	3	0	2	0	5	6	0	0	0	6	13	370	10	0	393	1	271	1	3	276	680
15-30	1	0	0	0	1	6	0	0	0	6	17	404	13	1	435	2	282	0	0	284	726
30-45	1	0	3	0	4	8	0	2	0	10	8	416	12	0	436	4	220	1	0	225	675
45-00	2	1	4	0	7	5	0	2	0	7	11	388	14	0	413	2	236	1	0	239	666
06:0-15	1	0	3	0	4	6	0	0	0	6	8	303	6	0	317	4	239	0	0	243	570
15-30	4	0	0	0	4	6	0	0	0	6	8	338	18	0	364	1	213	0	0	214	588
30-45	1	0	2	0	3	4	0	1	0	5	12	325	8	0	345	3	188	0	0	191	544
45-00	1	0	2	0	3	7	0	1	0	8	12	311	10	0	333	3	177	1	0	181	525
3 Hr Totals	17	1	32	0	50	72	0	11	0	83	125	4198	141	2	4466	30	2794	6	7	2837	7436
1 Hr Totals																					
04-05	3	0	16	0	19	24	0	5	0	29	36	1343	50	1	1430	10	968	2	4	984	2462
415-515	5	0	15	0	20	24	0	5	0	29	39	1400	52	1	1492	8	1018	3	7	1036	2577
430-530	5	0	7	0	12	24	0	4	0	28	46	1458	55	1	1560	10	1076	2	5	1093	2693
445-545	5	0	6	0	11	27	0	5	0	32	48	1524	48	1	1621	10	1045	2	3	1060	2724
05-06	7	1	9	0	17	25	0	4	0	29	49	1578	49	1	1677	9	1009	3	3	1024	2747
515-615	5	1	10	0	16	25	0	4	0	29	44	1511	45	1	1601	12	977	2	0	991	2637
530-630	8	1	10	0	19	25	0	4	0	29	35	1445	50	0	1530	11	908	2	0	921	2499
545-645	8	1	9	0	18	21	0	3	0	24	39	1354	46	0	1439	10	876	1	0	887	2368
06-07	7	0	7	0	14	23	0	2	0	25	40	1277	42	0	1359	11	817	1	0	829	2227
PEAK HOUR																					
05-06	7	1	9	0	17	25	0	4	0	29	49	1578	49	1	1677	9	1009	3	3	1024	2747

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: Orchard Pond Access / Apt Access
Location: Montgomery Co., MD

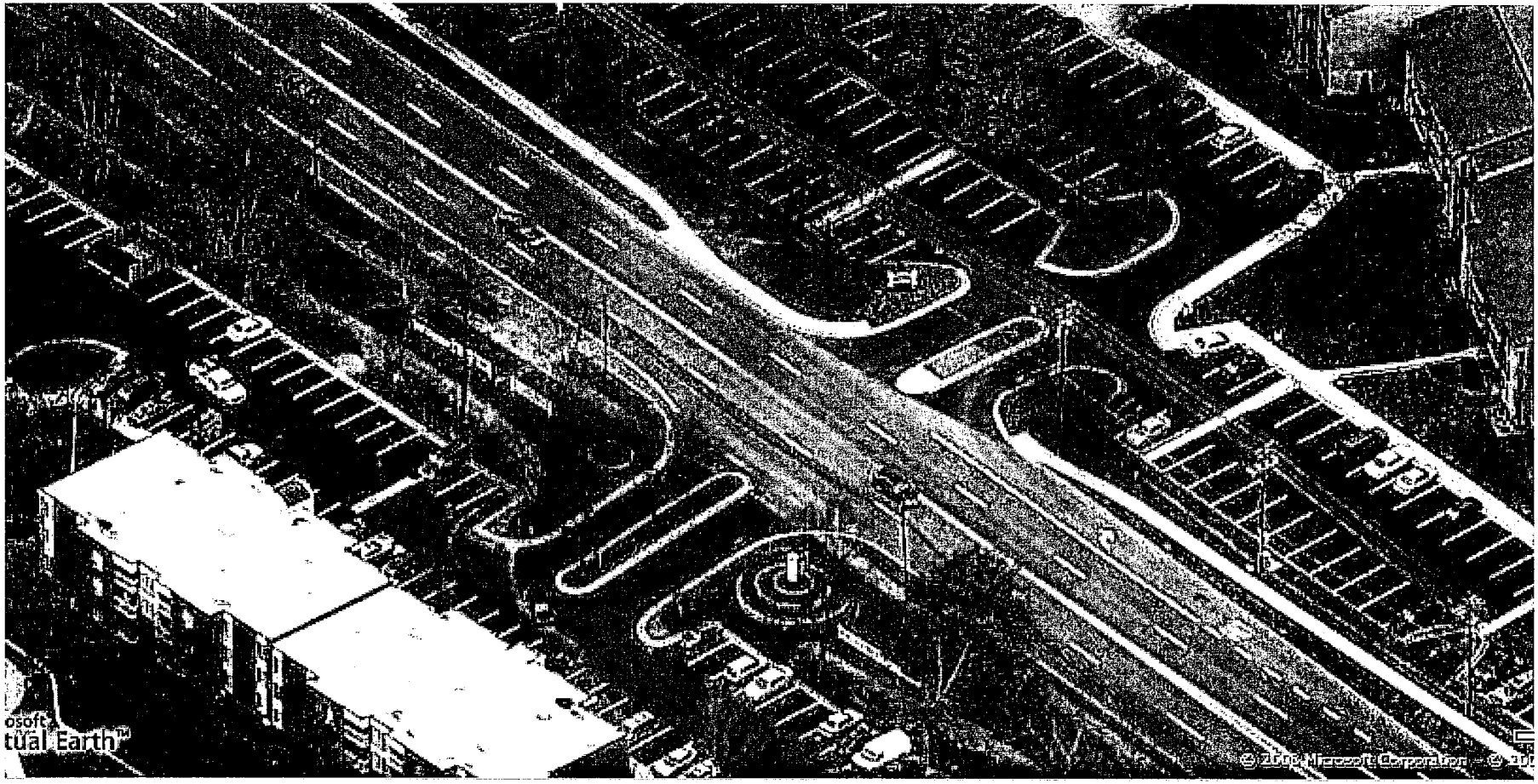
Counted by: AN
Date: December 3, 2008
Weather: Fair, Cold
Entered by: RB

Day: Wednesday

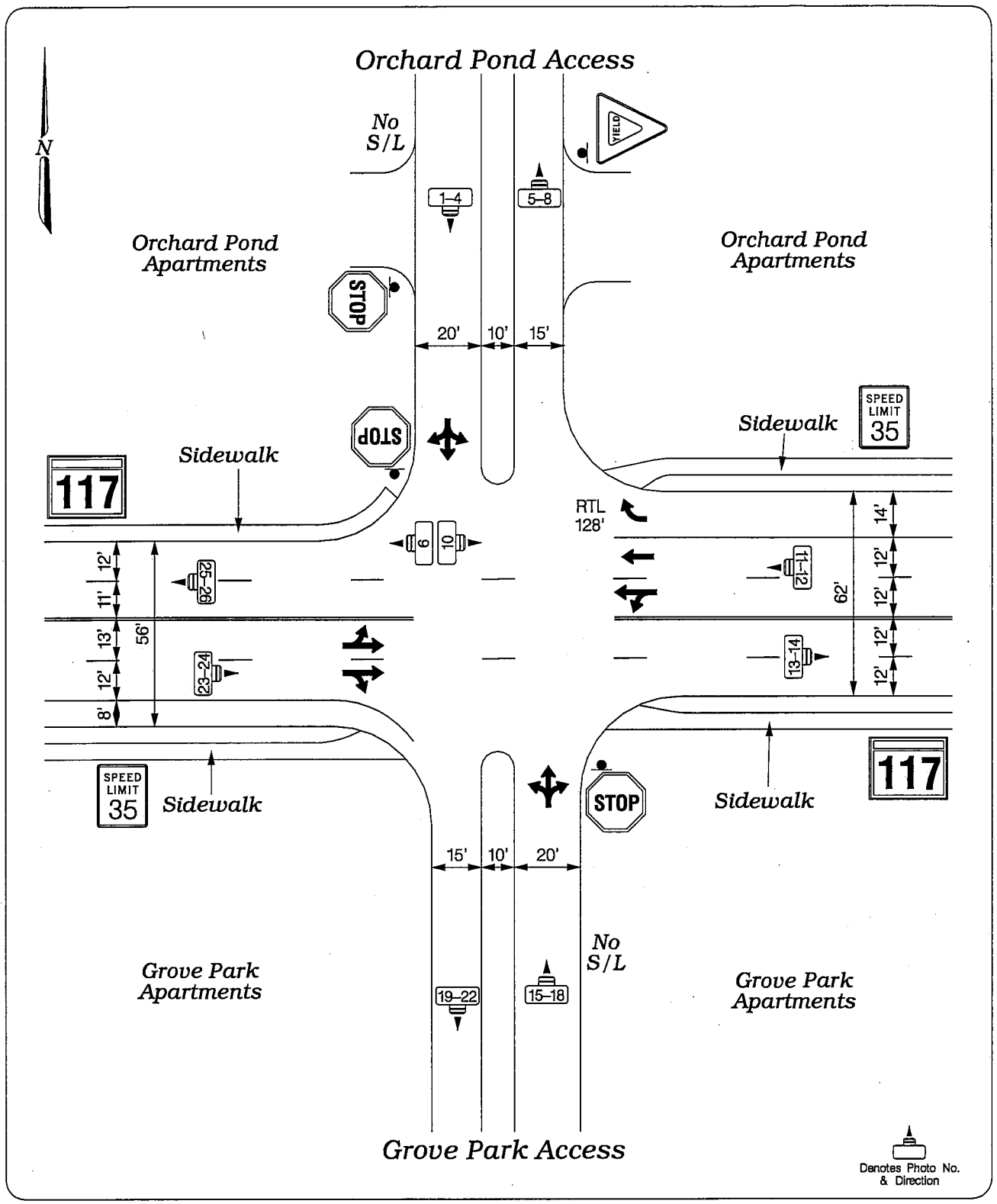
The Traffic Group

TIME	Orchard Pond Access NORTH LEG				Apt Access SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	2	0	0	0	0	0	0	0
45-00	3	0	0	0	0	0	0	0
07:0-15	1	0	0	0	1	0	0	0
15-30	2	0	0	0	0	0	0	0
30-45	3	1	0	0	1	0	0	0
45-00	2	0	0	0	2	0	0	0
08:0-15	1	0	0	0	1	0	2	0
15-30	1	0	0	0	2	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	1	0	0	0
09:0-15	6	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
TOTALS	23	1	0	0	8	0	2	0
PM								
04:0-15	1	0	0	0	3	0	0	0
15-30	4	0	0	0	4	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	4	0	0	0	1	0	0	0
05:0-15	7	0	1	0	0	1	0	0
15-30	0	0	0	0	2	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
06:0-15	2	0	0	0	2	0	0	0
15-30	2	0	0	0	1	0	0	0
30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
TOTALS	25	0	1	0	15	1	0	0

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	2	0	1	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	3	0	1	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	1	0	0	0



#2 Md 117 & Orchard Pond Access



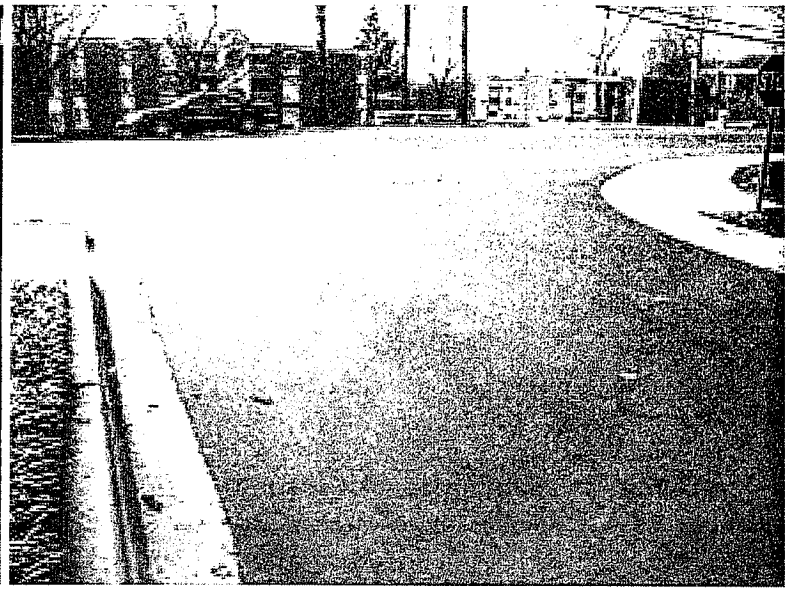
The Traffic Group

MD 117 @ Orchard Pond Access/ Grove Park Access

FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: MD 117@Orchard Pond Access.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 7 OF 10

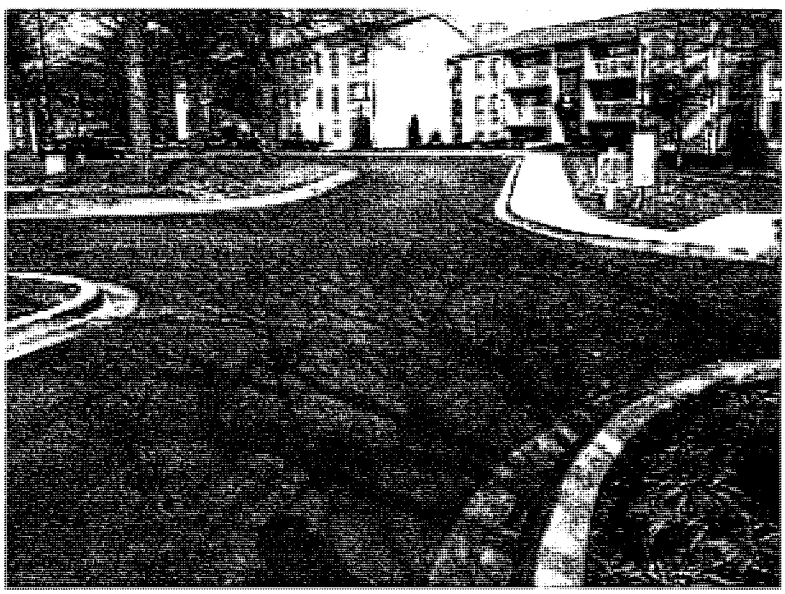
01.JPG



02.JPG

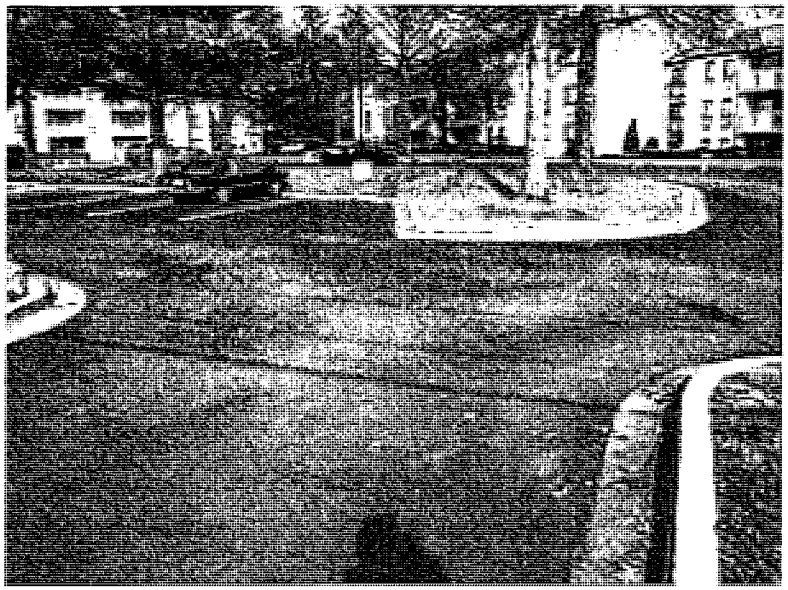
03.JPG

04.JPG



05.JPG

06.JPG



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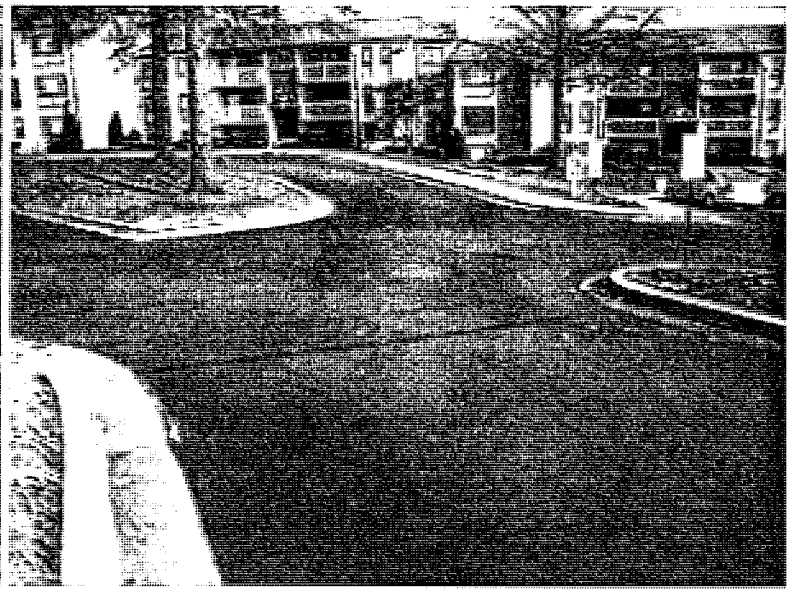
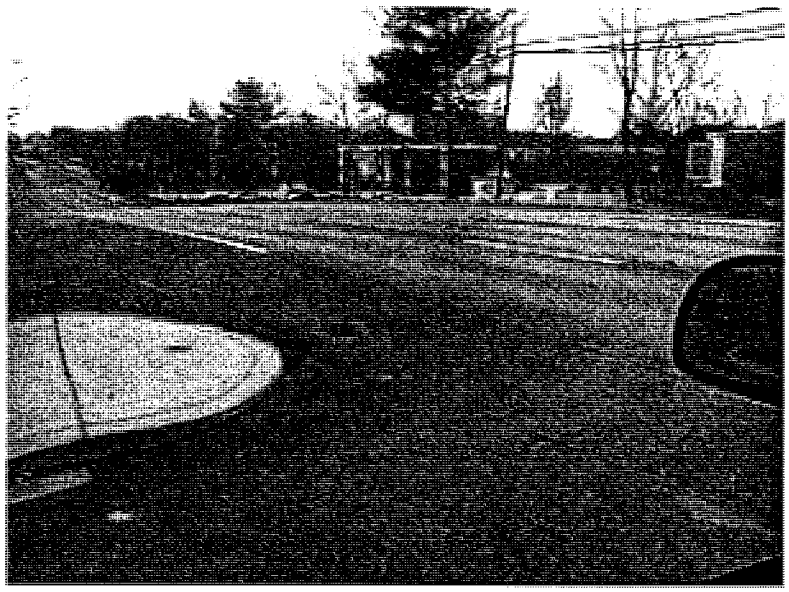
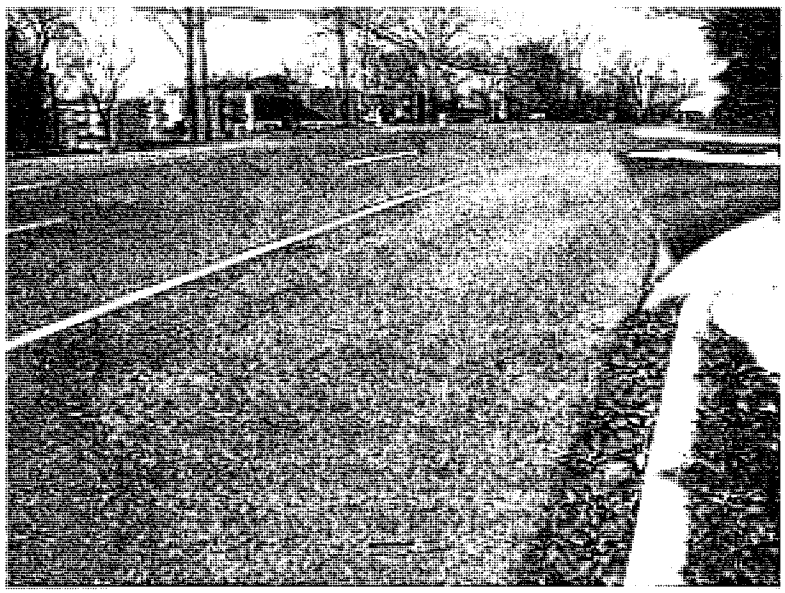


08.JPG

09.JPG



10.JPG



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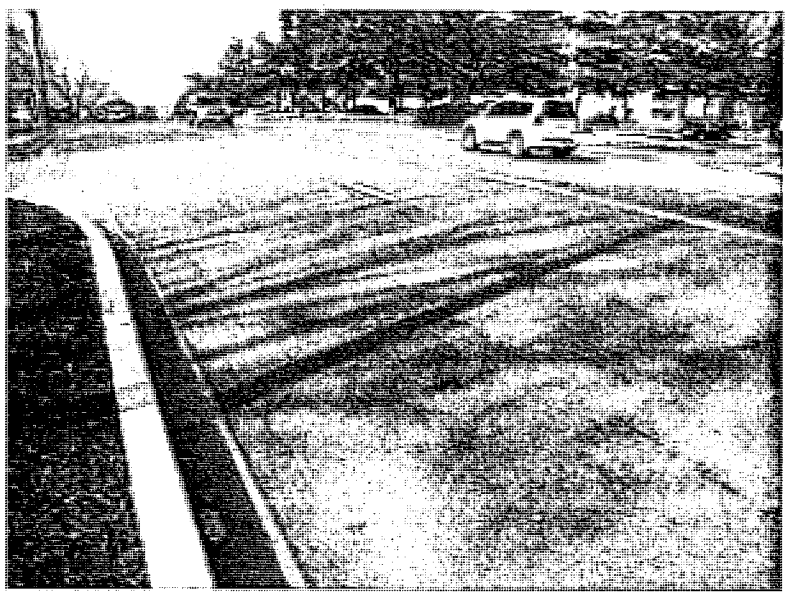

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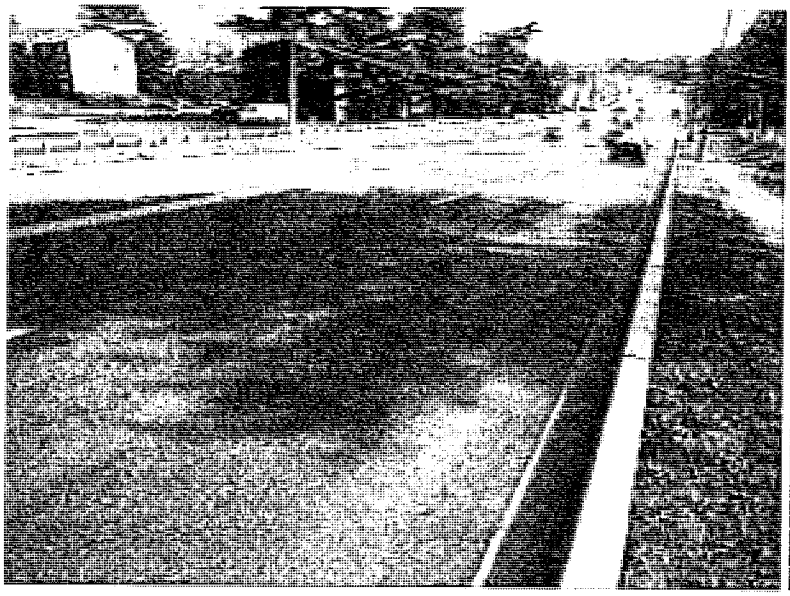
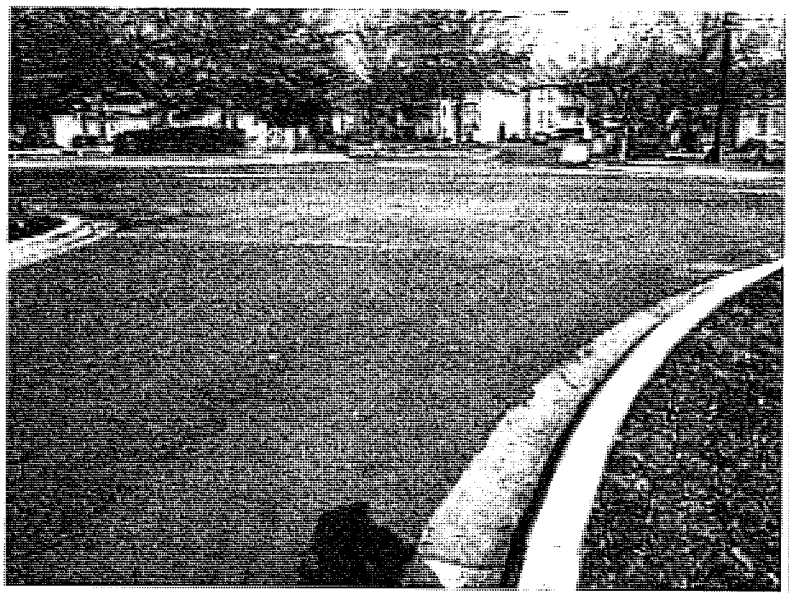


13.JPG

14.JPG



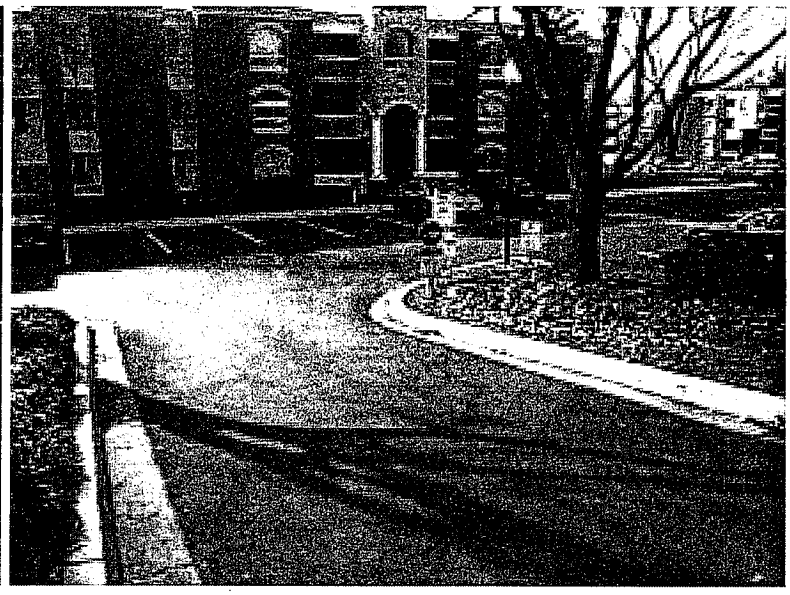
15.JPG

16.JPG

17.JPG

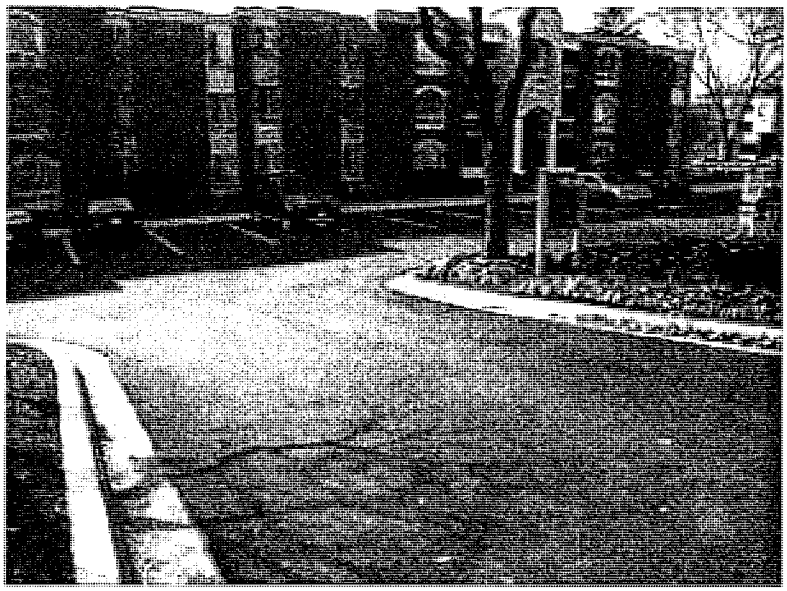
18.JPG

19.JPG



20.JPG

21.JPG



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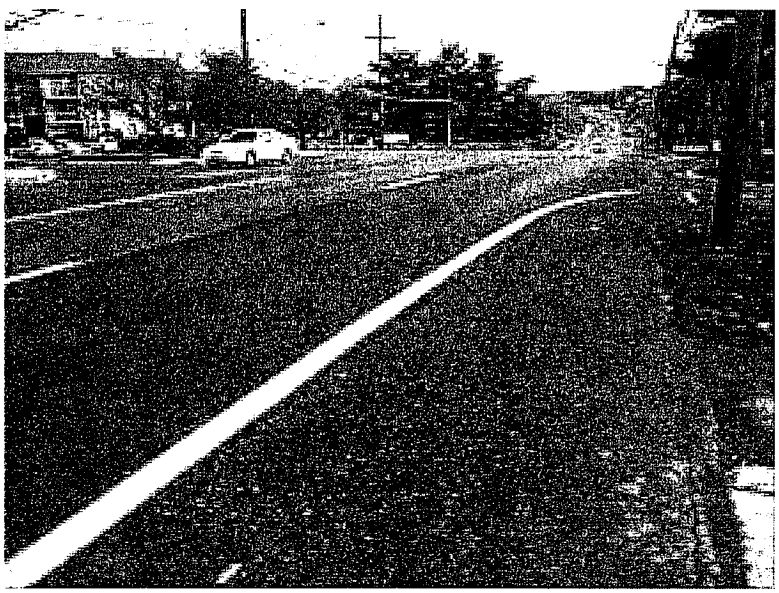
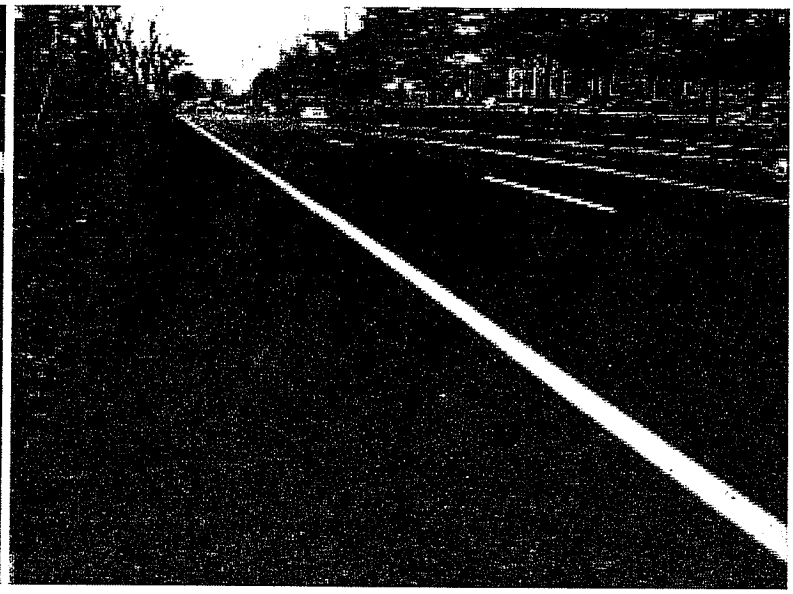


23.JPG

24.JPG

25.JPG



26.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Counted by: RB

Intersection of: Firstfield Rd
and: Orchard Pond Access South
Location: Montgomery Co., MD

Date: December 3, 2008
Weather: Showers,Cold
Entered by: RB

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: FirstField Rd					TRAFFIC FROM SOUTH on: FirstField Rd					TRAFFIC FROM EAST on: Orchard Pond Access-South					TRAFFIC FROM WEST on: Orchard Pond Access-South					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	1	24	0	1	26	1	43	0	0	44	1	0	2	0	3	0	0	5	0	5	78
45-00	1	25	0	0	26	2	37	0	0	39	0	0	1	0	1	2	0	2	0	4	70
07:0-15	0	28	0	0	28	0	46	0	1	47	1	0	2	0	3	3	0	5	0	8	86
15-30	2	38	0	0	40	0	48	0	0	48	1	0	3	0	4	1	0	2	0	3	95
30-45	0	46	0	0	46	0	34	1	0	35	2	1	0	0	3	10	0	4	0	14	98
45-00	3	65	0	0	68	1	67	1	0	69	0	0	1	0	1	4	2	3	0	9	147
08:0-15	4	73	0	1	78	0	64	1	1	66	1	0	0	0	1	2	0	10	0	12	157
15-30	2	83	0	0	85	0	52	0	0	52	1	0	1	0	2	6	0	8	0	14	153
30-45	2	70	0	0	72	1	66	1	0	68	0	1	2	0	3	4	0	3	0	7	150
45-00	2	77	0	0	79	0	62	2	0	64	2	1	2	0	5	3	1	2	0	6	154
09:0-15	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
15-30	0	44	1	0	45	1	57	2	0	60	0	0	2	0	2	3	1	1	0	5	112
3 Hr Totals	17	573	1	2	593	6	578	8	2	594	9	3	16	0	28	38	4	45	0	87	1188
1 Hr Totals																					
630-730	4	115	0	1	120	3	174	0	1	178	3	0	8	0	11	6	0	14	0	20	329
645-745	3	137	0	0	140	2	165	1	1	169	4	1	6	0	11	16	0	13	0	29	349
07-08	5	177	0	0	182	1	195	2	1	199	4	1	6	0	11	18	2	14	0	34	426
715-815	9	222	0	1	232	1	213	3	1	218	4	1	4	0	9	17	2	19	0	38	497
730-830	9	267	0	1	277	1	217	3	1	222	4	1	2	0	7	22	2	25	0	49	555
745-845	11	291	0	1	303	2	249	3	1	255	2	1	4	0	7	16	2	24	0	42	607
08-09	10	303	0	1	314	1	244	4	1	250	4	2	5	0	11	15	1	23	0	39	614
815-915	6	230	0	0	236	1	182	3	0	186	3	2	5	0	10	13	1	13	0	27	459
830-930	4	191	1	0	196	2	187	5	0	194	2	2	6	0	10	10	2	6	0	18	418
PEAK HOUR																					
08-09	10	303	0	1	314	1	244	4	1	250	4	2	5	0	11	15	1	23	0	39	614
PM																					
04:0-15	1	78	1	0	80	3	83	14	0	100	0	2	1	0	3	1	1	0	0	2	185
15-30	3	101	0	0	104	1	68	2	0	71	0	0	1	0	1	1	0	2	0	3	179
30-45	0	93	0	0	93	4	70	1	0	75	0	0	1	0	1	3	0	2	0	5	174
45-00	6	81	0	0	87	2	82	1	2	87	0	0	0	0	0	1	0	5	0	6	180
05:0-15	6	95	4	0	105	1	60	2	0	63	0	0	1	0	1	1	0	5	0	6	175
15-30	2	90	1	0	93	2	70	5	1	78	0	0	0	0	0	2	0	3	0	5	176
30-45	3	92	1	0	96	2	62	2	2	68	0	0	1	0	1	1	0	3	0	4	169
45-00	3	96	0	0	99	2	53	1	0	56	0	0	1	0	1	0	0	3	0	3	159
06:0-15	3	88	2	0	93	5	57	1	0	63	0	1	2	0	3	1	0	5	0	6	165
15-30	5	100	2	1	108	1	54	2	0	57	1	0	2	0	3	4	0	10	0	14	182
30-45	4	72	0	0	76	5	62	2	0	69	0	0	0	0	0	3	0	0	0	3	148
45-00	0	65	2	0	67	4	52	2	0	58	1	0	2	0	3	2	0	4	0	6	134
3 Hr Totals	36	1051	13	1	1101	32	773	35	5	845	2	3	12	0	17	20	1	42	0	63	2026
1 Hr Totals																					
04-05	10	353	1	0	364	10	303	18	2	333	0	2	3	0	5	6	1	9	0	16	718
415-515	15	370	4	0	389	8	280	6	2	296	0	0	3	0	3	6	0	14	0	20	708
430-530	14	359	5	0	378	9	282	9	3	303	0	0	2	0	2	7	0	15	0	22	705
445-545	17	358	6	0	381	7	274	10	5	296	0	0	2	0	2	5	0	16	0	21	700
05-06	14	373	6	0	393	7	245	10	3	265	0	0	3	0	3	4	0	14	0	18	679
515-615	11	366	4	0	381	11	242	9	3	265	0	1	4	0	5	4	0	14	0	18	669
530-630	14	376	5	1	396	10	226	6	2	244	1	1	6	0	8	6	0	21	0	27	675
545-645	15	356	4	1	376	13	226	6	0	245	1	1	5	0	7	8	0	18	0	26	654
06-07	12	325	6	1	344	15	225	7	0	247	2	1	6	0	9	10	0	19	0	29	629
PEAK HOUR																					
04-05	10	353	1	0	364	10	303	18	2	333	0	2	3	0	5	6	1	9	0	16	718

PEDESTRIAN OBSERVATIONS

Intersection of: Firstfield Rd
and: Orchard Pond Access South
Location: Montgomery Co., MD

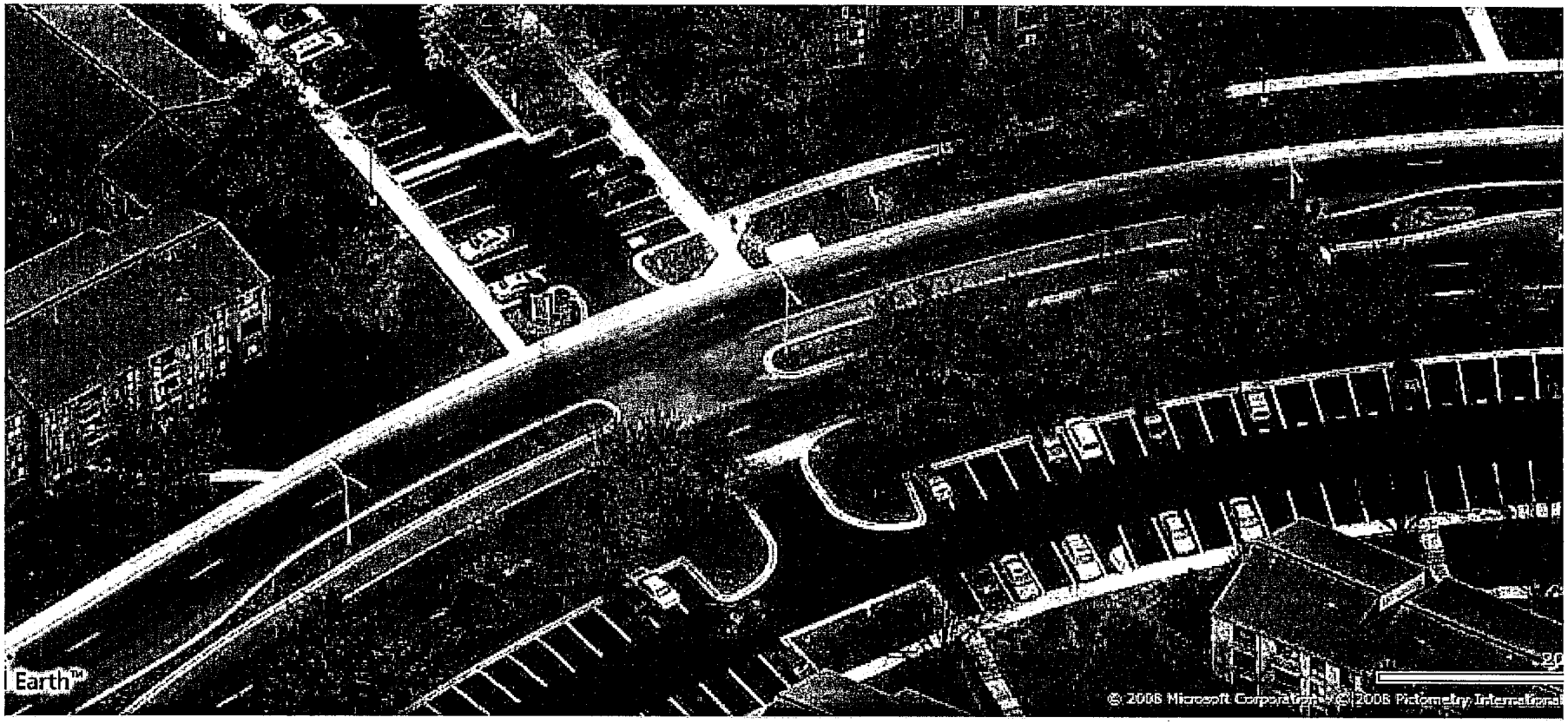
Counted by: RB
Date: December 3, 2008
Weather: Showers,Cold
Entered by: RB

Day: Wednesday

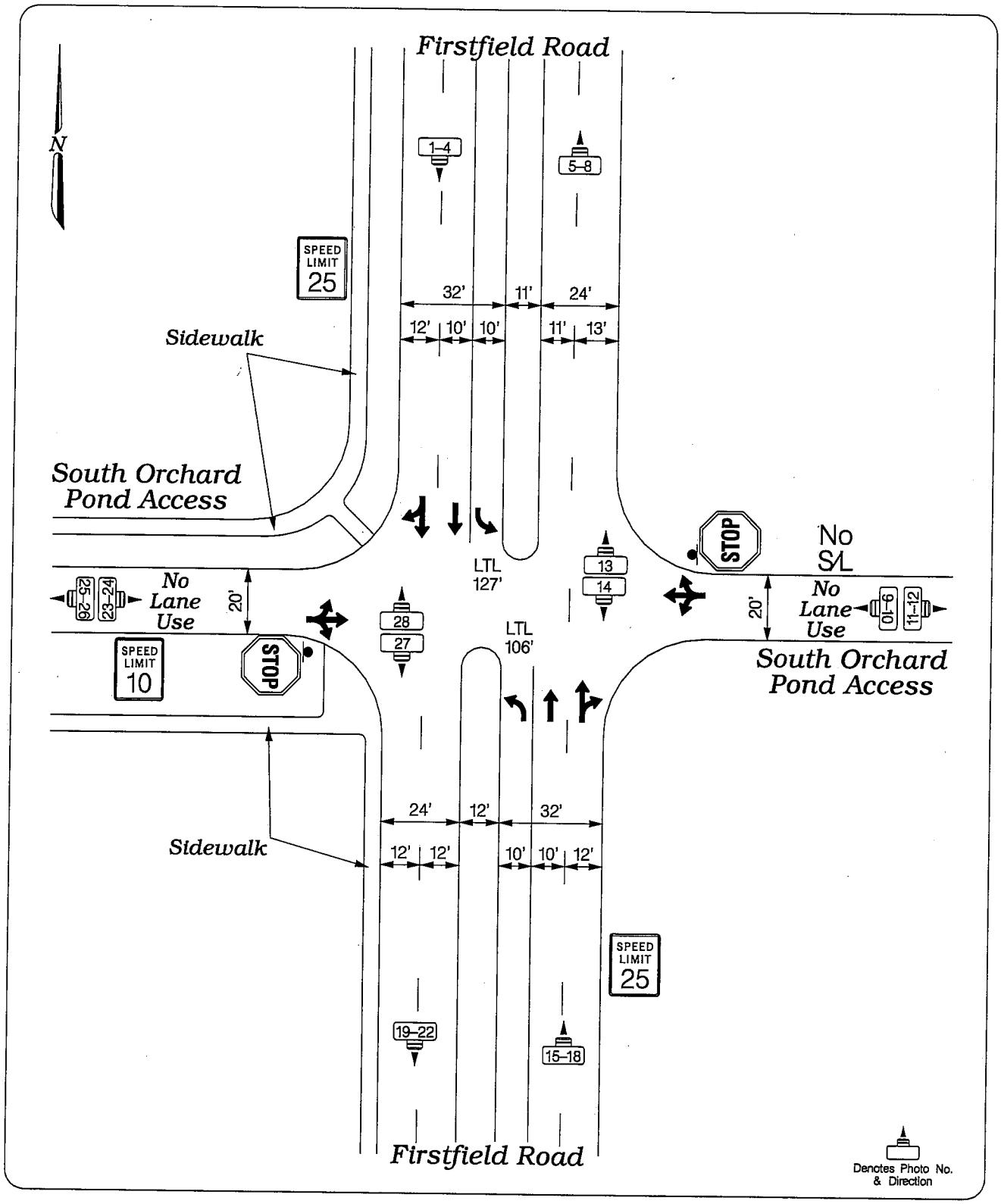
The Traffic Group

TIME	FirstField Rd NORTH LEG				FirstField Rd SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	2	0
45-00	2	0	7	0	0	0	0	0
07:0-15	0	0	2	0	0	0	1	0
15-30	0	0	0	0	0	0	2	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	1	0	2	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
TOTALS	5	0	11	0	0	0	5	0
PM								
04:0-15	0	0	0	0	2	0	0	0
15-30	0	0	1	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	1	0
06:0-15	1	0	0	0	0	0	0	0
15-30	2	0	0	0	0	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	6	0	1	0	2	0	1	0

TIME	Orchard Pond Access-South EAST LEG				Orchard Pond Access-South WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	3	0	2	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	4	0	1	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	7	0	3	0
PM								
04:0-15	0	0	0	0	2	0	2	0
15-30	0	0	0	0	0	0	0	1
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	6	0	2	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	3	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	2	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	13	0	4	1



#3 Firstfield Rd & South Orchard Pond Access



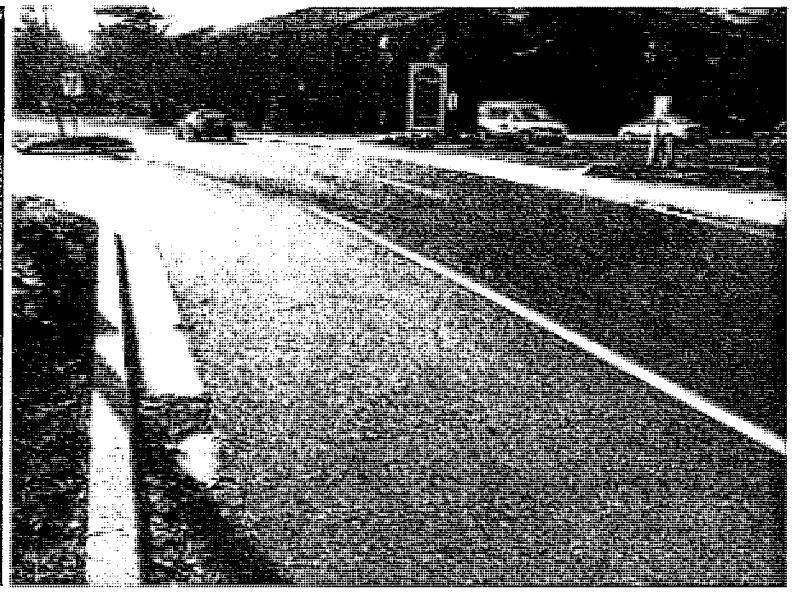
The Traffic Group

Firstfield Road @ South Orchard Pond Access

FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: Firstfield Road@ S Orchard Pond Access.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 4 OF 10

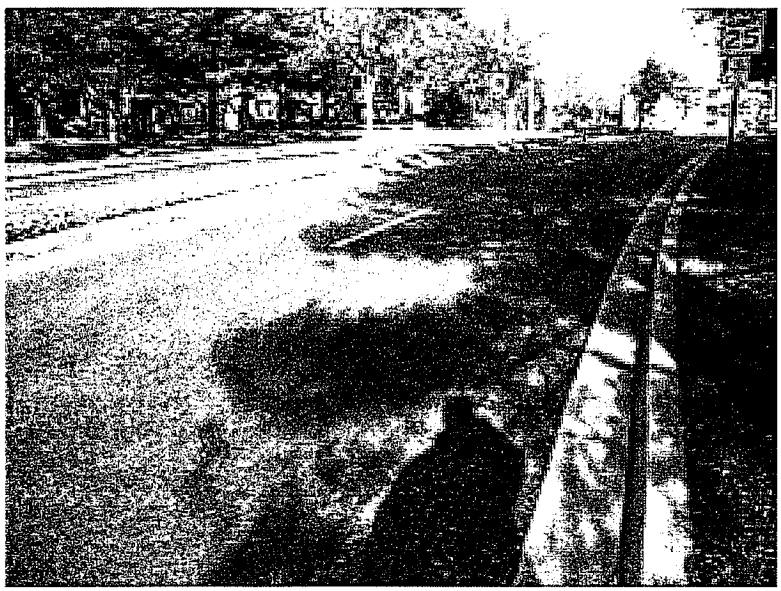
01.JPG



02.JPG

03.JPG

04.JPG



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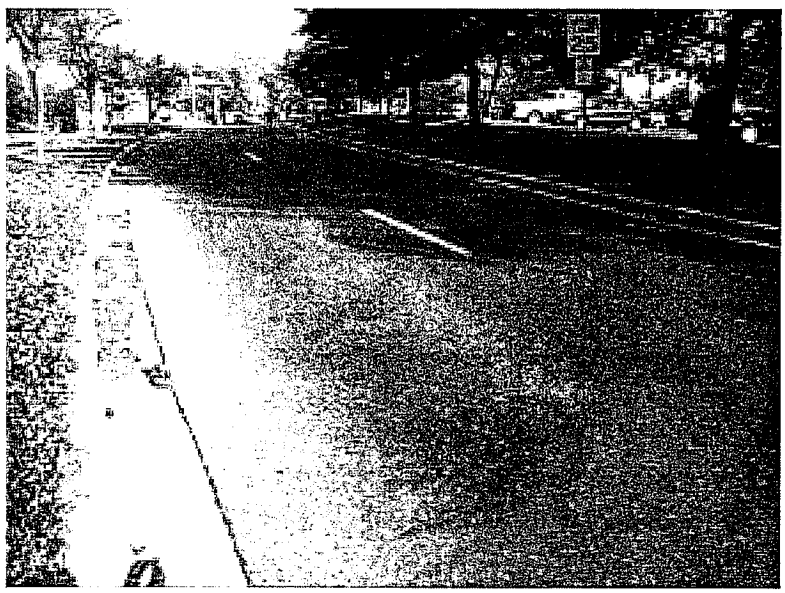

06.JPG

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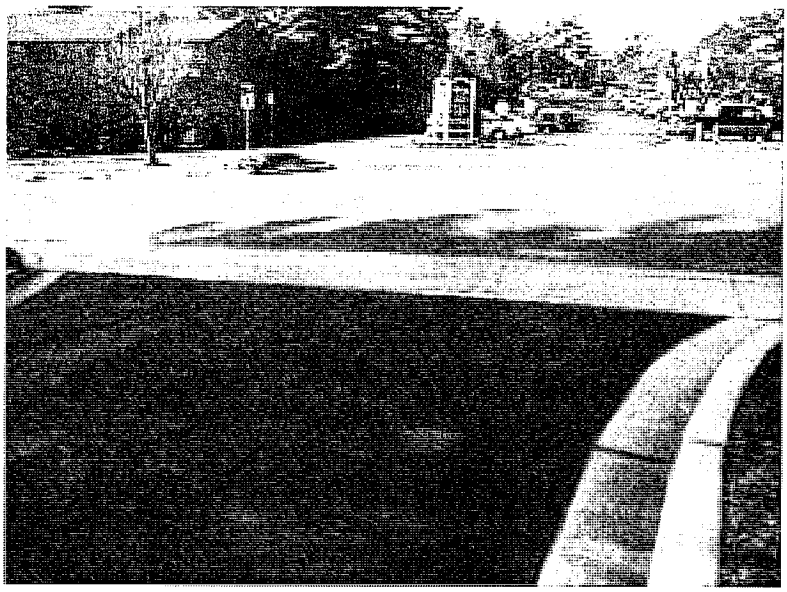

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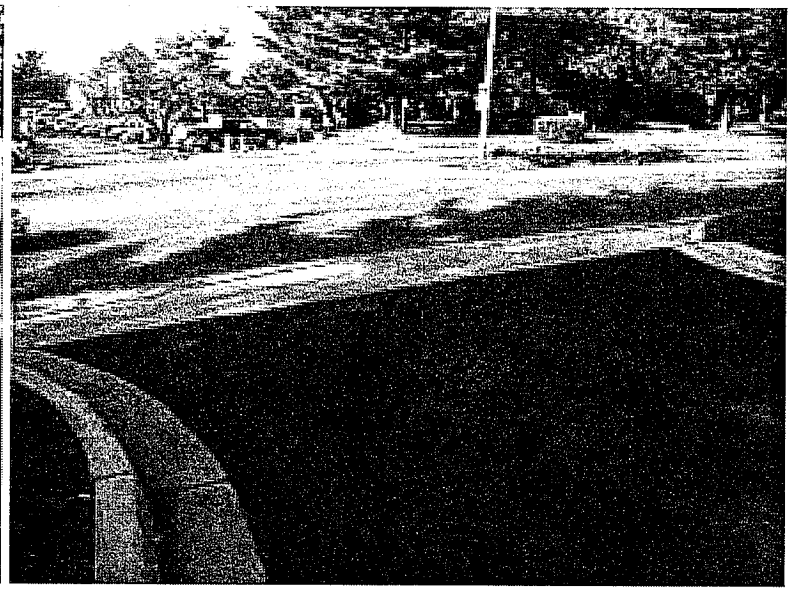

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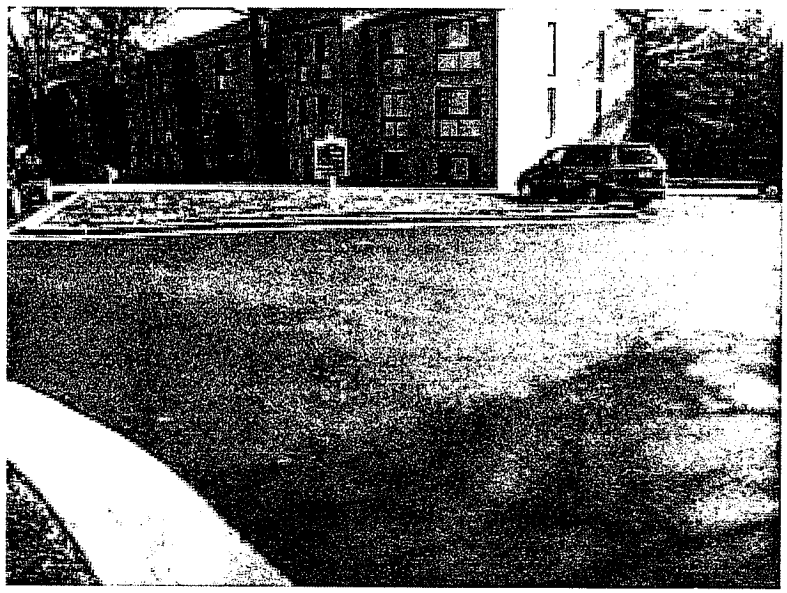
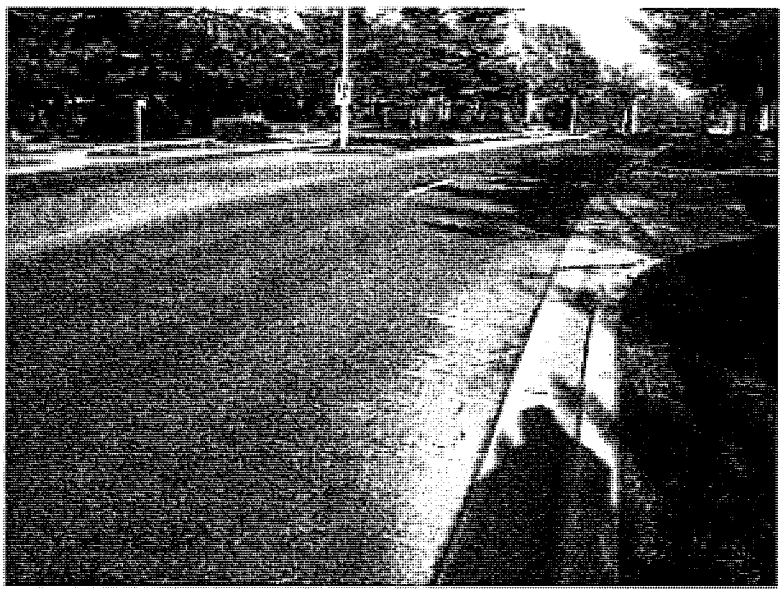


12.JPG

13.JPG

14.JPG



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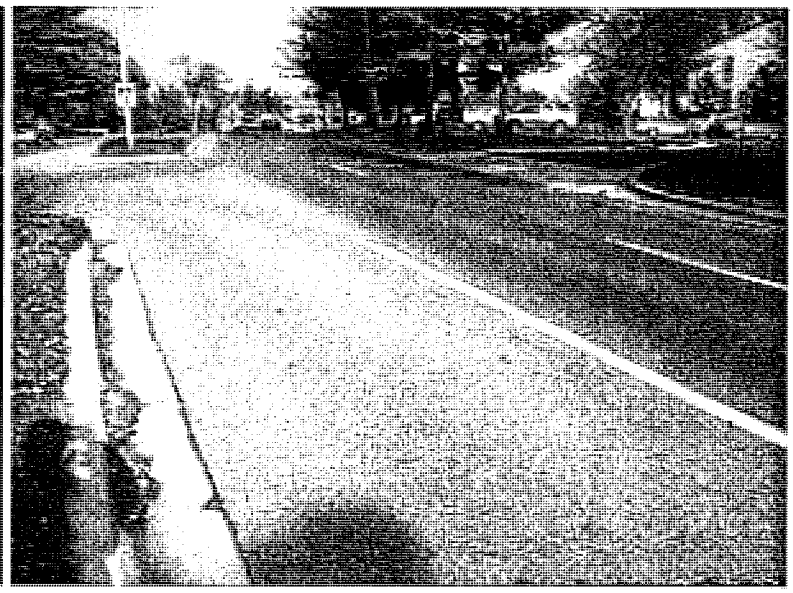

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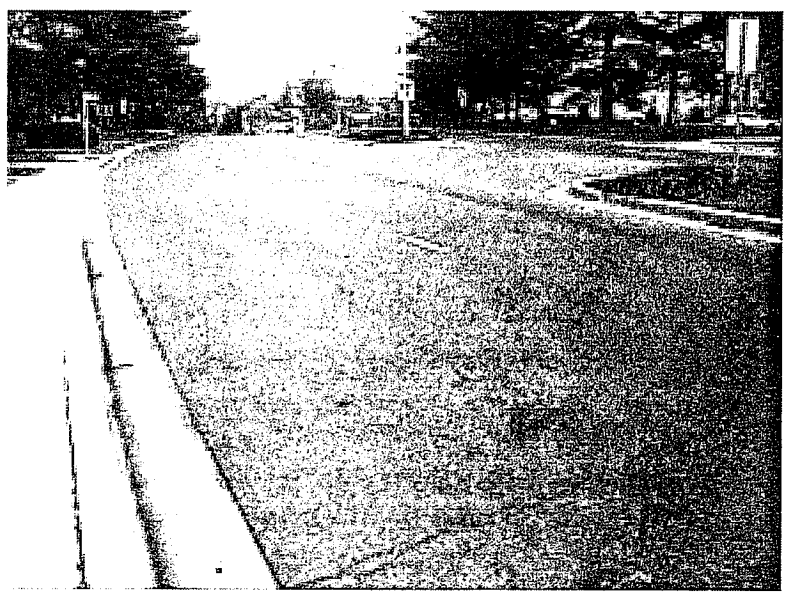


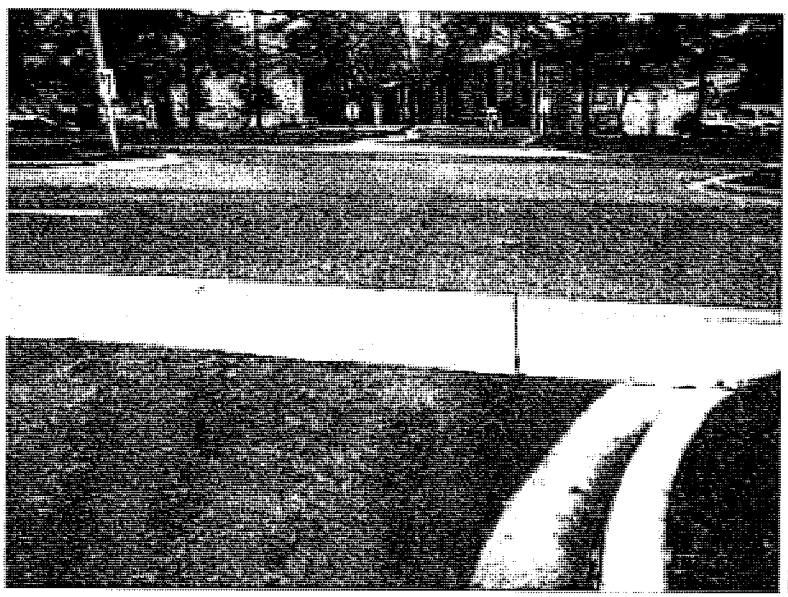
18.JPG

19.JPG

20.JPG

21.JPG

22.JPG



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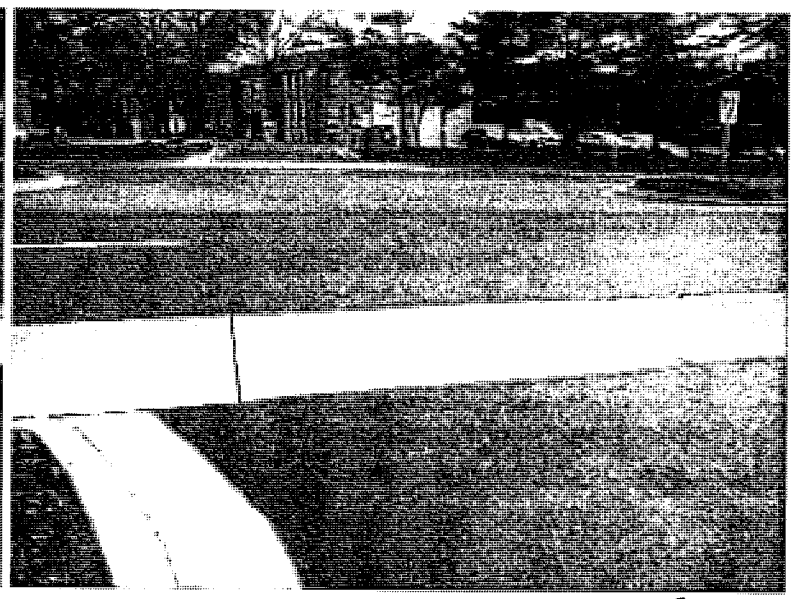

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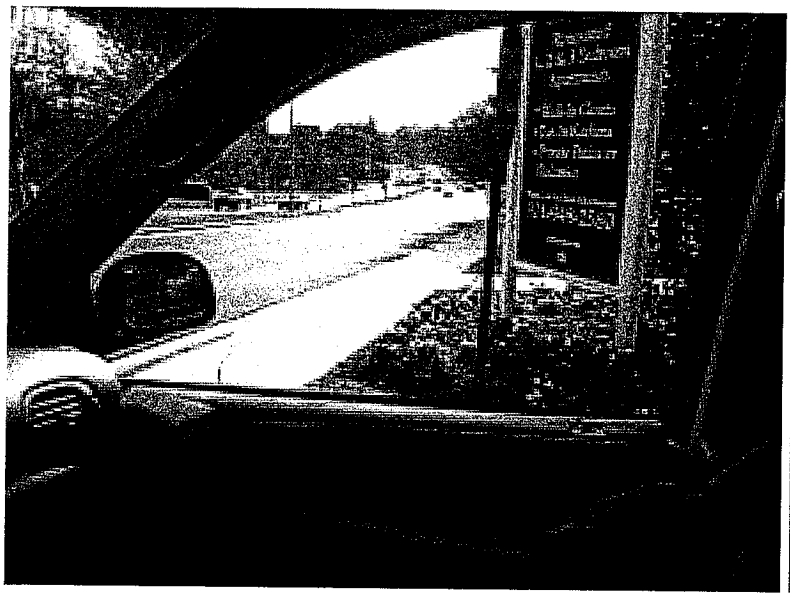
26.JPG



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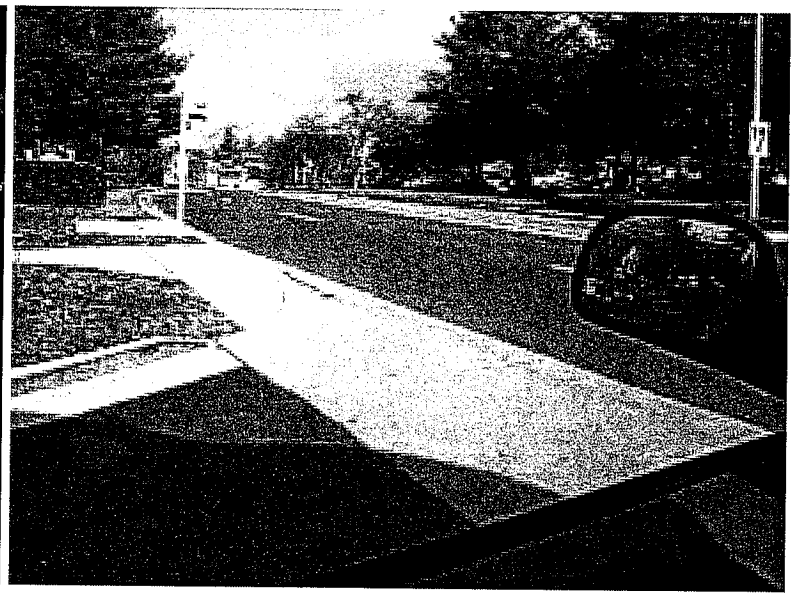


28.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Firstfield Rd
and: Orchard Pond Access North
Location: Montgomery Co., MD

Counted by: RB
Date: December 3, 2008
Weather: Cloudy, Cool
Entered by: RB

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: FirstField Rd					TRAFFIC FROM SOUTH on: FirstField Rd					TRAFFIC FROM EAST on: Orchard Pond Access North					TRAFFIC FROM WEST on: Orchard Pond Access North					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	2	28	0	0	30	0	44	0	0	44	3	0	0	0	3	0	0	8	0	8	85
45-00	0	33	2	0	35	0	54	0	0	54	1	0	0	0	1	2	0	11	0	13	103
07:0-15	1	42	0	0	43	0	50	1	0	51	2	0	3	0	5	1	0	6	0	7	106
15-30	2	35	0	0	37	0	59	1	0	60	7	0	0	0	7	5	0	14	0	19	123
30-45	3	40	2	0	45	0	55	0	0	55	4	0	0	0	4	1	0	9	0	10	114
45-00	5	51	4	1	61	0	79	1	0	80	7	0	1	0	8	3	0	12	0	15	164
08:0-15	4	74	3	0	81	0	80	0	0	80	3	1	0	0	4	2	0	5	0	7	172
15-30	4	69	1	0	74	1	51	1	0	53	8	0	4	0	12	0	0	13	0	13	152
30-45	4	77	1	0	82	1	56	2	0	59	5	0	2	0	7	3	0	17	0	20	168
45-00	2	82	1	0	85	0	57	3	0	60	1	0	0	0	1	4	0	26	0	30	176
09:0-15	2	79	2	0	83	0	52	0	0	52	6	0	0	0	6	2	0	8	0	10	151
15-30	2	77	2	0	81	1	55	3	0	59	5	0	1	0	6	2	0	9	0	11	157
3 Hr Totals	31	687	18	1	737	3	692	12	0	707	52	1	11	0	64	25	0	138	0	163	1363
1 Hr Totals																					
630-730	5	138	2	0	145	0	207	2	0	209	13	0	3	0	16	8	0	39	0	47	417
645-745	6	150	4	0	160	0	218	2	0	220	14	0	3	0	17	9	0	40	0	49	446
07-08	11	168	6	1	186	0	243	3	0	246	20	0	4	0	24	10	0	41	0	51	507
715-815	14	200	9	1	224	0	273	2	0	275	21	1	1	0	23	11	0	40	0	51	573
730-830	16	234	10	1	261	1	265	2	0	268	22	1	5	0	28	6	0	39	0	45	602
745-845	17	271	9	1	298	2	266	4	0	272	23	1	7	0	31	8	0	47	0	55	656
08-09	14	302	6	0	322	2	244	6	0	252	17	1	6	0	24	9	0	61	0	70	668
815-915	12	307	5	0	324	2	216	6	0	224	20	0	6	0	26	9	0	64	0	73	647
830-930	10	315	6	0	331	2	220	8	0	230	17	0	3	0	20	11	0	60	0	71	652
PEAK HOUR																					
08-09	14	302	6	0	322	2	244	6	0	252	17	1	6	0	24	9	0	61	0	70	668
PM																					
04:0-15	6	74	0	0	80	4	81	9	0	94	6	2	0	0	8	4	2	8	0	14	196
15-30	6	64	4	0	74	1	57	5	0	63	3	0	2	0	5	2	0	6	0	8	150
30-45	13	76	4	0	93	2	61	2	0	65	5	1	0	0	6	1	1	9	0	11	175
45-00	11	61	2	0	74	1	68	3	0	72	4	1	1	0	6	2	2	5	0	9	161
05:0-15	15	79	2	0	96	3	73	5	0	81	2	0	2	0	4	1	0	7	0	8	189
15-30	13	102	2	0	117	3	67	3	1	74	5	0	1	0	6	5	1	9	0	15	212
30-45	4	102	9	0	115	5	60	10	0	75	3	0	1	0	4	1	1	10	0	12	206
45-00	3	88	5	0	96	3	60	7	0	70	5	0	1	0	6	2	1	9	0	12	184
06:0-15	7	70	4	0	81	1	66	3	0	70	5	0	1	0	6	2	1	11	0	14	171
15-30	12	93	6	0	111	1	64	4	0	69	3	0	0	0	3	1	0	4	0	5	188
30-45	8	67	10	0	85	2	50	2	0	54	3	0	0	0	3	0	0	8	0	8	150
45-00	7	66	9	0	82	1	45	2	0	48	2	0	1	0	3	1	0	3	0	4	137
3 Hr Totals	105	942	57	0	1104	27	752	55	1	835	46	4	10	0	60	22	9	89	0	120	2119
1 Hr Totals																					
04-05	36	275	10	0	321	8	267	19	0	294	18	4	3	0	25	9	5	28	0	42	682
415-515	45	280	12	0	337	7	259	15	0	281	14	2	5	0	21	6	3	27	0	36	675
430-530	52	318	10	0	380	9	269	13	1	292	16	2	4	0	22	9	4	30	0	43	737
445-545	43	344	15	0	402	12	268	21	1	302	14	1	5	0	20	9	4	31	0	44	768
05-06	35	371	18	0	424	14	260	25	1	300	15	0	5	0	20	9	3	35	0	47	791
515-615	27	362	20	0	409	12	253	23	1	289	18	0	4	0	22	10	4	39	0	53	773
530-630	26	353	24	0	403	10	250	24	0	284	16	0	3	0	19	6	3	34	0	43	749
545-645	30	318	25	0	373	7	240	16	0	263	16	0	2	0	18	5	2	32	0	39	693
06-07	34	296	29	0	359	5	225	11	0	241	13	0	2	0	15	4	1	26	0	31	646
PEAK HOUR																					
05-06	35	371	18	0	424	14	260	25	1	300	15	0	5	0	20	9	3	35	0	47	791

PEDESTRIAN OBSERVATIONS

Intersection of: Firstfield Rd
and: Orchard Pond Access North
Location: Montgomery Co., MD

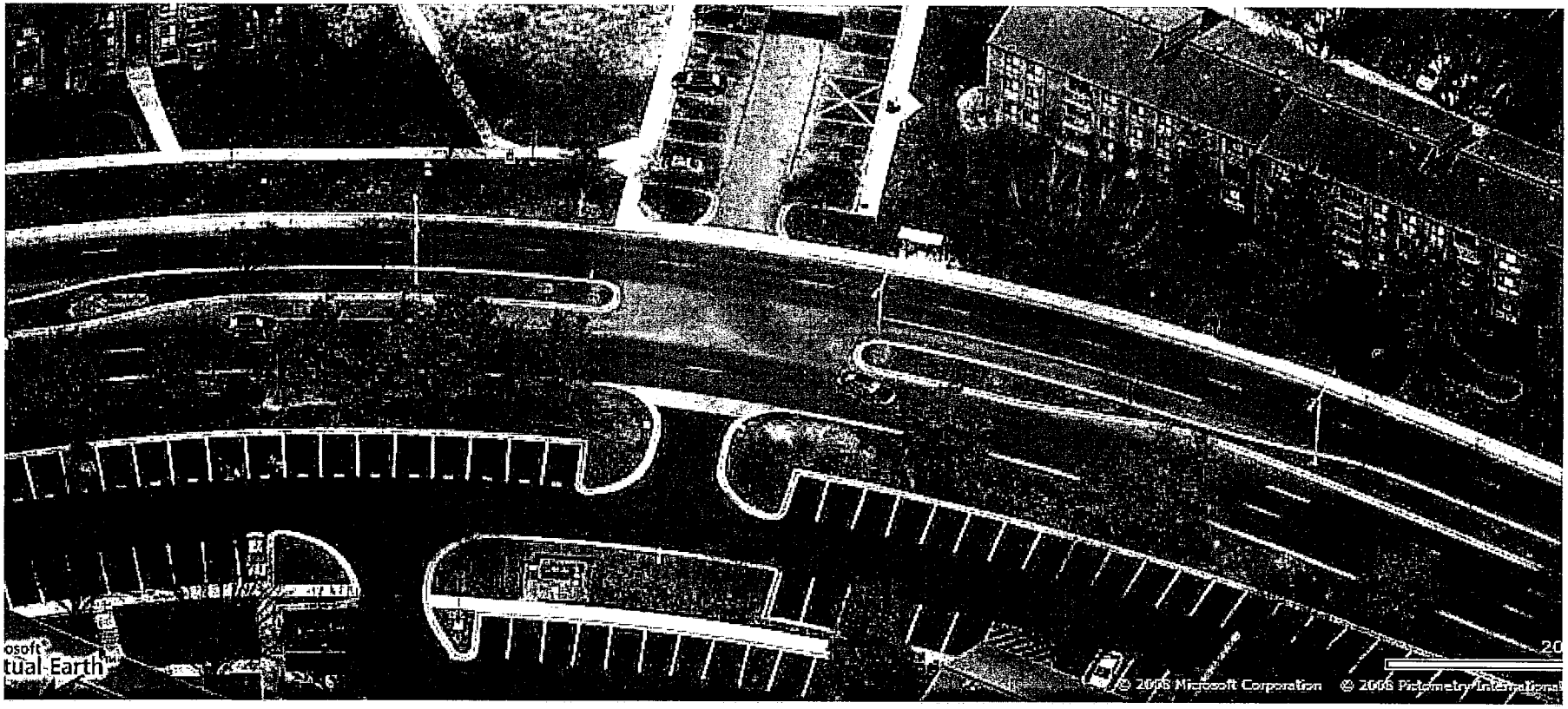
Counted by: RB
Date: December 3, 2008
Weather: Cloudy, Cool
Entered by: RB

Day: Wednesday

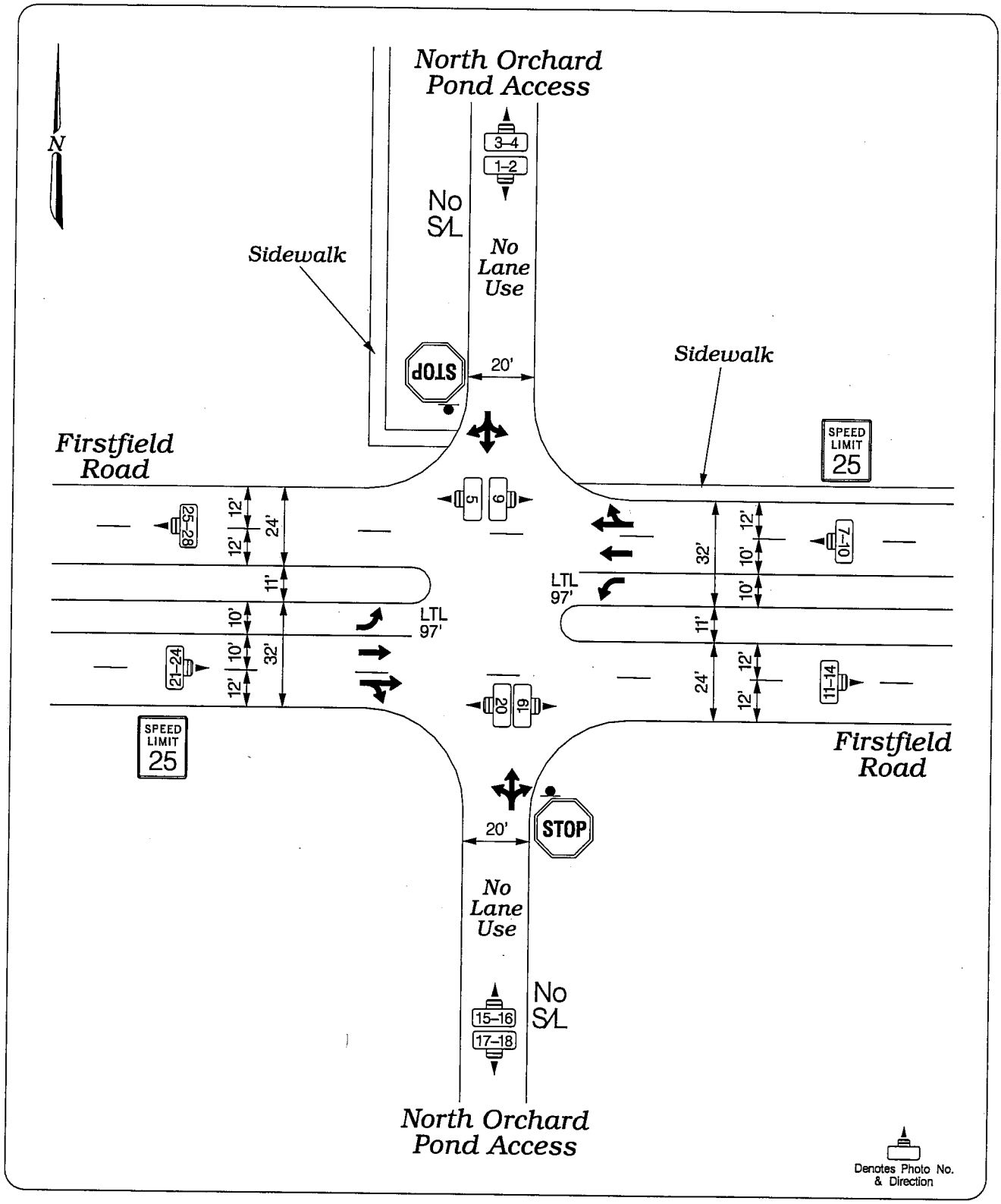
The Traffic Group

TIME	FirstField Rd NORTH LEG				FirstField Rd SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	1	0
45-00	0	0	0	0	2	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	1	0	0	0	4	0	1	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	3	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	2	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	6	0	0	0	2	0	0	0

TIME	Orchard Pond Access North EAST LEG				Orchard Pond Access North WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	3	0	0	0
15-30	2	0	0	0	1	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	2	0	0	0
08:0-15	0	0	0	0	2	1	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	5	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	15	1	0	0
PM								
04:0-15	1	0	0	0	2	0	1	0
15-30	1	1	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	3	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	2	0	0	0	3	0	0	0
30-45	2	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	2	0	0	0	4	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	8	1	0	0	15	0	1	0



#4 Firstfield Rd & North Orchard Pond Access

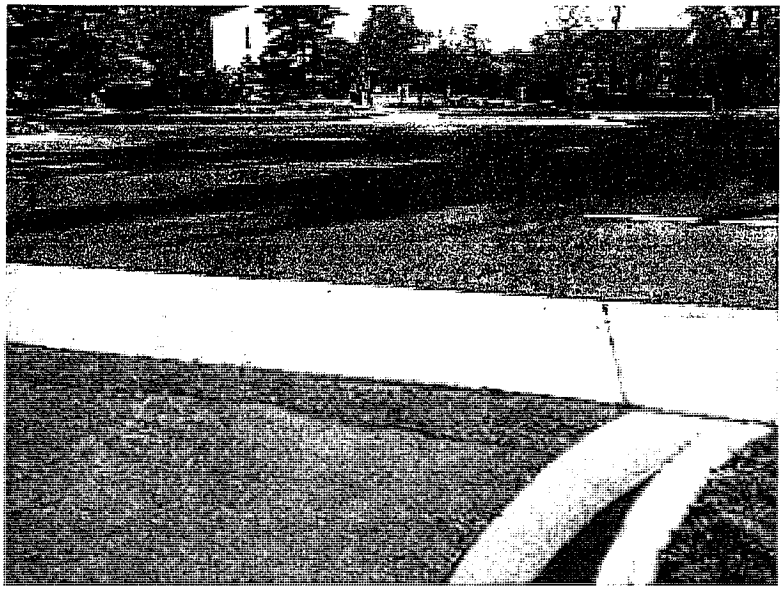


The Traffic Group

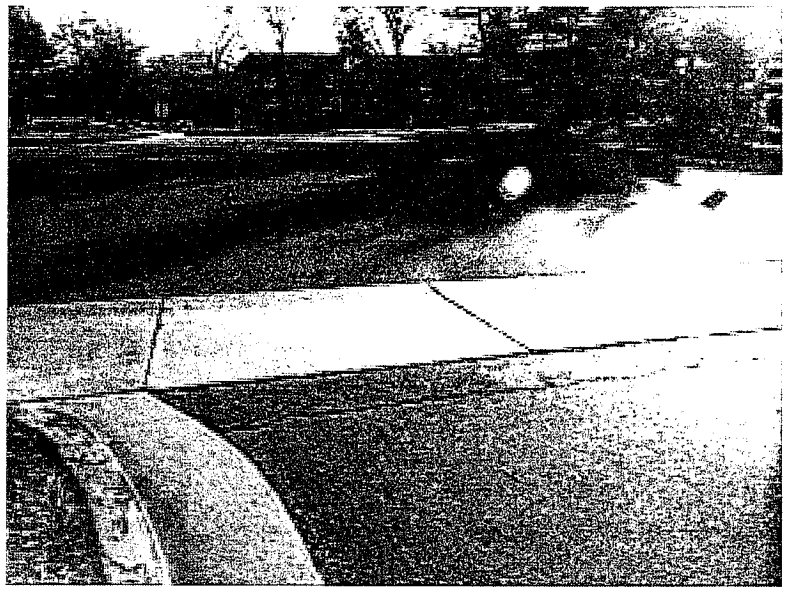
Firstfield Road @ North Orchard Pond Access

FIELD WORK BY: *J. W.*
DRAWN BY: *K.Hurley*
DATE: *November, 2008*
SCALE: *N/A*

JOB NO.: *2008-0911*
DWG NAME: *Firstfield Road@ N Orchard Pond Access.dgn*
LOCATION: *Montgomery Co., MD*
SHEET NO.: *2* OF *10*



01.JPG



02.JPG

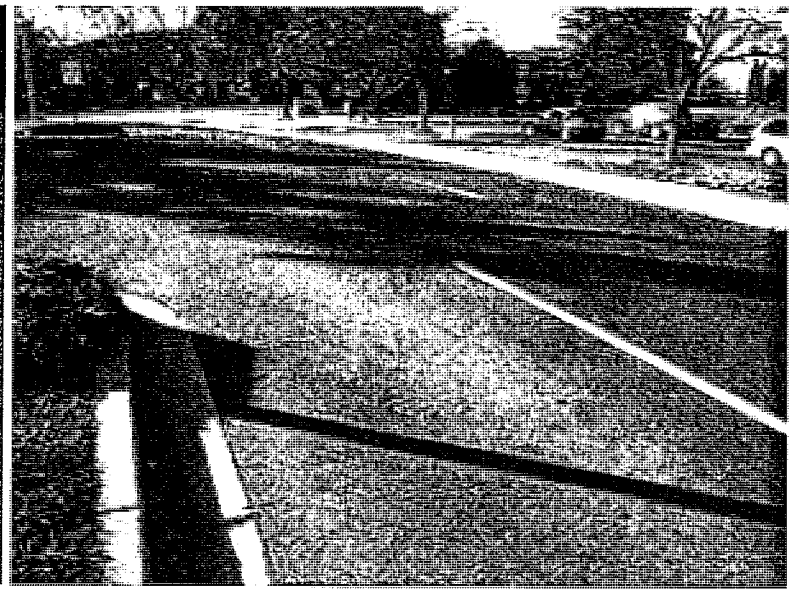
03.JPG

04.JPG

05.JPG

06.JPG

07.JPG



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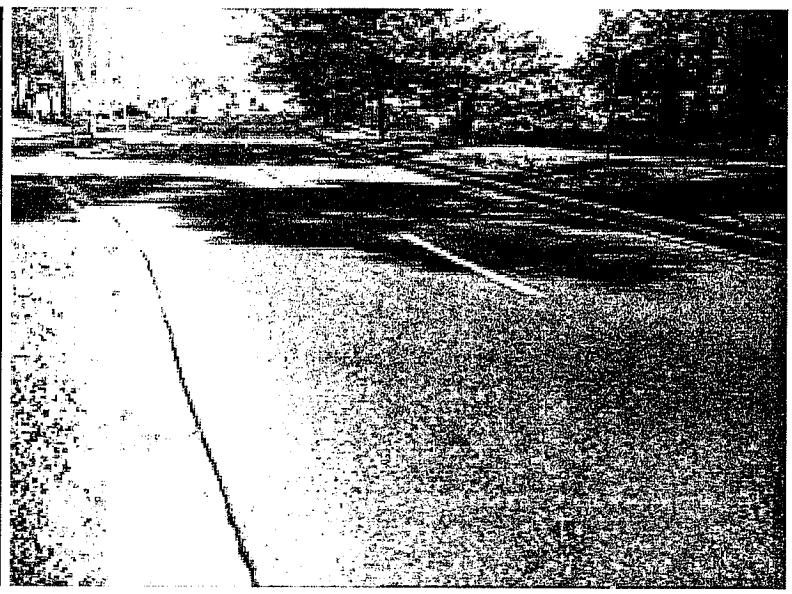
11.JPG



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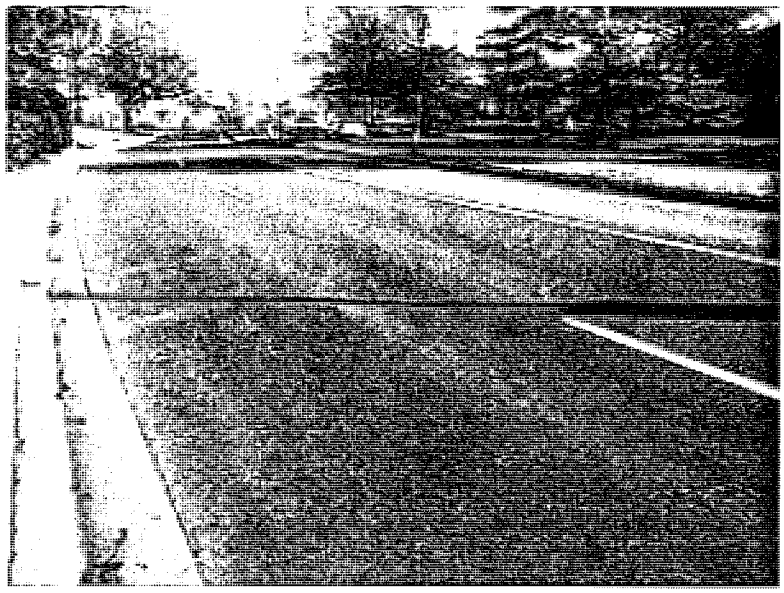
13.JPG



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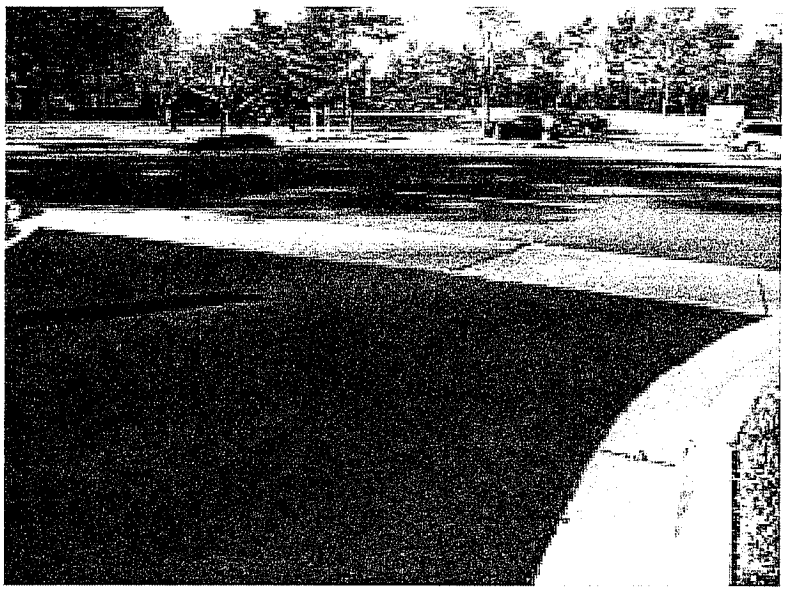

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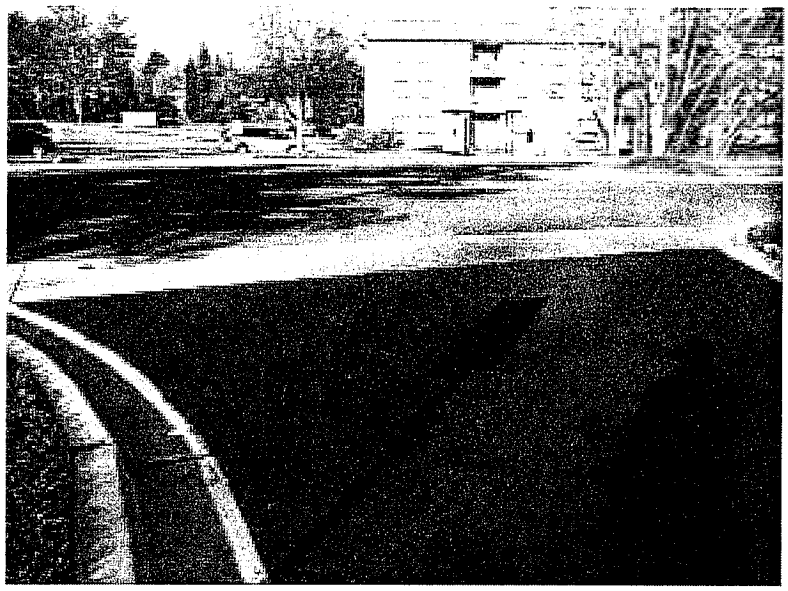

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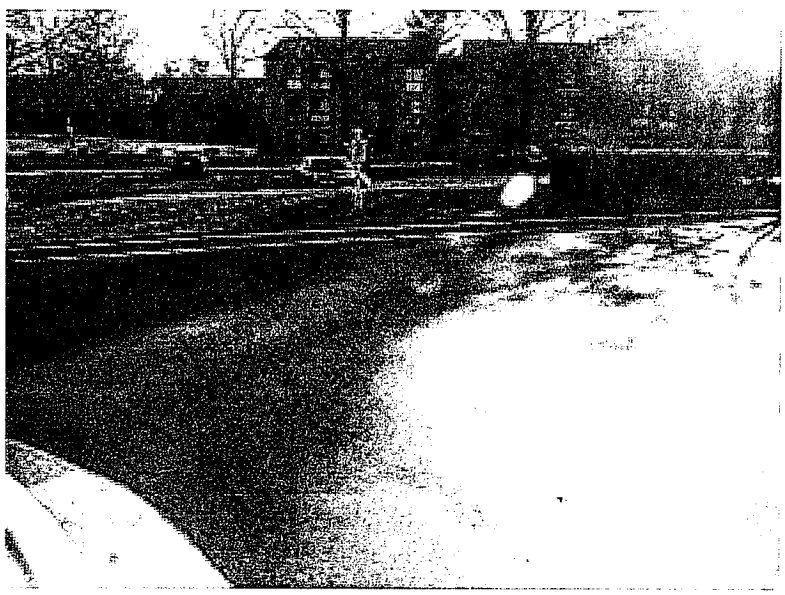

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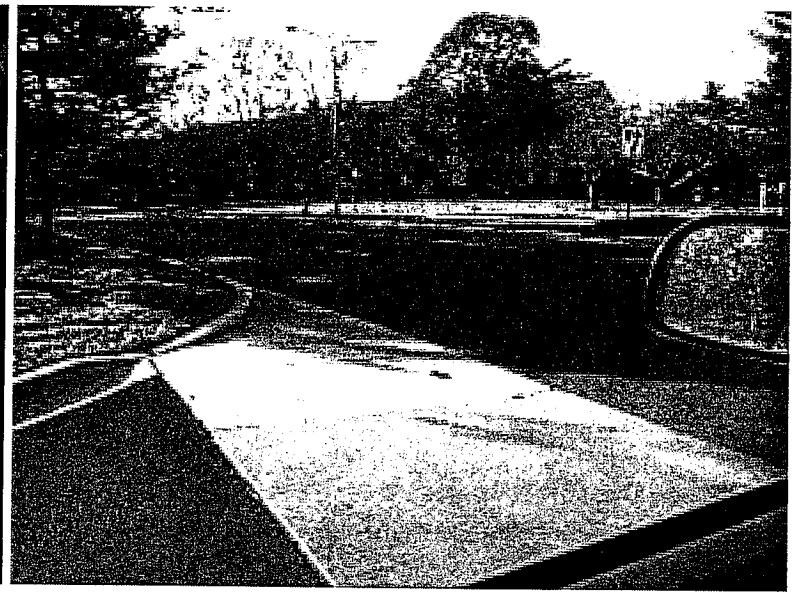

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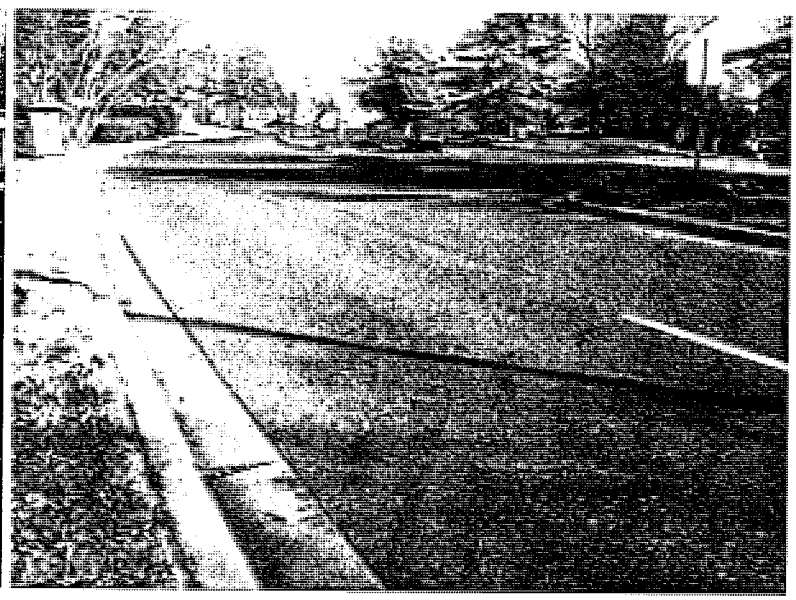


24.JPG

25.JPG

26.JPG

27.JPG

28.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: Watkins Mill Rd - Pheasant Run Dr
Location: Montgomery Co., Md.

Counted by: JC\SS
Date: December 3, 2008
Weather: Fair,Cold
Entered by: RB

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Watkins Mill Rd					TRAFFIC FROM SOUTH on: Pheasant Run Dr					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	0	0	1	0	1	9	0	0	0	9	8	59	2	0	69	0	282	5	0	287	366
45-00	1	0	6	0	7	4	2	1	0	7	11	65	0	0	76	5	336	11	0	352	442
07:0-15	3	0	1	0	4	20	1	0	0	21	16	81	4	0	101	3	310	8	0	321	447
15-30	0	1	2	0	3	16	0	1	0	17	18	91	2	0	111	1	358	24	0	383	514
30-45	1	0	1	0	2	21	1	2	0	24	20	100	4	0	124	4	366	22	0	392	542
45-00	3	0	3	0	6	15	4	0	0	19	22	111	3	0	136	7	379	29	0	415	576
08:0-15	3	0	2	0	5	15	1	2	0	18	27	108	1	0	136	11	381	28	0	420	579
15-30	2	0	4	0	6	16	4	1	0	21	39	102	3	0	144	8	370	35	0	413	584
30-45	8	0	2	0	10	5	3	0	0	8	24	105	3	0	132	10	365	40	0	415	565
45-00	5	0	14	0	19	11	4	2	0	17	37	114	4	0	155	7	358	32	0	397	588
09:0-15	5	0	4	0	9	12	4	0	0	16	46	130	7	0	183	2	319	31	0	352	560
15-30	10	0	8	0	18	14	1	0	0	15	32	123	6	0	161	5	308	27	0	340	534
3 Hr Totals	41	1	48	0	90	158	25	9	0	192	300	1189	39	0	1528	63	4132	292	0	4487	5203
1 Hr Totals																					
630-730	4	1	10	0	15	49	3	2	0	54	53	296	8	0	357	9	1286	48	0	1343	1769
645-745	5	1	10	0	16	61	4	4	0	69	65	337	10	0	412	13	1370	65	0	1448	1945
07-08	7	1	7	0	15	72	6	3	0	81	76	383	13	0	472	15	1413	83	0	1511	2079
715-815	7	1	8	0	16	67	6	5	0	78	87	410	10	0	507	23	1484	103	0	1610	2211
730-830	9	0	10	0	19	67	10	5	0	82	108	421	11	0	540	30	1496	114	0	1640	2281
745-845	16	0	11	0	27	51	12	3	0	66	112	426	10	0	548	36	1495	132	0	1663	2304
08-09	18	0	22	0	40	47	12	5	0	64	127	429	11	0	567	36	1474	135	0	1645	2316
815-915	20	0	24	0	44	44	15	3	0	62	146	451	17	0	614	27	1412	138	0	1577	2297
830-930	28	0	28	0	56	42	12	2	0	56	139	472	20	0	631	24	1350	130	0	1504	2247
PEAK HOUR																					
08-09	18	0	22	0	40	47	12	5	0	64	127	429	11	0	567	36	1474	135	0	1645	2316
PM																					
04:0-15	24	3	20	0	47	7	0	6	0	13	3	242	11	0	256	3	114	5	0	122	438
15-30	9	0	18	0	27	9	1	6	0	16	8	303	5	0	316	2	129	7	0	138	497
30-45	22	1	19	1	43	10	1	13	0	24	7	323	15	0	345	3	117	0	0	120	532
45-00	27	3	32	0	62	8	0	9	0	17	4	289	9	0	302	0	127	1	0	128	509
05:0-15	35	6	43	0	84	9	0	17	0	26	6	314	6	0	326	2	125	0	0	127	563
15-30	33	8	48	0	89	11	1	6	0	18	3	358	21	0	382	2	144	3	0	149	638
30-45	31	5	39	0	75	7	1	11	0	19	8	322	18	0	348	2	120	3	0	125	567
45-00	28	6	43	1	78	9	0	4	0	13	4	336	9	0	349	2	156	3	0	161	601
06:0-15	23	3	24	0	50	10	0	9	0	19	4	254	15	0	273	1	142	0	0	143	485
15-30	11	1	18	0	30	10	0	3	0	13	1	277	12	0	290	2	150	2	0	154	487
30-45	7	3	21	0	31	11	0	7	0	18	1	262	12	0	275	2	127	4	0	133	457
45-00	8	1	11	0	20	7	0	3	0	10	2	275	7	0	284	1	129	1	0	131	445
3 Hr Totals	258	40	336	2	636	108	4	94	0	206	51	3555	140	0	3746	22	1580	29	0	1631	6219
1 Hr Totals																					
04-05	82	7	89	1	179	34	2	34	0	70	22	1157	40	0	1219	8	487	13	0	508	1976
415-515	93	10	112	1	216	36	2	45	0	83	25	1229	35	0	1289	7	498	8	0	513	2101
430-530	117	18	142	1	278	38	2	45	0	85	20	1284	51	0	1355	7	513	4	0	524	2242
445-545	126	22	162	0	310	35	2	43	0	80	21	1283	54	0	1358	6	516	7	0	529	2277
05-06	127	25	173	1	326	36	2	38	0	76	21	1330	54	0	1405	8	545	9	0	562	2369
515-615	115	22	154	1	292	37	2	30	0	69	19	1270	63	0	1352	7	562	9	0	578	2291
530-630	93	15	124	1	233	36	1	27	0	64	17	1189	54	0	1260	7	568	8	0	583	2140
545-645	69	13	106	1	189	40	0	23	0	63	10	1129	48	0	1187	7	575	9	0	591	2030
06-07	49	8	74	0	131	38	0	22	0	60	8	1068	46	0	1122	6	548	7	0	561	1874
PEAK HOUR																					
05-06	127	25	173	1	326	36	2	38	0	76	21	1330	54	0	1405	8	545	9	0	562	2369

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: Watkins Mill Rd - Pheasant Run Dr
Location: Montgomery Co., Md.

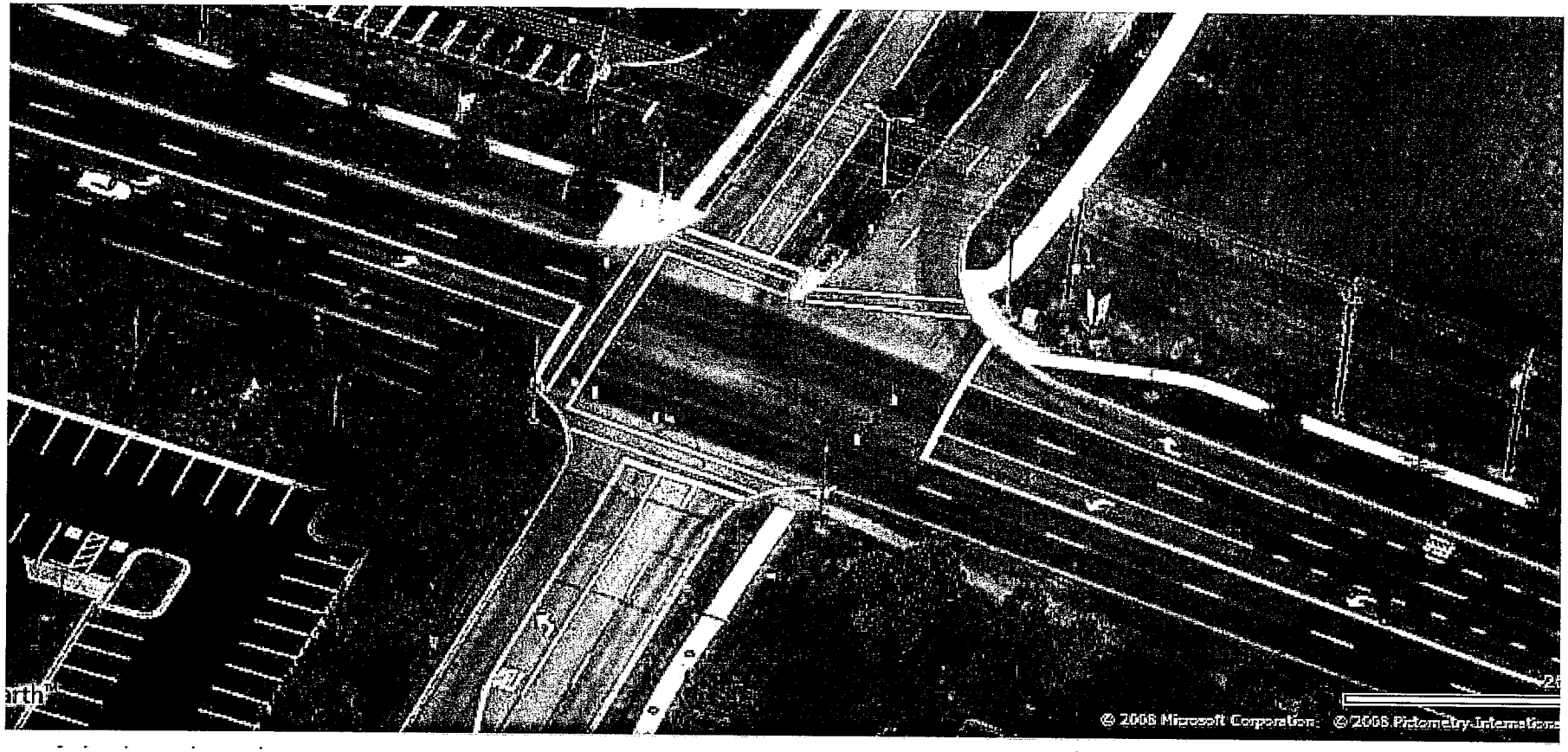
Counted by: JC\SS
Date: December 3, 2008
Weather: Fair,Cold
Entered by: RB

Day: Wednesday

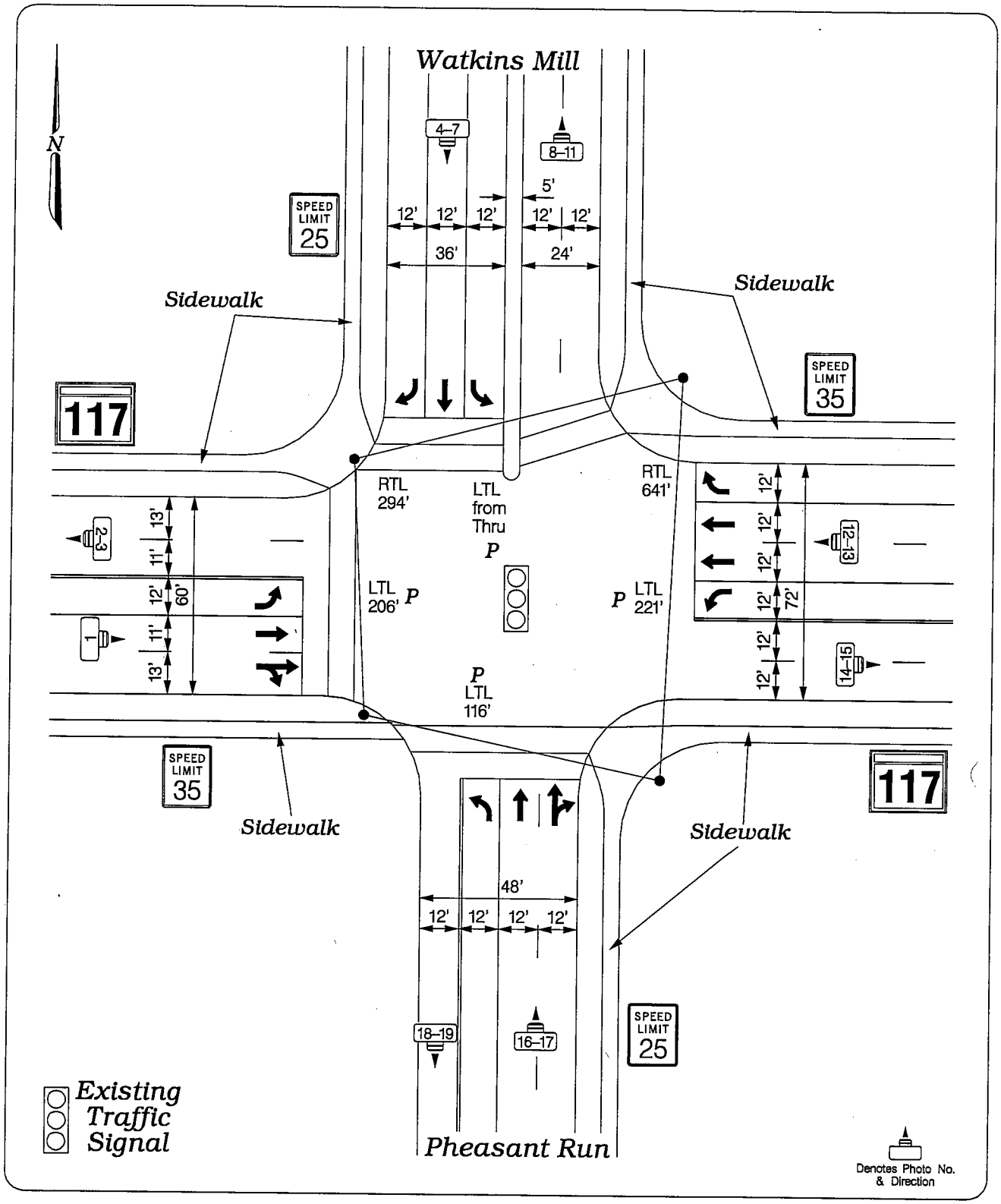
The Traffic Group

TIME	Watkins Mill Rd NORTH LEG				Pheasant Run Dr SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	5	0	0	0
PM								
04:0-15	0	0	0	0	2	0	0	0
15-30	1	0	1	0	1	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	1	0	0	0	1	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	1	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
TOTALS	4	0	1	0	9	0	0	0

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	1	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	2	0	0	0
45-00	0	0	0	0	1	0	0	0
09:0-15	1	0	0	0	3	0	2	0
15-30	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	8	0	2	0
PM								
04:0-15	1	0	0	0	2	0	1	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	1	0	0	0
05:0-15	0	1	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	3	0	0	0
45-00	0	0	0	0	1	0	1	0
06:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	2	1	0	0	10	0	2	0



#5 MD 117 & W. Watkins Mill/Pheasant Run Dr

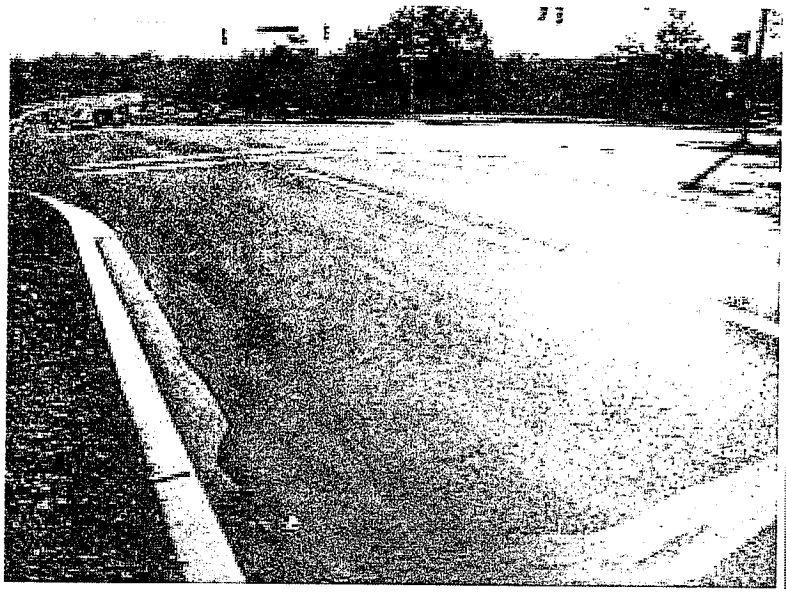


The Traffic Group

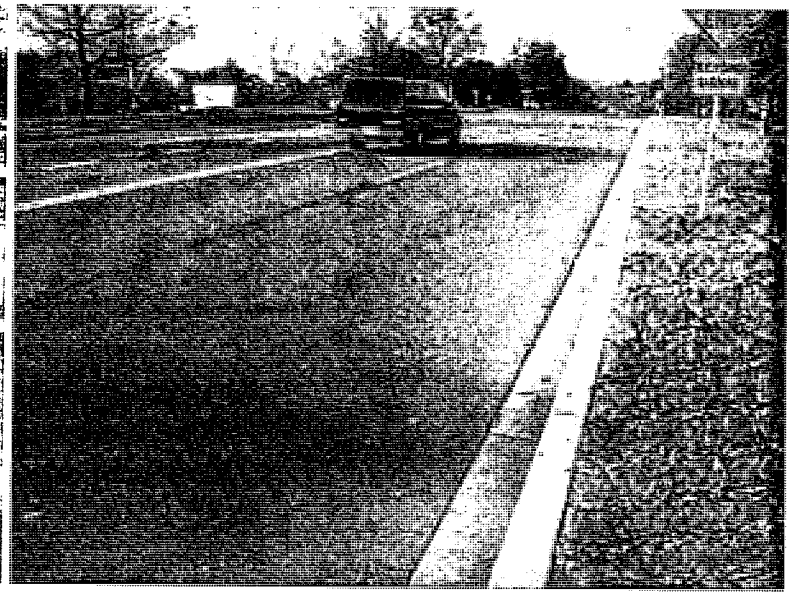
MD 117 @ Pheasant Run/ Watkins Mill

FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

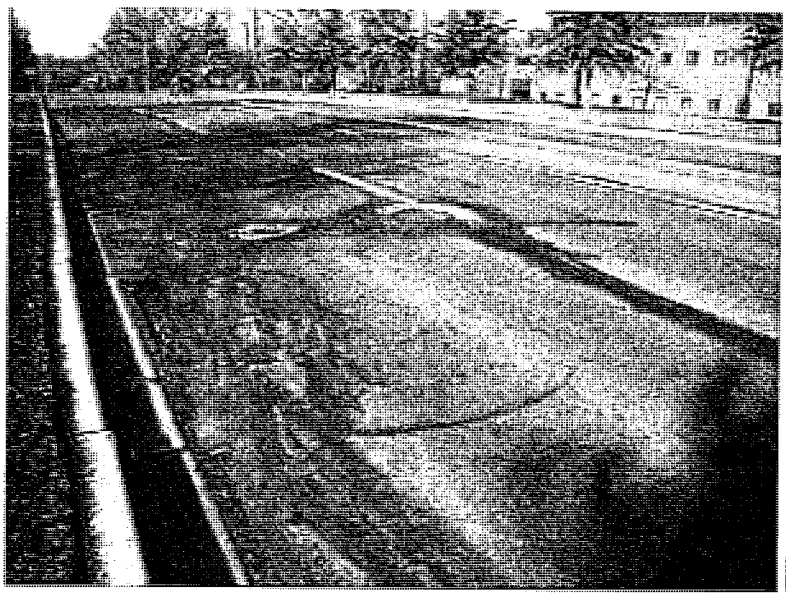
JOB NO.: 2008-0911
DWG NAME: MD 117@Pheasant Run-Watkins Mill.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 8 OF 10



01.JPG



02.JPG

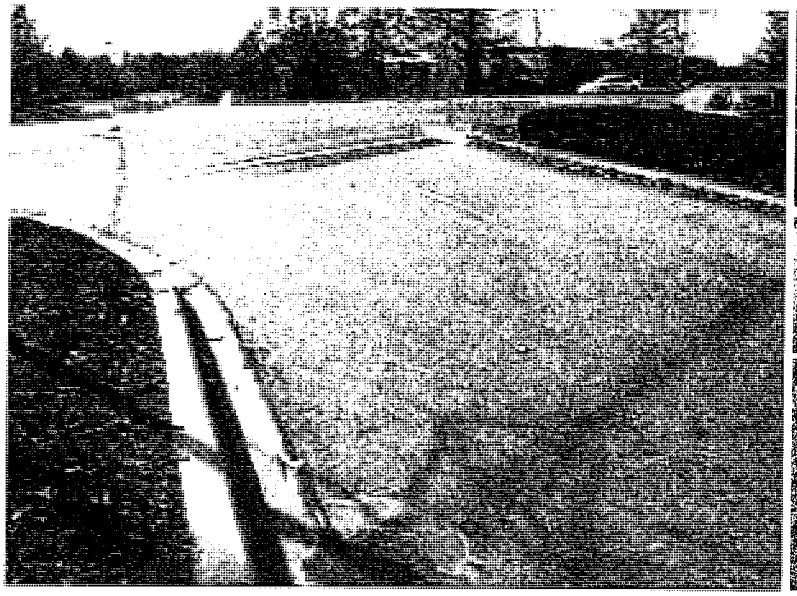


03.JPG

04.JPG

05.JPG

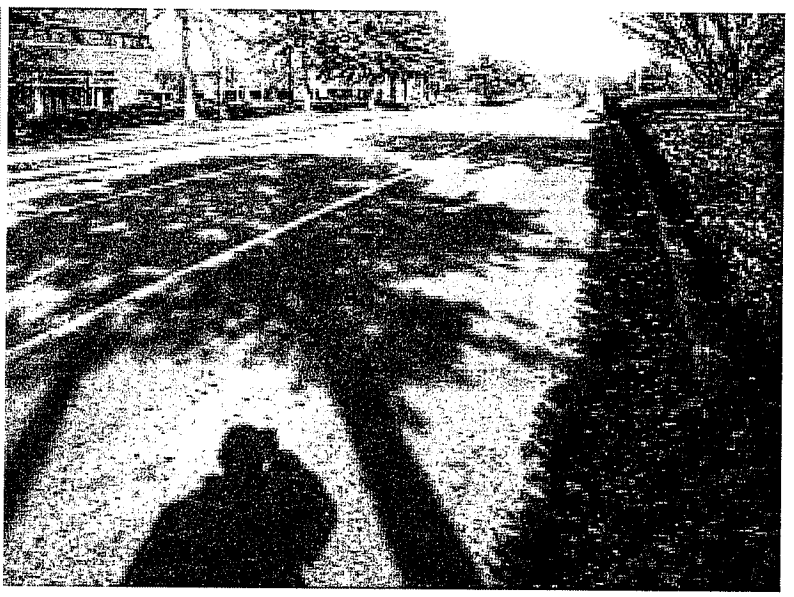
06.JPG



07.JPG

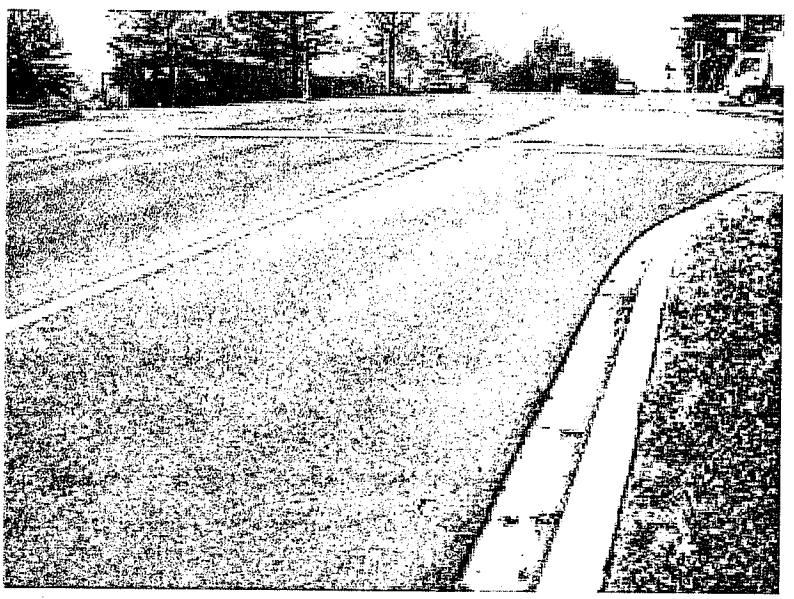
08.JPG

09.JPG

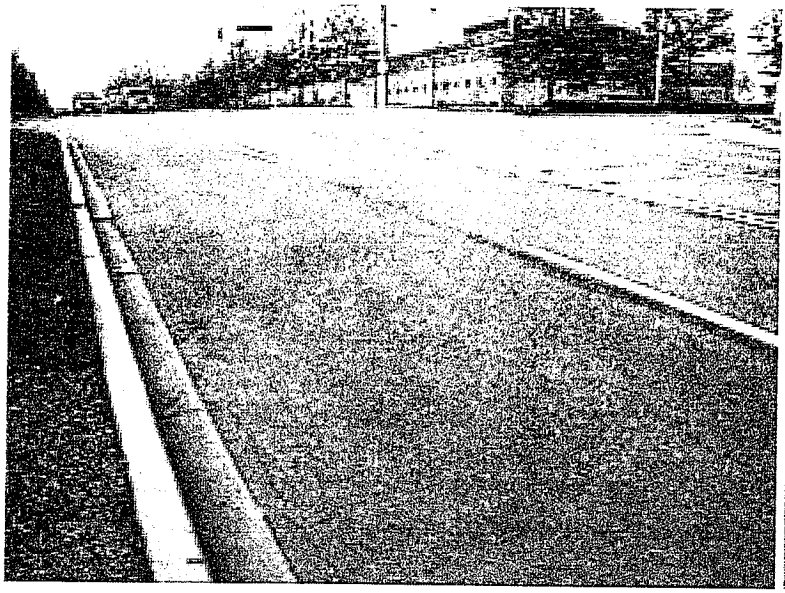


10.JPG

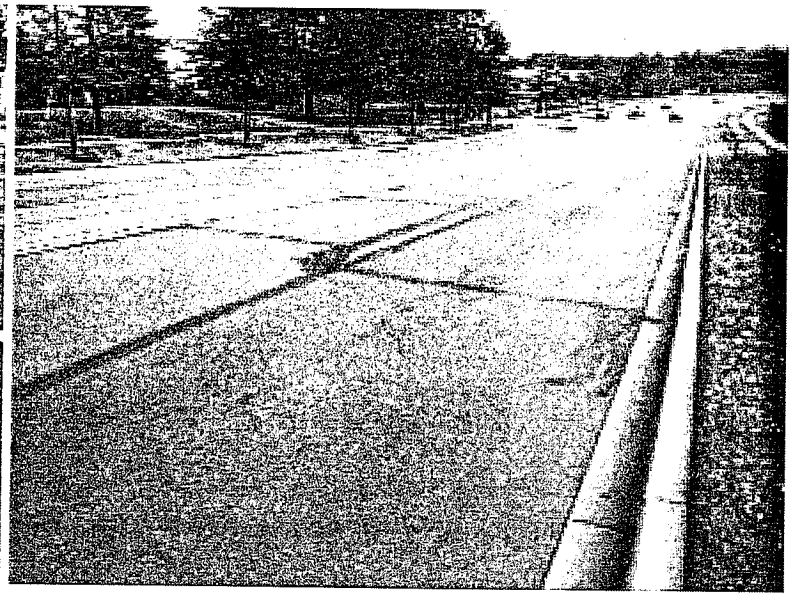
11.JPG



12.JPG

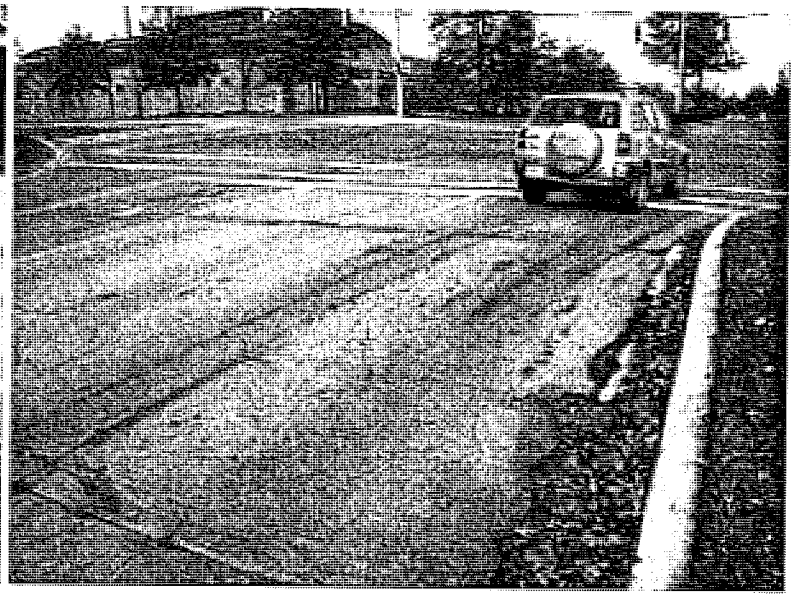


13.JPG

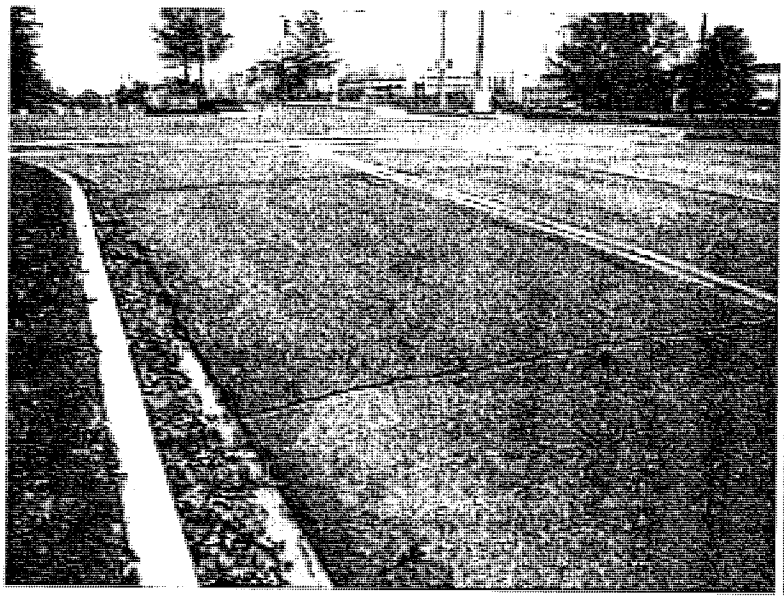


14.JPG

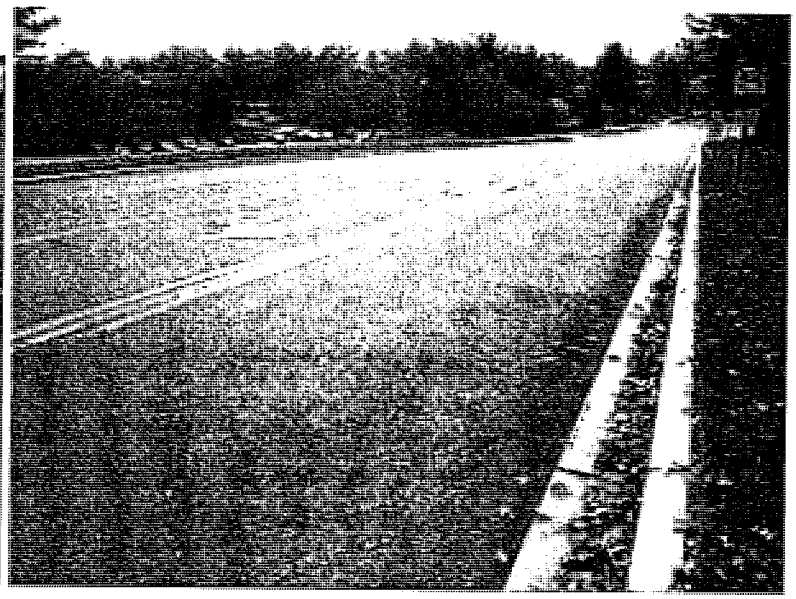
15.JPG



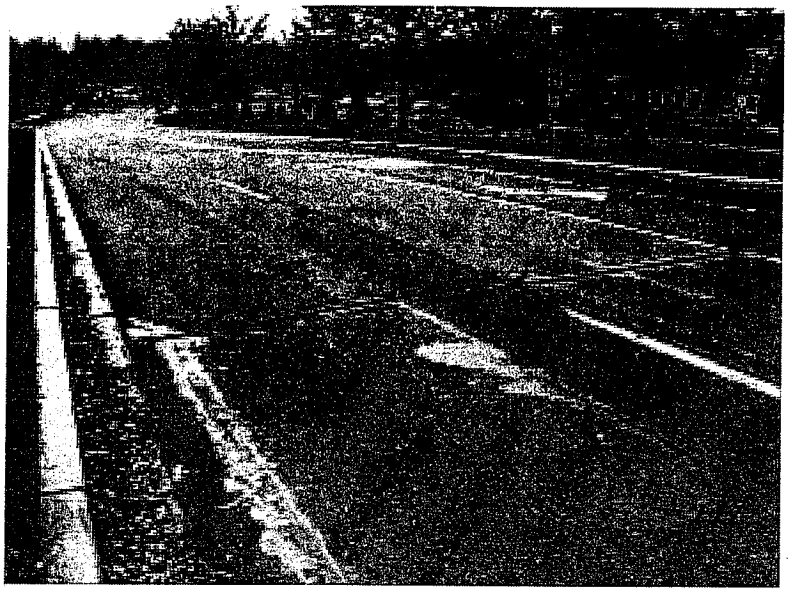
16.JPG



17.JPG



18.JPG



19.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: Firstfield Rd
Location: Montgomery Co., MD

Counted by: AN\NT
Date: December 4, 2008
Weather: Showers,Cold
Entered by: RB

Day: Thursday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Firstfield Rd					TRAFFIC FROM SOUTH on: Firstfield Rd					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	18	11	4	0	33	34	13	12	0	59	3	59	21	0	83	18	296	30	0	344	519
45-00	22	8	5	0	35	50	12	12	0	74	2	109	29	0	140	29	348	41	0	418	667
07:0-15	29	6	6	0	41	45	15	9	0	69	1	90	13	0	104	25	355	36	0	416	630
15-30	39	9	9	0	57	28	14	9	0	51	0	106	28	0	134	16	347	42	0	405	647
30-45	39	16	5	0	60	40	14	10	0	64	3	121	28	0	152	33	371	25	0	429	705
45-00	43	24	8	0	75	53	19	6	0	78	3	120	39	0	162	27	341	57	0	425	740
08:0-15	65	22	6	0	93	23	30	10	0	63	3	105	40	0	148	23	341	45	0	409	713
15-30	55	27	9	0	91	35	16	20	0	71	2	164	38	1	205	39	325	63	0	427	794
30-45	62	25	6	6	99	46	20	13	0	79	1	169	43	1	214	33	323	42	0	398	790
45-00	66	24	10	0	100	36	24	21	0	81	3	163	49	1	216	32	350	53	0	435	832
09:0-15	82	22	3	0	107	37	7	11	0	55	4	172	38	0	214	19	279	48	0	346	722
15-30	46	11	6	0	63	33	10	10	0	53	3	154	40	0	197	13	223	59	0	295	608
3 Hr Totals	566	205	77	6	854	460	194	143	0	797	28	1532	406	3	1969	307	3899	541	0	4747	7037
1 Hr Totals																					
630-730	108	34	24	0	166	157	54	42	0	253	6	364	91	0	461	88	1346	149	0	1583	2463
645-745	129	39	25	0	193	163	55	40	0	258	6	426	98	0	530	103	1421	144	0	1668	2649
07-08	150	55	28	0	233	166	62	34	0	262	7	437	108	0	552	101	1414	160	0	1675	2722
715-815	186	71	28	0	285	144	77	35	0	256	9	452	135	0	596	99	1400	169	0	1668	2805
730-830	202	89	28	0	319	151	79	46	0	276	11	510	145	1	667	122	1378	190	0	1690	2952
745-845	225	98	29	6	358	157	85	49	0	291	9	558	160	2	729	122	1330	207	0	1659	3037
08-09	248	98	31	6	383	140	90	64	0	294	9	601	170	3	783	127	1339	203	0	1669	3129
815-915	265	98	28	6	397	154	67	65	0	286	10	668	168	3	849	123	1277	206	0	1606	3138
830-930	256	82	25	6	369	152	61	55	0	268	11	658	170	2	841	97	1175	202	0	1474	2952
PEAK HOUR																					
815-915	265	98	28	6	397	154	67	65	0	286	10	668	168	3	849	123	1277	206	0	1606	3138
PM																					
04:0-15	70	10	2	0	82	19	41	51	0	111	6	268	43	1	318	13	200	46	0	259	770
15-30	78	11	8	0	97	35	26	24	0	85	3	283	51	1	338	19	189	38	0	246	766
30-45	75	18	2	0	95	60	26	39	1	126	7	331	44	0	382	13	203	40	0	256	859
45-00	66	19	1	0	86	57	21	39	1	118	5	293	52	0	350	12	220	51	0	283	837
05:0-15	83	16	6	0	105	40	21	36	1	98	4	307	52	0	363	13	227	44	0	284	850
15-30	89	19	3	0	111	38	26	38	1	103	1	322	53	0	376	14	192	46	0	252	842
30-45	96	9	2	0	107	34	33	34	0	101	3	336	44	0	383	14	178	38	0	230	821
45-00	86	21	8	0	115	35	20	40	1	96	4	296	50	0	350	12	167	36	0	215	776
06:0-15	87	11	2	0	100	22	27	27	0	76	7	299	47	0	353	9	193	26	0	228	757
15-30	82	18	5	0	105	12	25	27	0	64	7	269	60	0	336	10	175	33	0	218	723
30-45	73	19	8	1	101	29	24	29	0	82	5	271	46	0	322	6	165	41	0	212	717
45-00	63	15	3	0	81	17	13	20	0	50	2	265	46	1	314	12	134	44	0	190	635
3 Hr Totals	948	186	50	1	1185	398	303	404	5	1110	54	3540	588	3	4185	147	2243	483	0	2873	9353
1 Hr Totals																					
04-05	289	58	13	0	360	171	114	153	2	440	21	1175	190	2	1388	57	812	175	0	1044	3232
415-515	302	64	17	0	383	192	94	138	3	427	19	1214	199	1	1433	57	839	173	0	1069	3312
430-530	313	72	12	0	397	195	94	152	4	445	17	1253	201	0	1471	52	842	181	0	1075	3388
445-545	334	63	12	0	409	169	101	147	3	420	13	1258	201	0	1472	53	817	179	0	1049	3350
05-06	354	65	19	0	438	147	100	148	3	398	12	1261	199	0	1472	53	764	164	0	981	3289
515-615	358	60	15	0	433	129	106	139	2	376	15	1253	194	0	1462	49	730	146	0	925	3196
530-630	351	59	17	0	427	103	105	128	1	337	21	1200	201	0	1422	45	713	133	0	891	3077
545-645	328	69	23	1	421	98	96	123	1	318	23	1135	203	0	1361	37	700	136	0	873	2973
06-07	305	63	18	1	387	80	89	103	0	272	21	1104	199	1	1325	37	667	144	0	848	2832
PEAK HOUR																					
430-530	313	72	12	0	397	195	94	152	4	445	17	1253	201	0	1471	52	842	181	0	1075	3388

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: Firstfield Rd
Location: Montgomery Co., MD

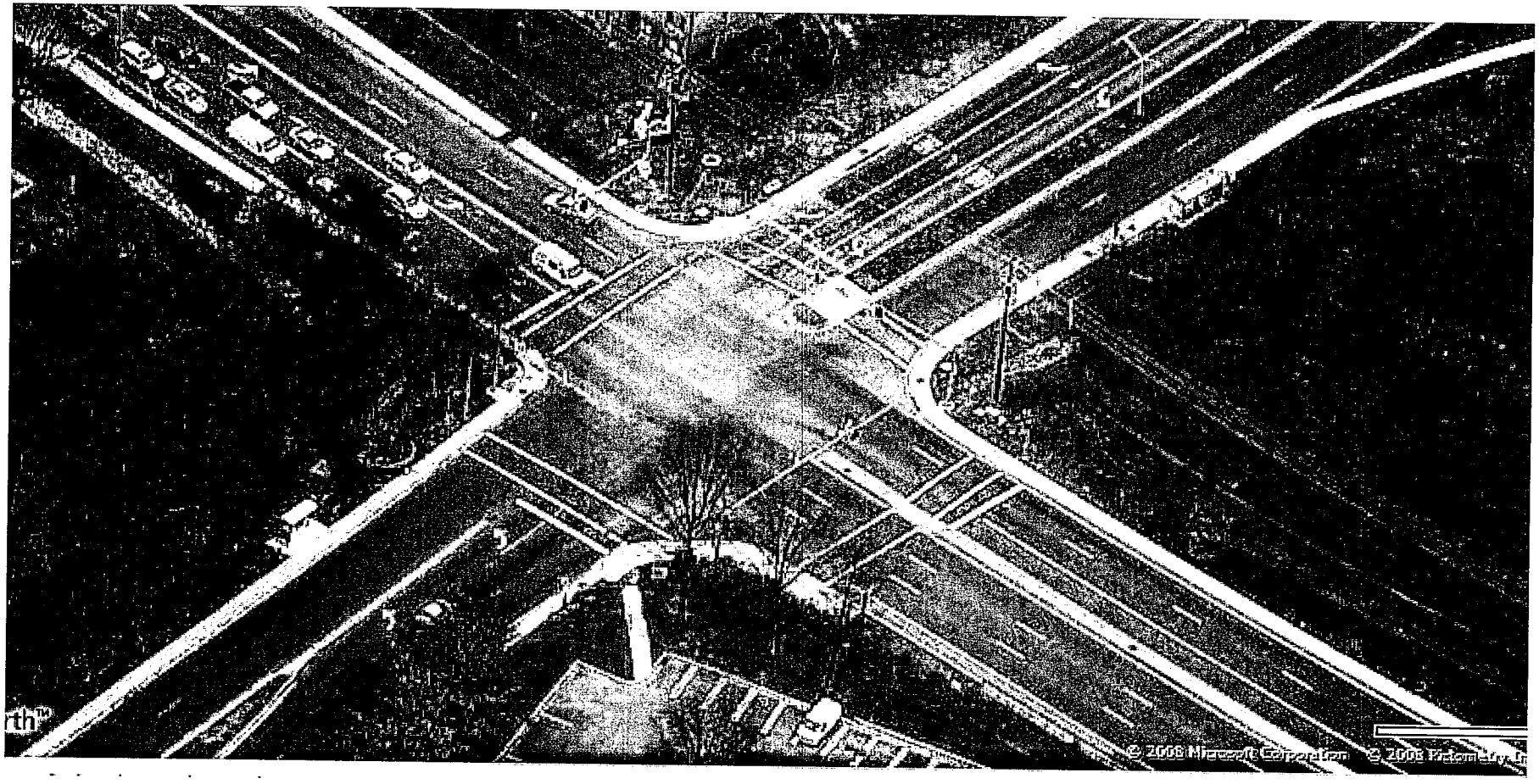
Counted by: AN\NT
Date: December 4, 2008
Weather: Showers,Cold
Entered by: RB

Day: Thursday

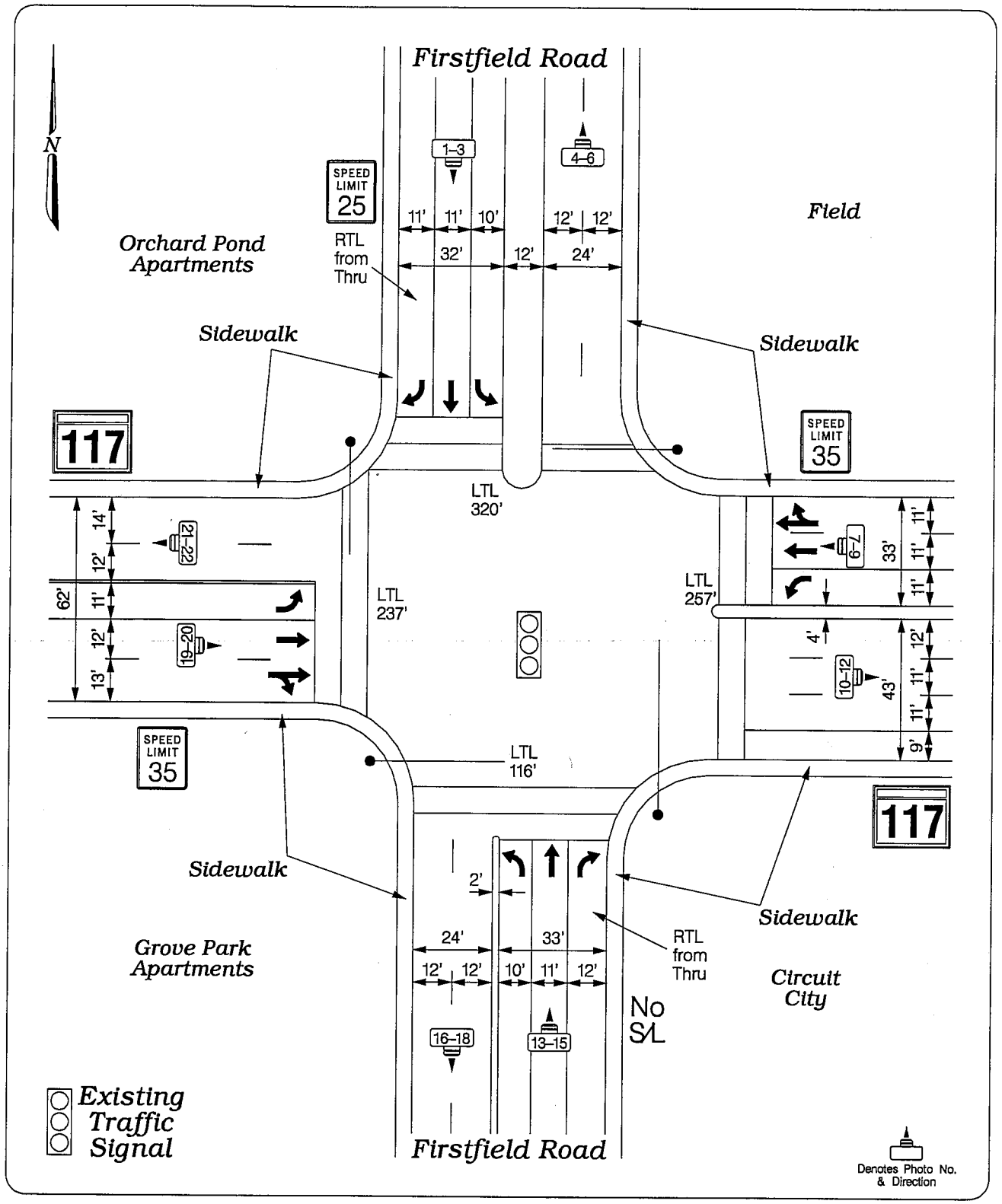
The Traffic Group

TIME	Firstfield Rd NORTH LEG				Firstfield Rd SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	2	0	0	0	1	0	0	0
15-30	3	0	2	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	3	0	1	0	1	0	0	0
08:0-15	2	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	1	0	1	0	2	0	0	0
09:0-15	0	0	0	0	2	0	0	0
15-30	5	0	0	0	0	0	0	0
TOTALS	18	0	4	0	7	0	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	3	0	0	0	4	0	1	0
30-45	3	0	0	0	4	0	0	0
45-00	0	0	0	0	3	1	0	0
05:0-15	0	0	0	0	7	0	3	0
15-30	0	0	0	0	4	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	1	0	0	0	0	1	0	0
06:0-15	2	0	0	0	0	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	1	1	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	12	1	0	0	25	2	4	0

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	6	0	1	0
07:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	9	0	1	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	2	0	0	0
08:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	3	0	0	0
45-00	0	0	0	0	2	0	0	0
09:0-15	0	0	0	0	3	0	1	0
15-30	0	0	0	0	3	0	0	0
TOTALS	1	0	0	0	30	0	3	0
PM								
04:0-15	0	0	0	0	3	0	0	0
15-30	2	0	0	0	5	1	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	4	0	0	0
05:0-15	0	0	0	0	8	0	2	0
15-30	0	0	0	0	5	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	1	1	0	0
06:0-15	0	0	0	0	2	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	7	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	2	0	0	0	39	2	2	0



#6 MD 117 & Firstfield Rd

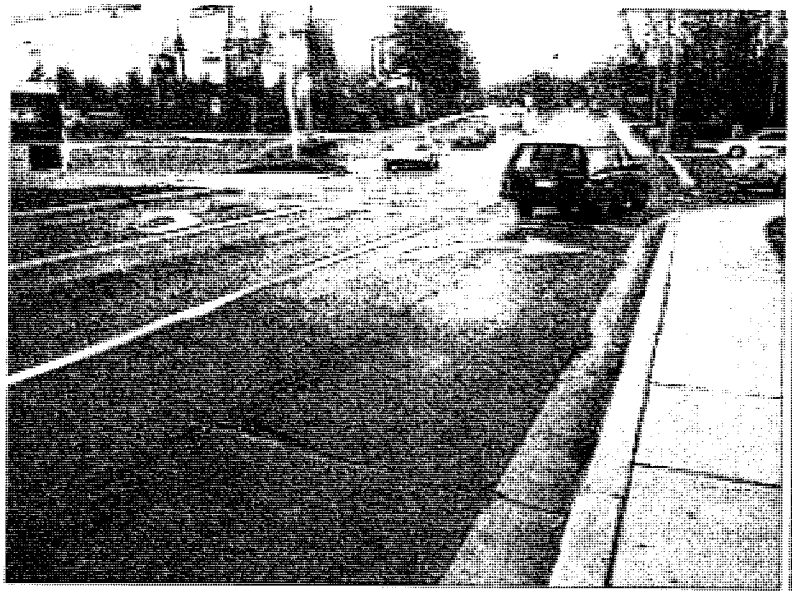


The Traffic Group

MD 117 @ Firstfield Road

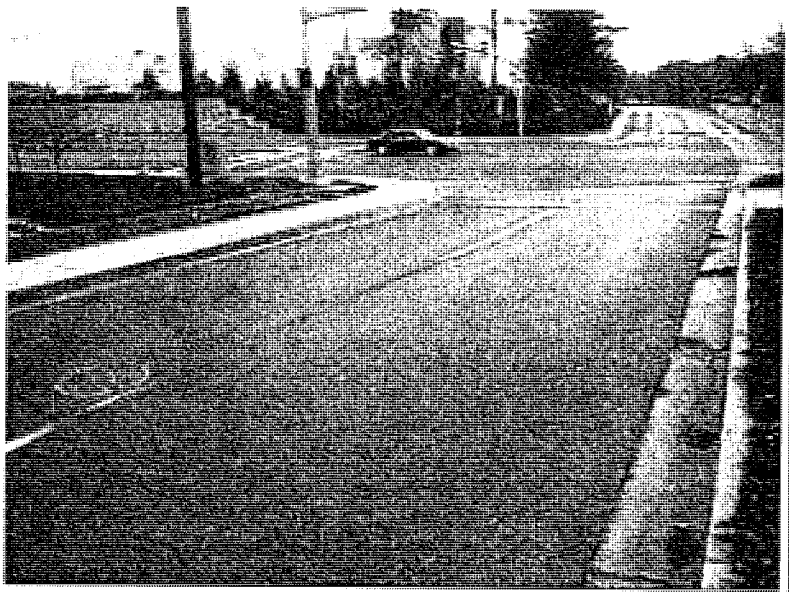
FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: MD 117@Firstfield Rood.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 6 OF 10



01.JPG

02.JPG



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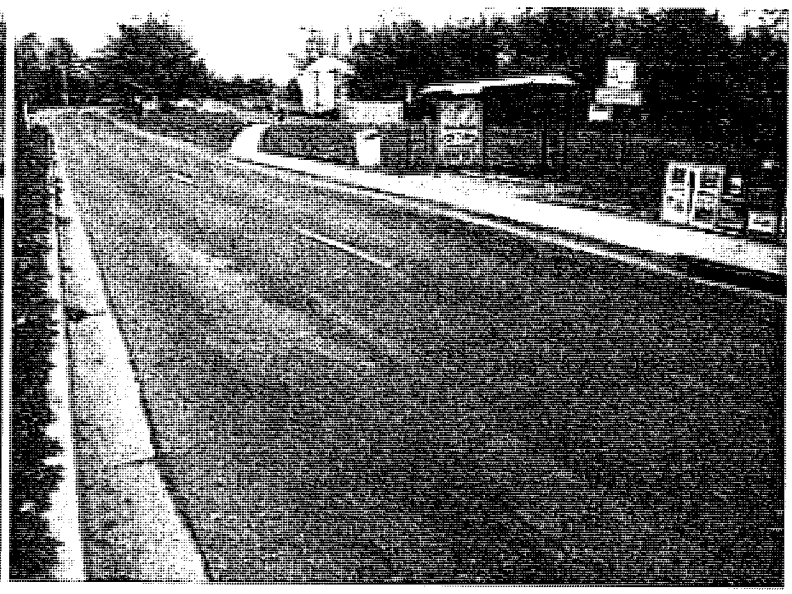

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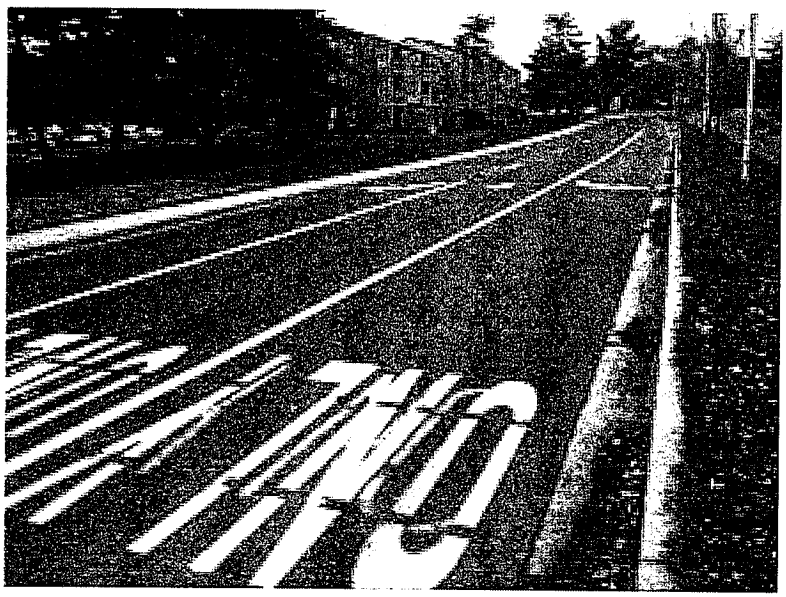

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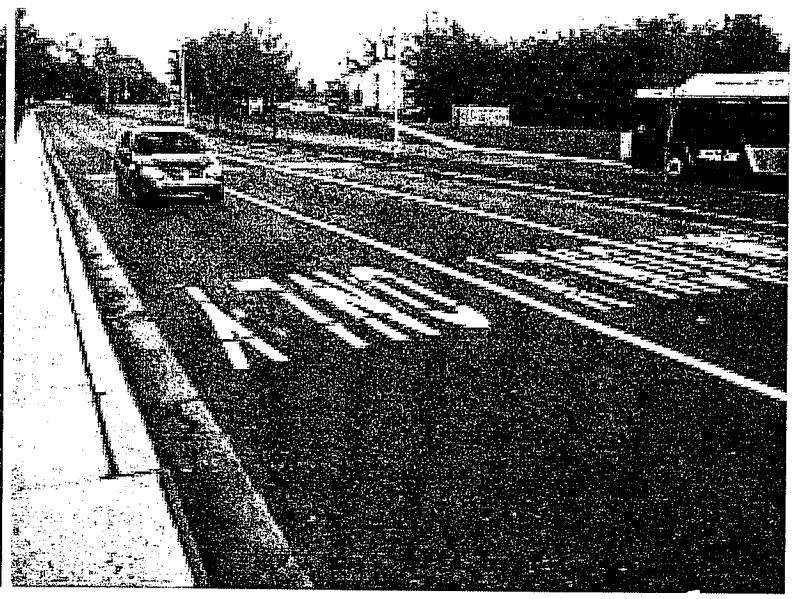
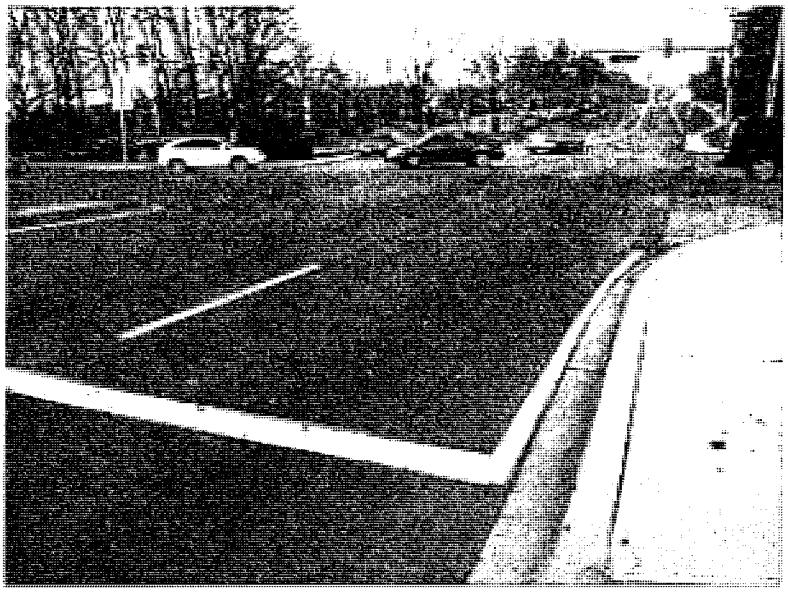
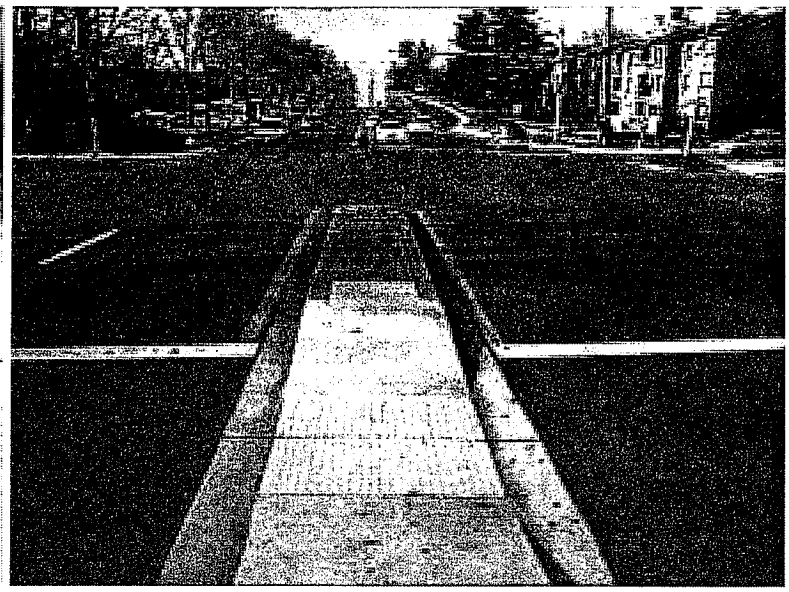


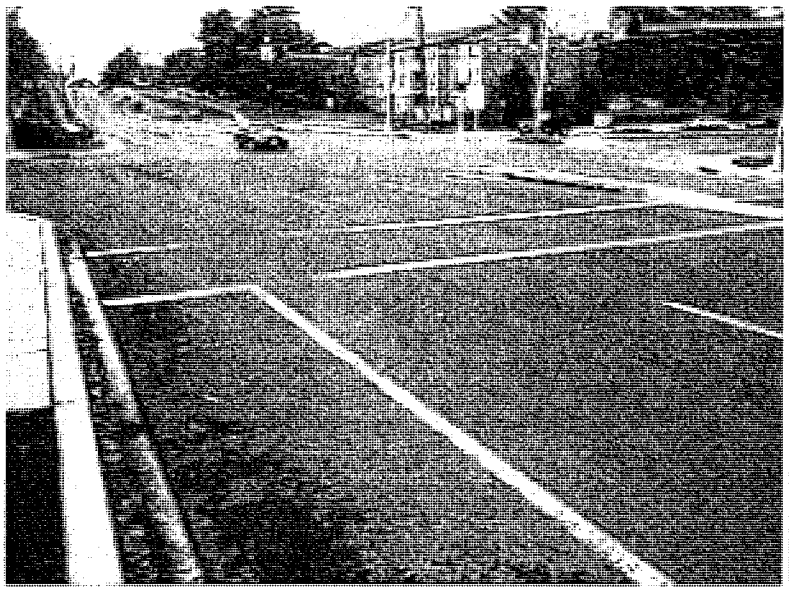
06.JPG



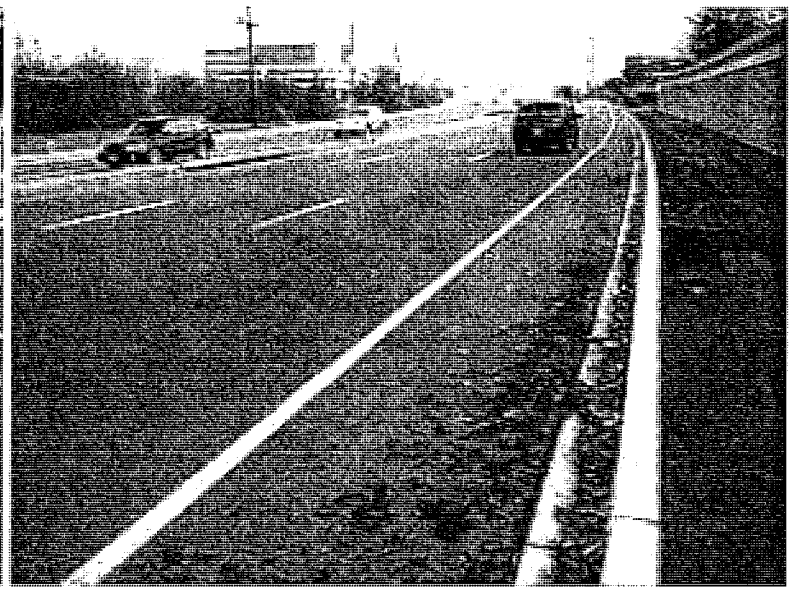
07.JPG



08.JPG



09.JPG



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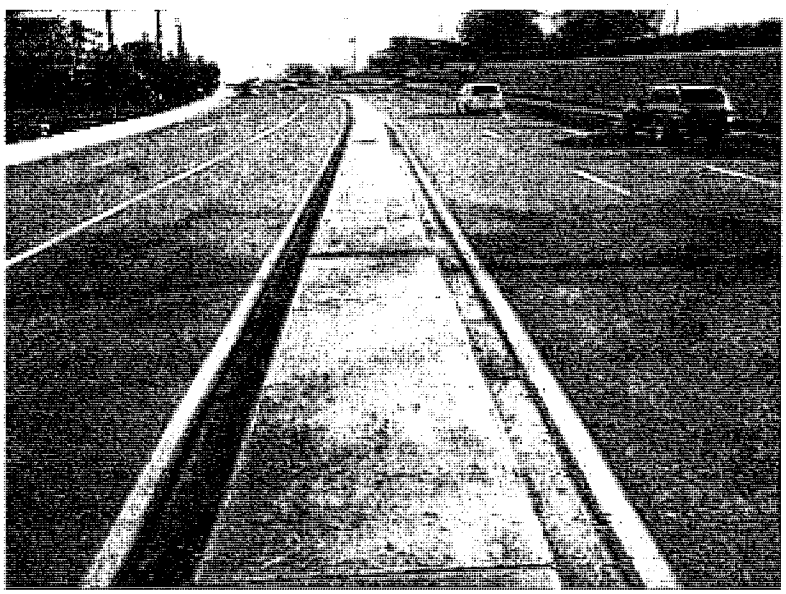

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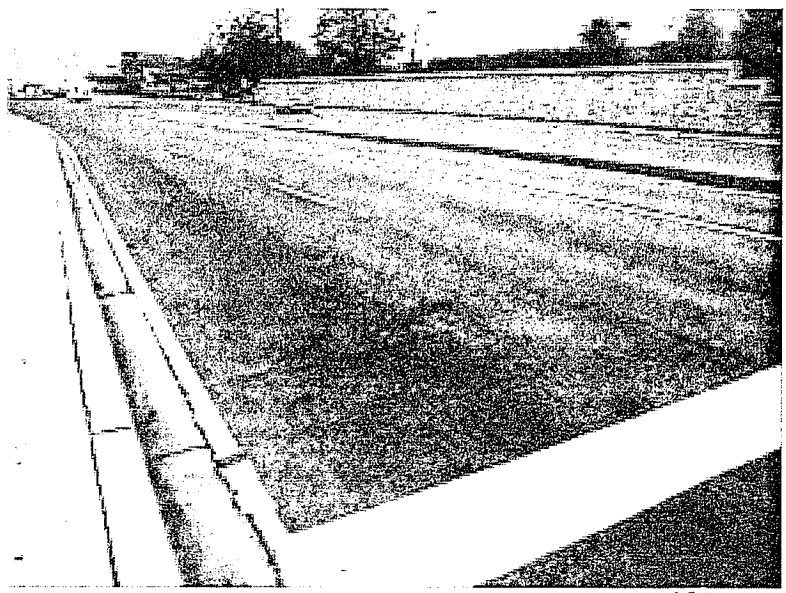
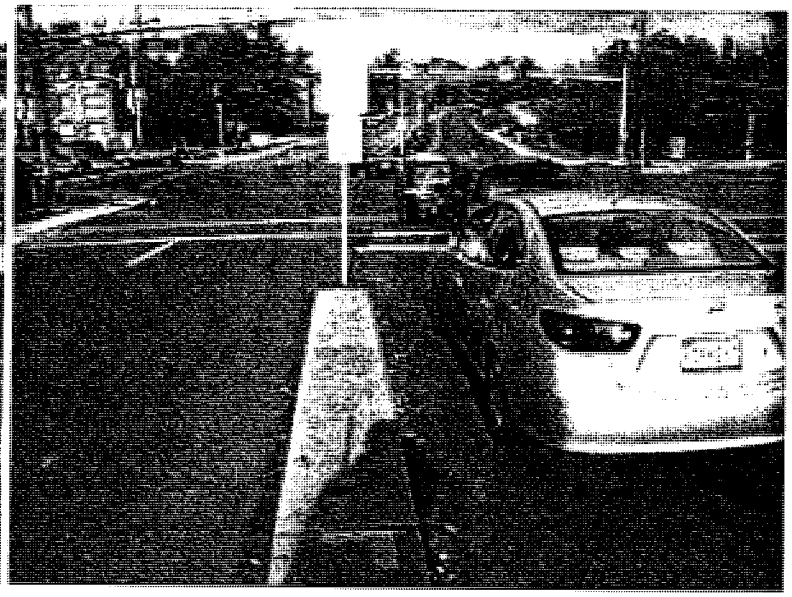
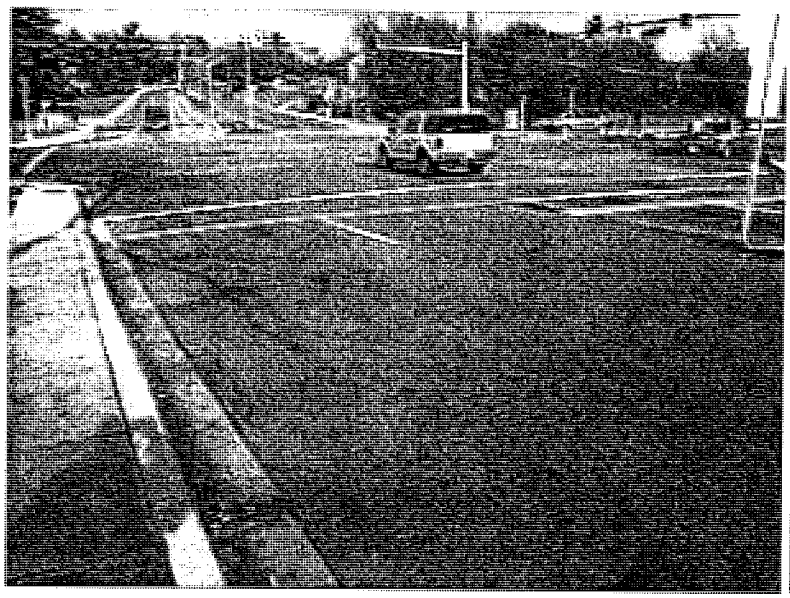


12.JPG

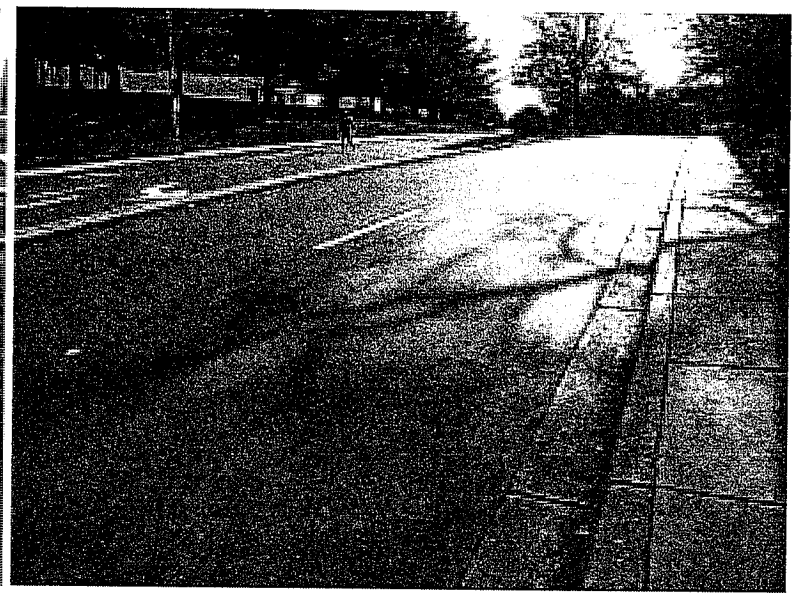
13.JPG



14.JPG



15.JPG



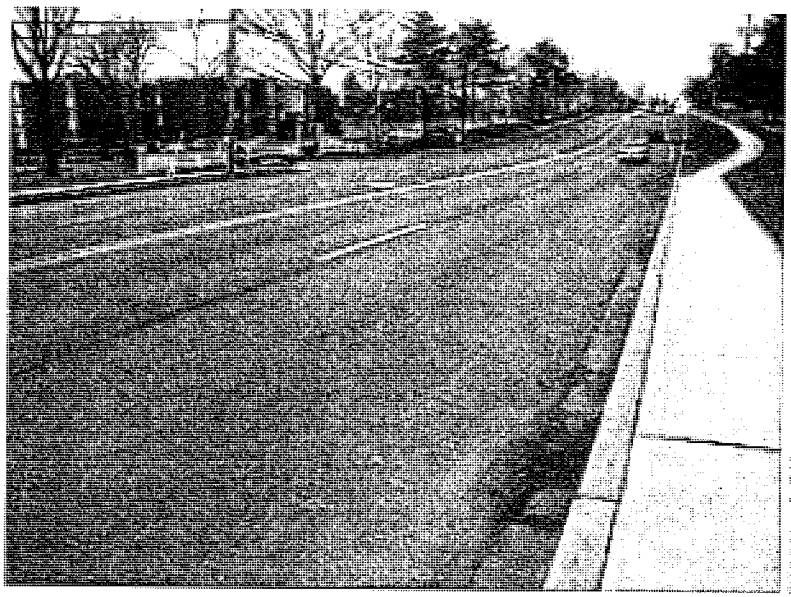
16.JPG

17.JPG

18.JPG

19.JPG

20.JPG



21.JPG

22.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: MD 124
Location: Montgomery Co., MD

Counted by: JC\SS
Date: December 4, 2008
Weather: Showers, Cool
Entered by: RB

Day: Thursday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: MD 124					TRAFFIC FROM SOUTH on: MD 124					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	30	95	36	0	161	79	61	1	0	141	23	59	30	0	112	7	302	15	1	325	739
45-00	23	118	61	0	202	65	82	5	0	152	20	116	49	0	185	6	345	20	0	371	910
07:0-15	25	116	61	0	202	81	100	4	0	185	19	84	43	1	147	11	402	12	0	425	959
15-30	27	134	66	0	227	113	86	11	0	210	23	94	48	0	165	12	358	16	1	387	989
30-45	24	135	68	0	227	112	101	6	0	219	21	119	64	0	204	9	399	24	0	432	1082
45-00	27	181	52	0	260	93	124	9	0	226	33	133	57	0	223	10	407	28	0	445	1154
08:0-15	32	172	43	0	247	91	114	4	0	209	33	122	66	0	221	14	386	35	1	436	1113
15-30	43	213	55	0	311	97	105	6	0	208	23	149	75	0	247	12	372	30	0	414	1180
30-45	43	214	43	0	300	106	118	5	0	229	33	168	85	0	286	26	340	28	0	394	1209
45-00	44	214	31	0	289	125	128	2	0	255	35	165	77	0	277	17	385	26	0	428	1249
09:0-15	41	209	44	0	294	121	116	8	0	245	33	177	74	0	284	18	300	35	0	353	1176
15-30	43	167	46	0	256	114	127	6	0	247	32	138	60	0	230	14	280	27	1	322	1055
3 Hr Totals	402	1968	606	0	2976	1197	1262	67	0	2526	328	1524	728	1	2581	156	4276	296	4	4732	10584
1 Hr Totals																					
630-730	105	463	224	0	792	338	329	21	0	688	85	353	170	1	609	36	1407	63	2	1508	3597
645-745	99	503	256	0	858	371	369	26	0	766	83	413	204	1	701	38	1504	72	1	1615	3940
07-08	103	566	247	0	916	399	411	30	0	840	96	430	212	1	739	42	1566	80	1	1689	4184
715-815	110	622	229	0	961	409	425	30	0	864	110	468	235	0	813	45	1550	103	2	1700	4338
730-830	126	701	218	0	1045	393	444	25	0	862	110	523	262	0	895	45	1564	117	1	1727	4529
745-845	145	780	193	0	1118	387	461	24	0	872	122	572	283	0	977	62	1505	121	1	1689	4656
08-09	162	813	172	0	1147	419	465	17	0	901	124	604	303	0	1031	69	1483	119	1	1672	4751
815-915	171	850	173	0	1194	449	467	21	0	937	124	659	311	0	1094	73	1397	119	0	1589	4814
830-930	171	804	164	0	1139	466	489	21	0	976	133	648	296	0	1077	75	1305	116	1	1497	4689
PEAK HOUR																					
815-915	171	850	173	0	1194	449	467	21	0	937	124	659	311	0	1094	73	1397	119	0	1589	4814
PM																					
04:0-15	39	141	38	0	218	102	187	17	0	306	54	260	114	0	428	14	189	47	0	250	1202
15-30	47	156	33	0	236	85	179	6	0	270	50	294	96	0	440	10	191	59	0	260	1206
30-45	34	155	31	0	220	77	145	17	0	239	44	321	133	1	499	9	225	54	2	290	1248
45-00	38	161	38	0	237	117	172	14	0	303	42	291	126	1	460	15	232	58	0	305	1305
05:0-15	44	184	46	0	274	120	184	14	0	318	51	298	107	1	457	11	233	47	0	291	1340
15-30	47	203	39	0	289	116	164	15	0	295	50	324	125	0	499	12	224	49	0	285	1368
30-45	61	187	31	0	279	107	140	15	0	262	47	323	129	0	499	7	199	43	0	249	1289
45-00	53	198	37	0	288	120	110	10	0	240	36	286	109	0	431	7	207	35	0	249	1208
06:0-15	51	160	43	0	254	118	154	12	0	284	35	293	117	0	445	10	186	60	0	256	1239
15-30	44	148	37	0	229	90	122	13	0	225	38	290	122	0	450	19	175	60	3	257	1161
30-45	45	144	28	0	217	85	139	5	1	230	54	293	126	1	474	14	164	50	1	229	1150
45-00	48	142	36	0	226	69	125	5	0	199	42	277	98	1	418	12	170	47	0	229	1072
3 Hr Totals	551	1979	437	0	2967	1206	1821	143	1	3171	543	3550	1402	5	5500	140	2395	609	6	3150	14788
1 Hr Totals																					
04-05	158	613	140	0	911	381	683	54	0	1118	190	1166	469	2	1827	48	837	218	2	1105	4961
415-515	163	656	148	0	967	399	680	51	0	1130	187	1204	462	3	1856	45	881	218	2	1146	5099
430-530	163	703	154	0	1020	430	665	60	0	1155	187	1234	491	3	1915	47	914	208	2	1171	5261
445-545	190	735	154	0	1079	460	660	58	0	1178	190	1236	487	2	1915	45	888	197	0	1130	5302
05-06	205	772	153	0	1130	463	598	54	0	1115	184	1231	470	1	1886	37	863	174	0	1074	5205
515-615	212	748	150	0	1110	461	568	52	0	1081	168	1226	480	0	1874	36	816	187	0	1039	5104
530-630	209	693	148	0	1050	435	526	50	0	1011	156	1192	477	0	1825	43	767	198	3	1011	4897
545-645	193	650	145	0	988	413	525	40	1	979	163	1162	474	1	1800	50	732	205	4	991	4758
06-07	188	594	144	0	926	362	540	35	1	938	169	1153	463	2	1787	55	695	217	4	971	4622
PEAK HOUR																					
445-545	190	735	154	0	1079	460	660	58	0	1178	190	1236	487	2	1915	45	888	197	0	1130	5302

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: MD 124
Location: Montgomery Co., MD

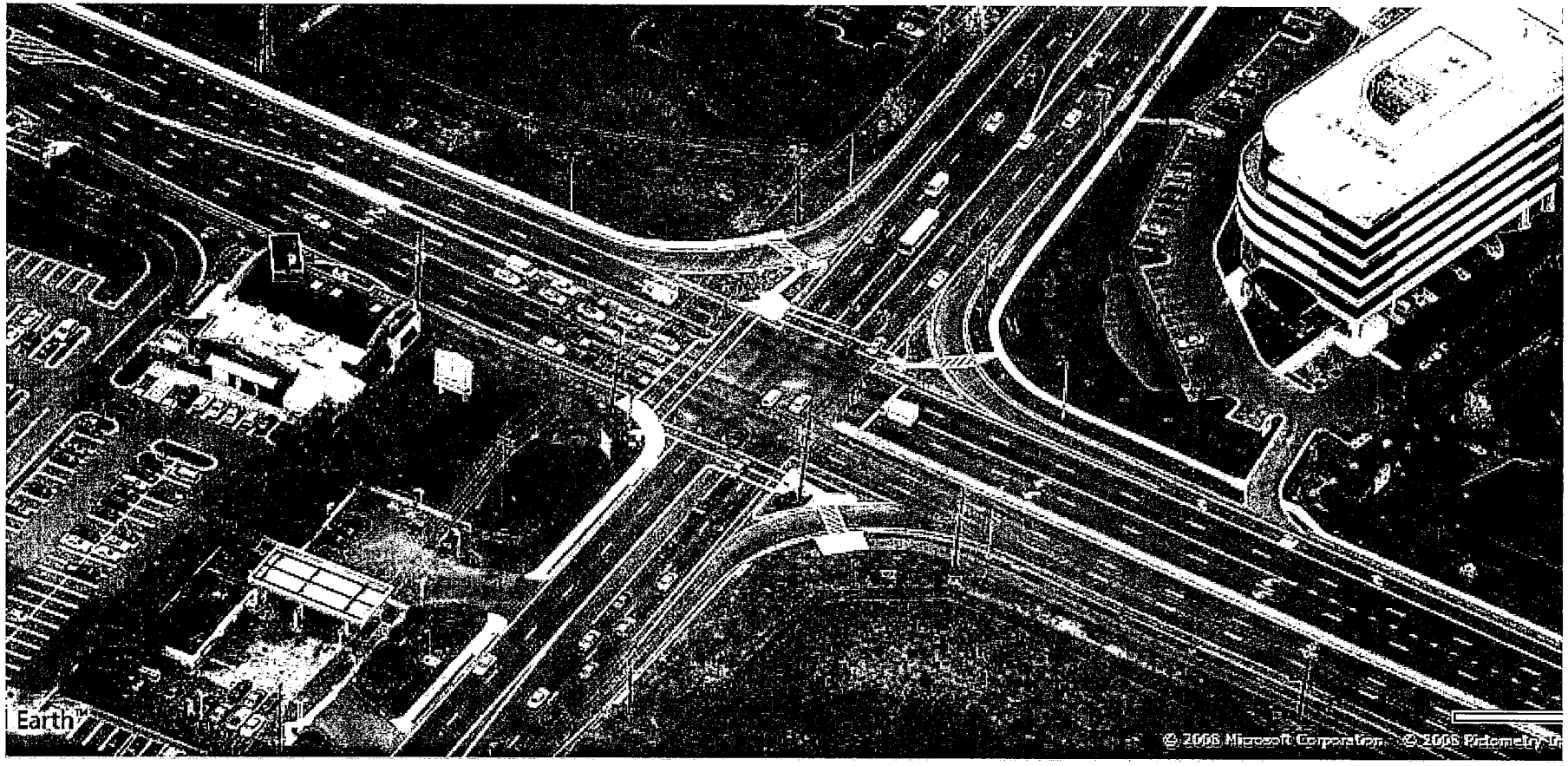
Counted by: JC\SS
Date: December 4, 2008
Weather: Showers, Cool
Entered by: RB

Day: Thursday

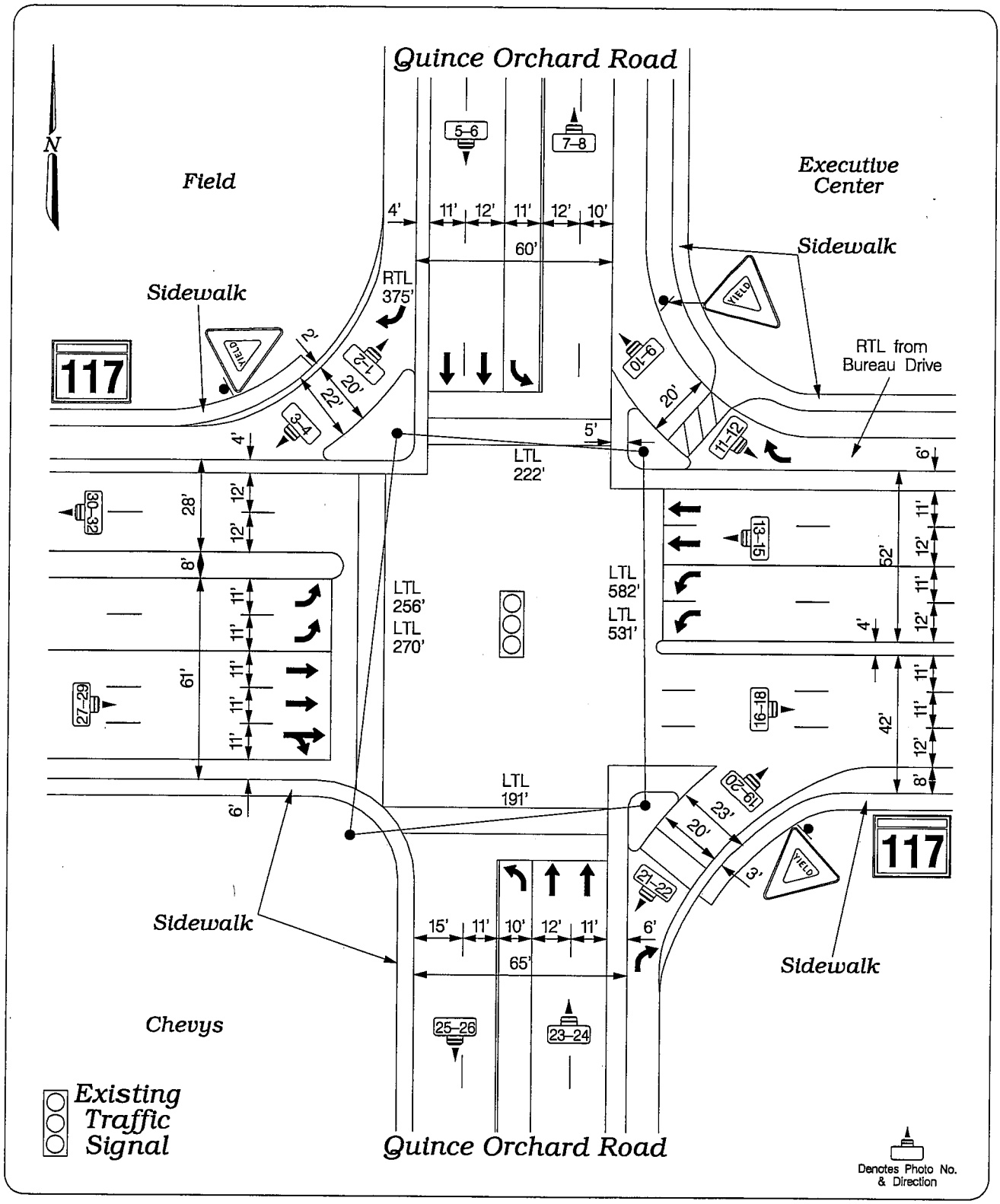
The Traffic Group

TIME	MD 124 NORTH LEG				MD 124 SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	1	0	0	0	0	0	0
45-00	0	0	0	0	1	1	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	2	0	0	0
30-45	1	0	0	0	0	1	0	0
45-00	0	0	0	0	1	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	2	0	0	0
09:0-15	1	0	0	0	5	0	0	0
15-30	1	0	0	0	0	1	0	0
TOTALS	3	1	0	0	11	3	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	0	2	0	0
45-00	3	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	6	0	0	0
30-45	3	0	0	0	0	1	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	1	0	0	0	2	1	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	1	0	0	0
TOTALS	9	0	0	0	9	4	0	0

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	1	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
TOTALS	1	0	0	0	2	1	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	2	0	0	0



#7 MD 117 & MD 124

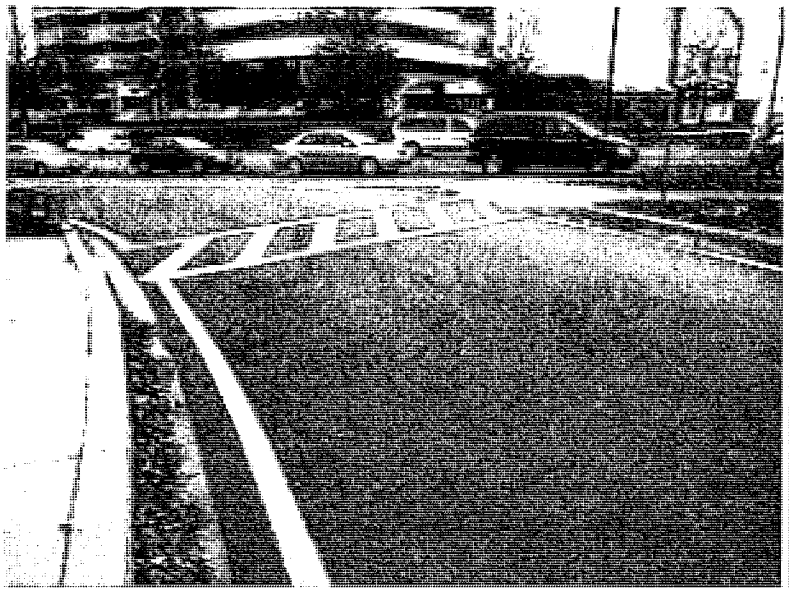


The Traffic Group

MD 117 @ Quince Orchard Road

FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: MD 117@Quince Orchard Rood.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 9 OF 10



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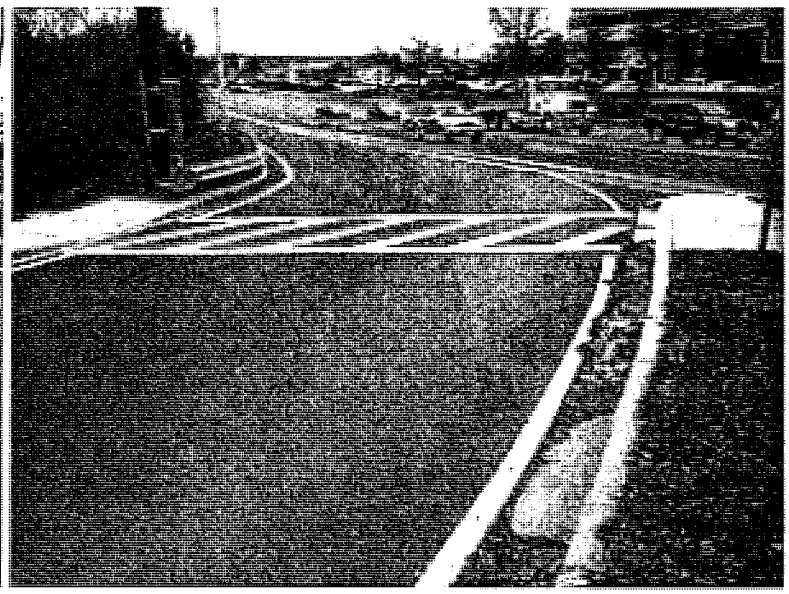

02.JPG

03.JPG

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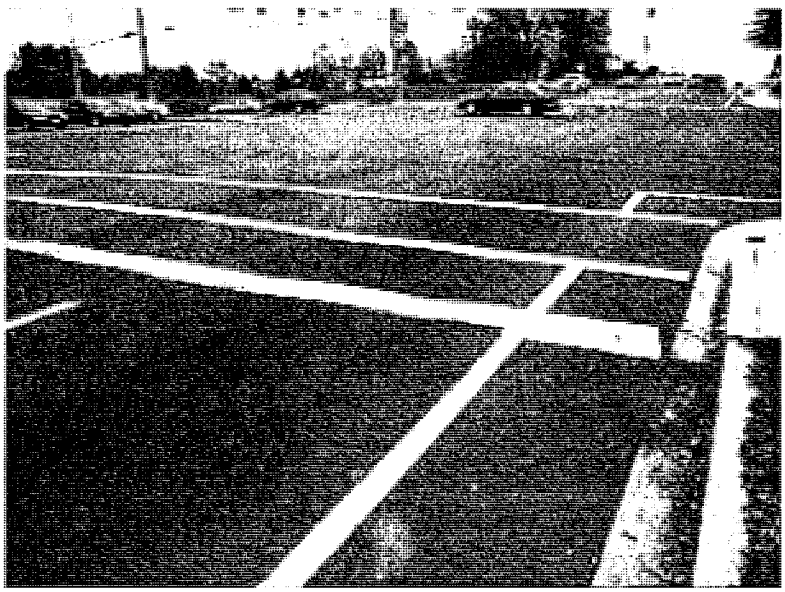

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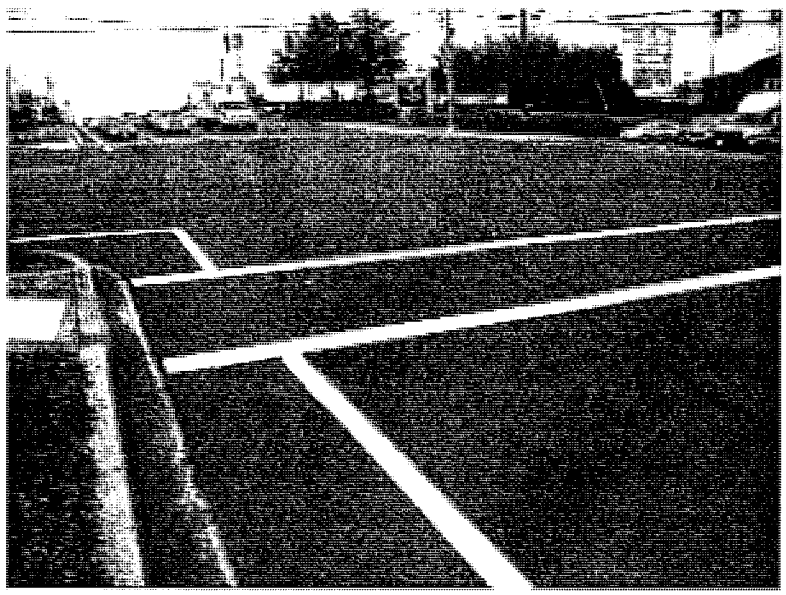

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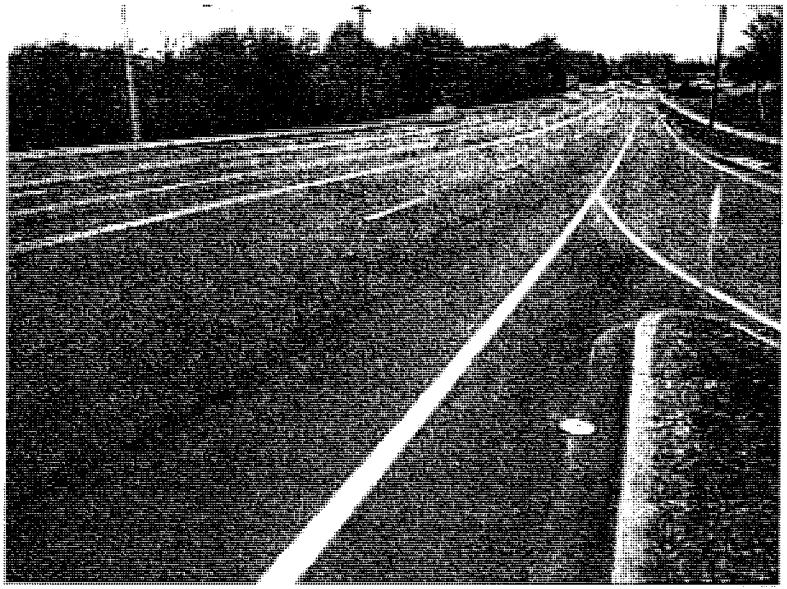

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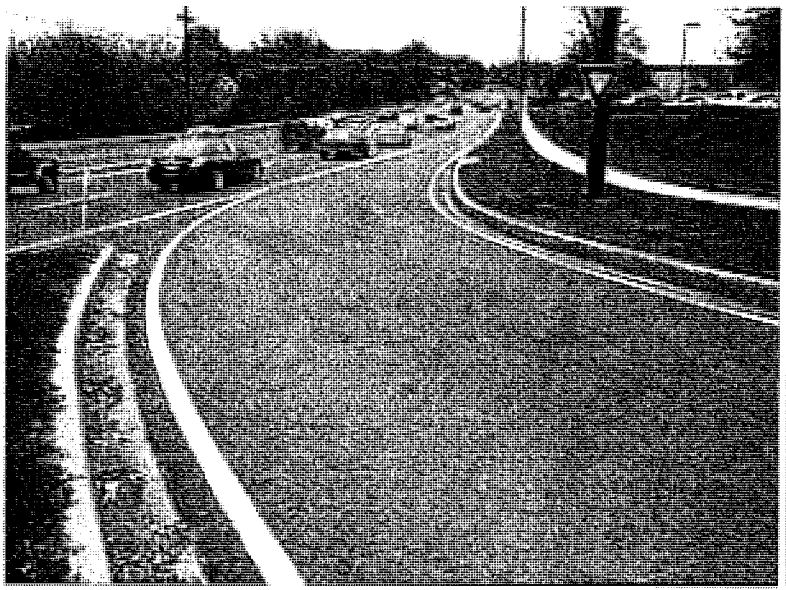

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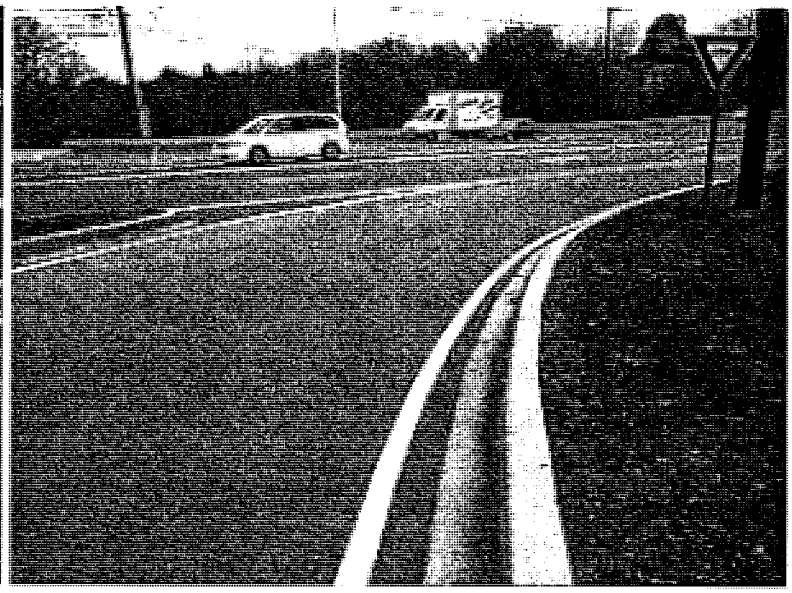

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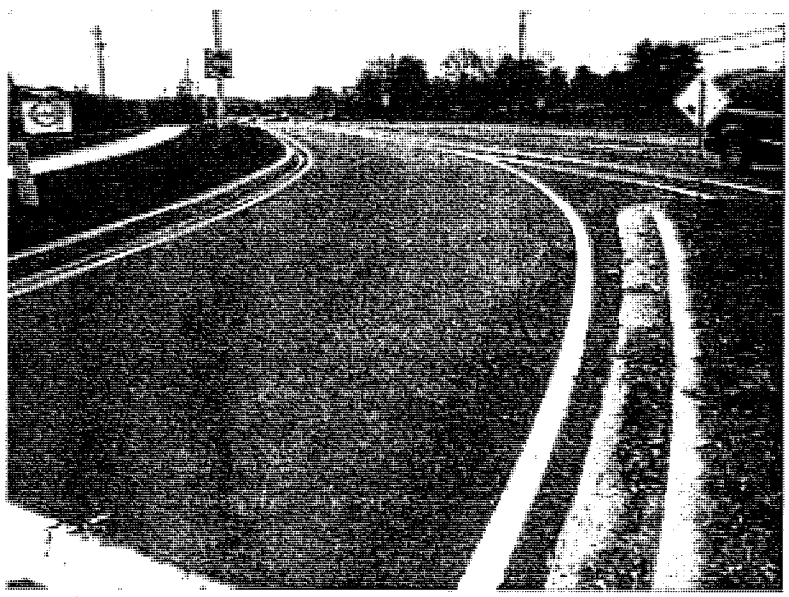
11.JPG



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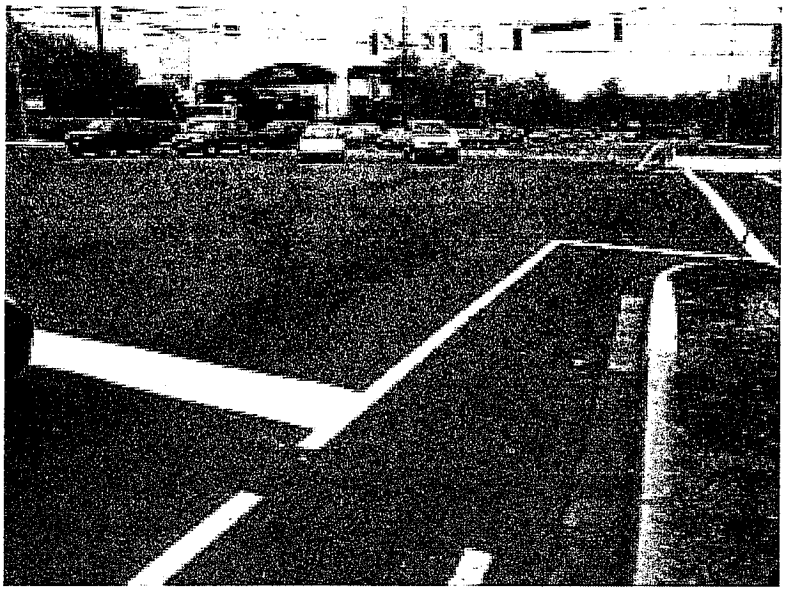

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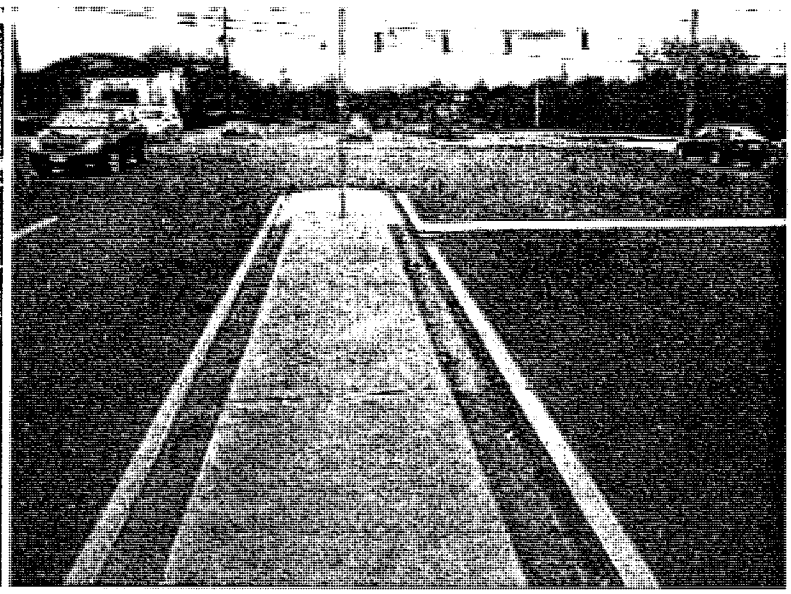

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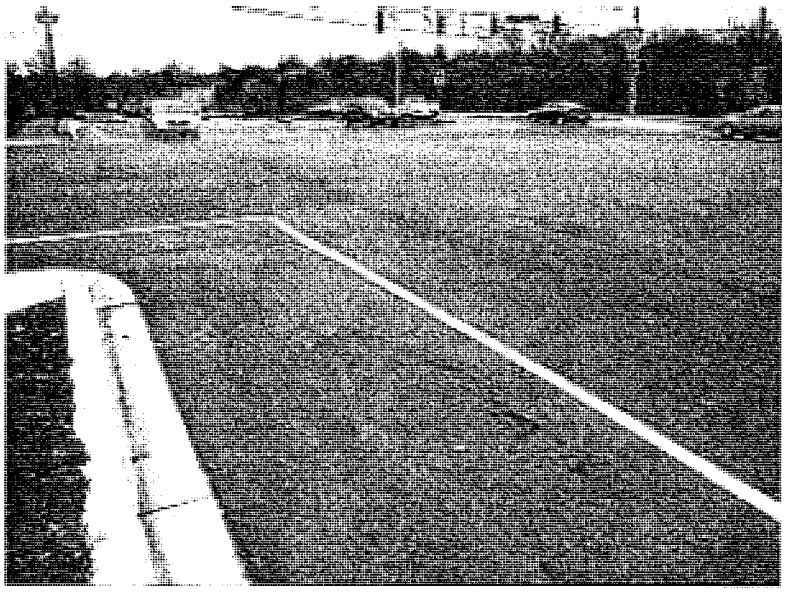

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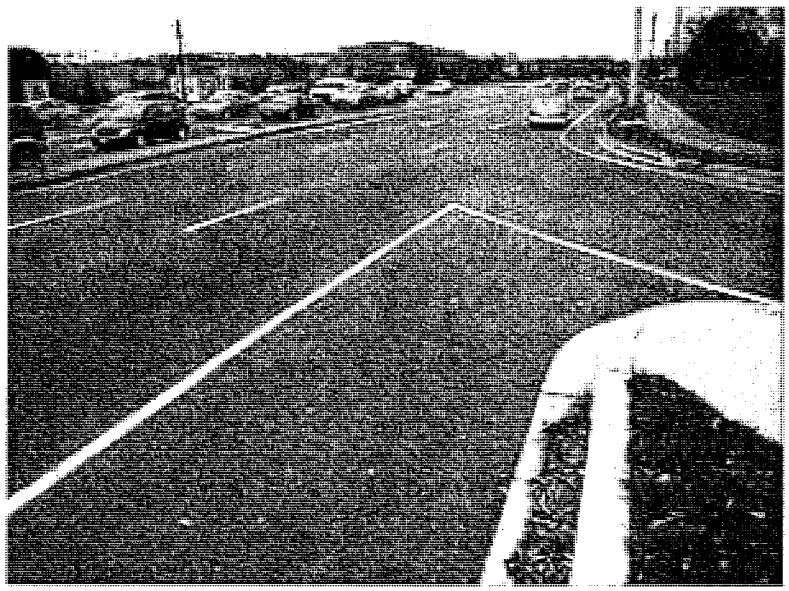

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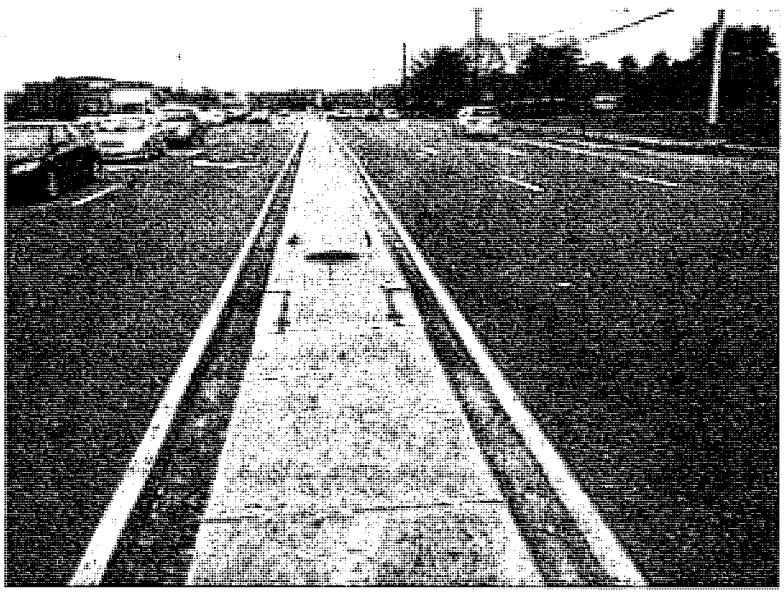

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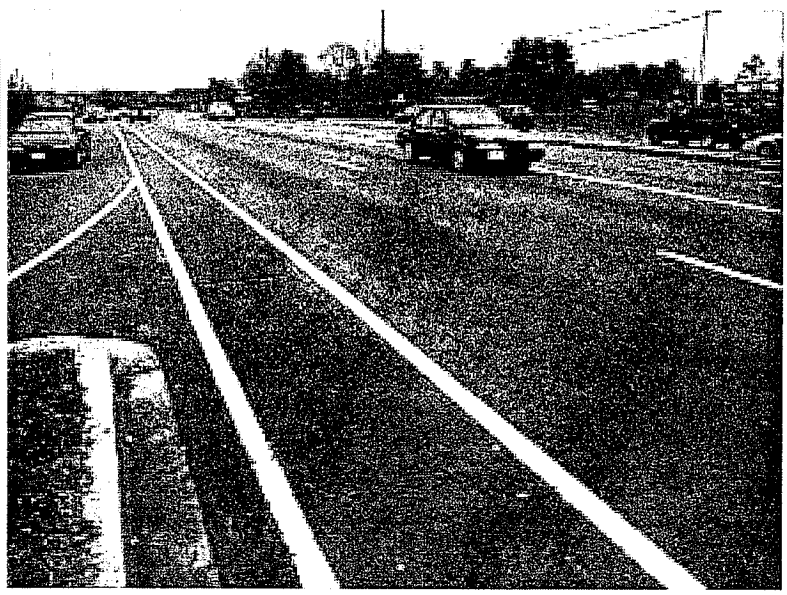

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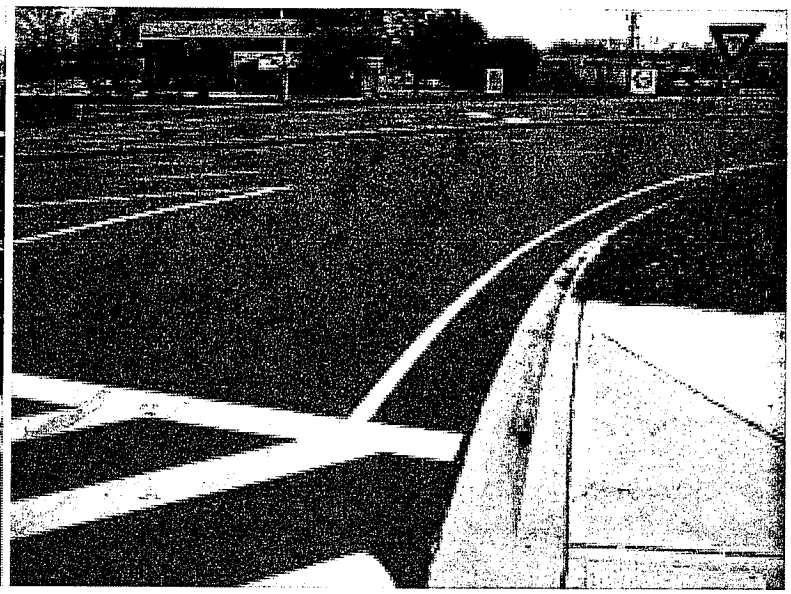

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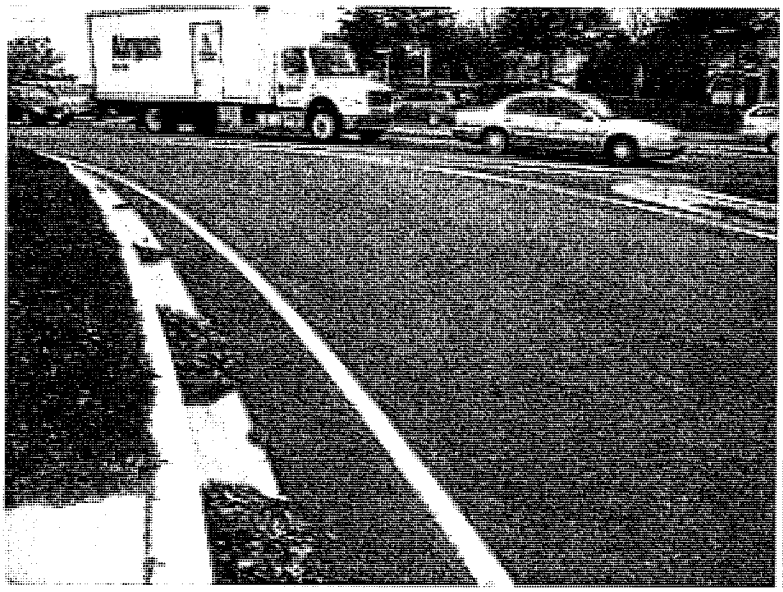

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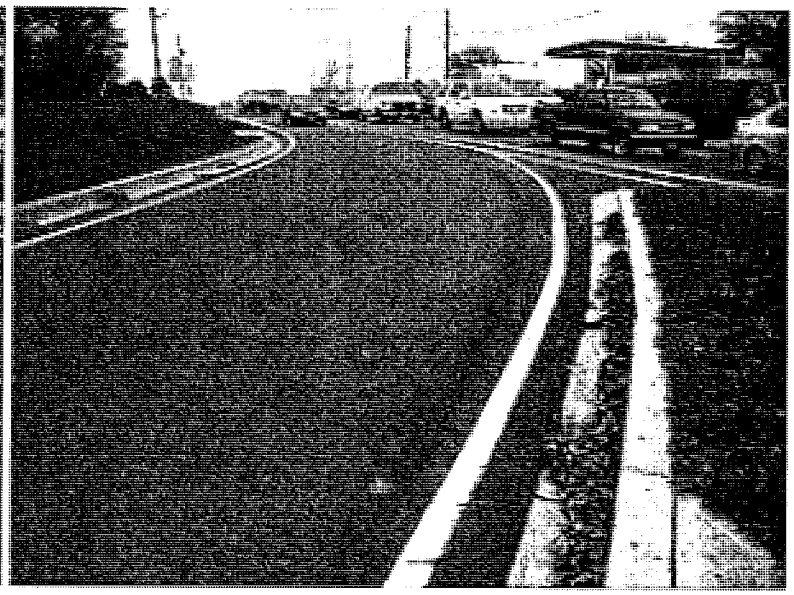

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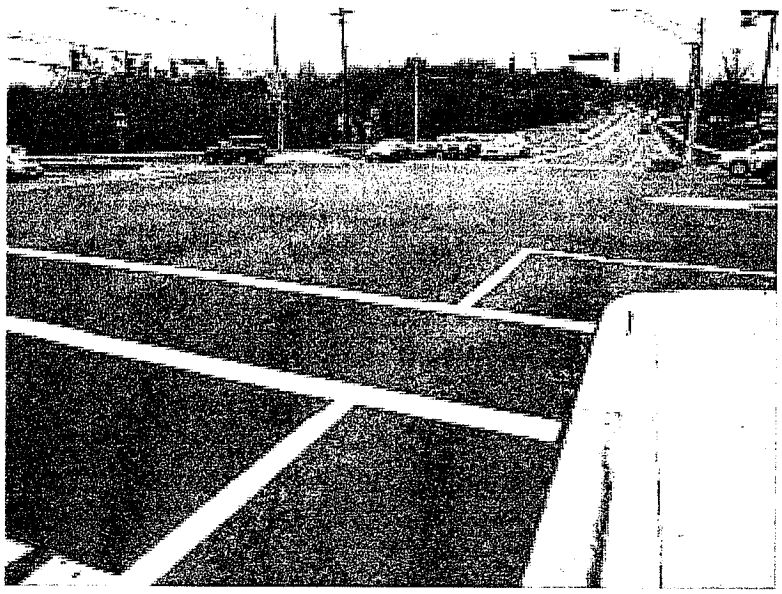

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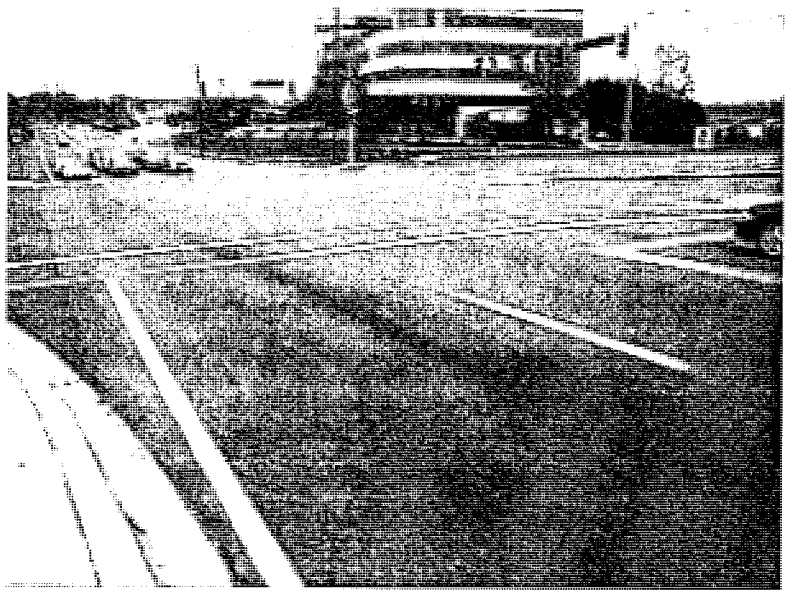

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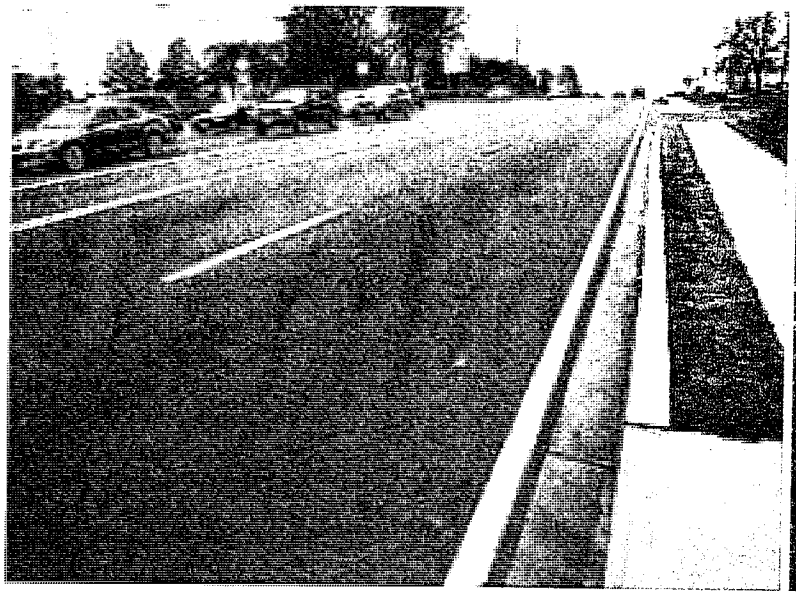

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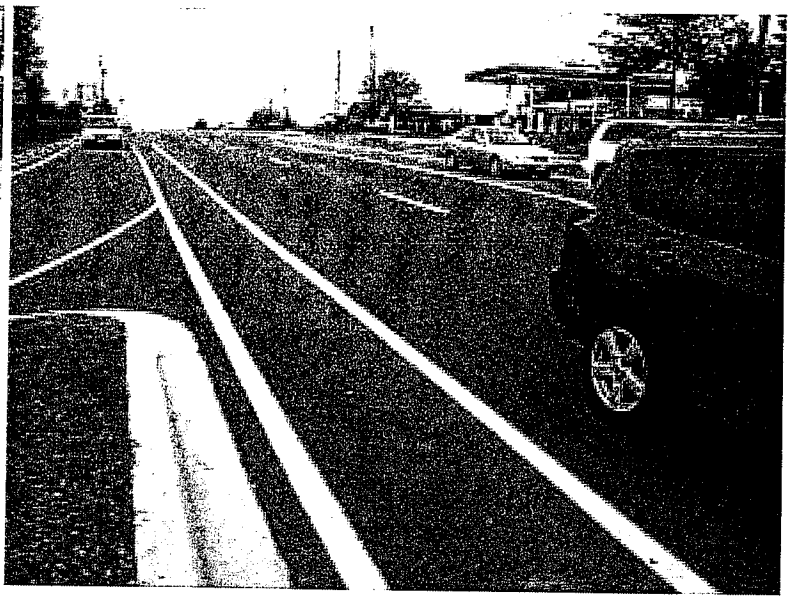

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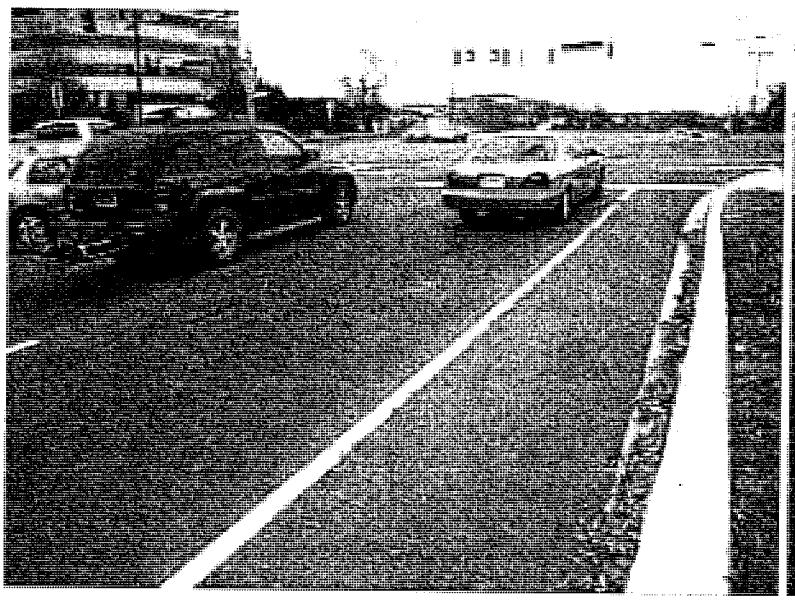

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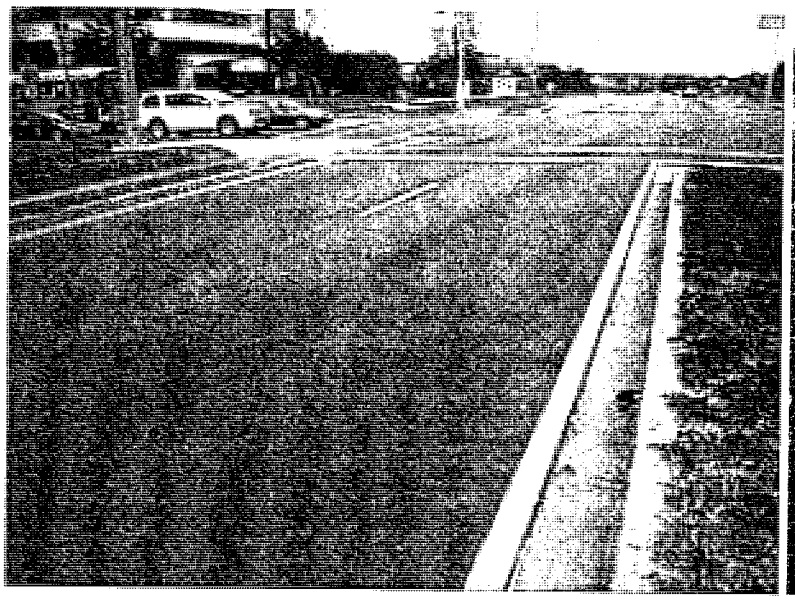
28.JPG



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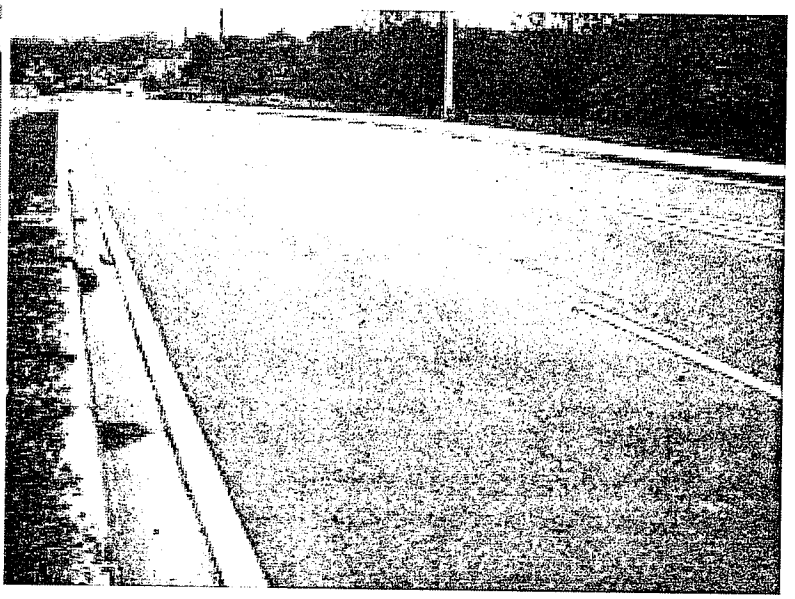

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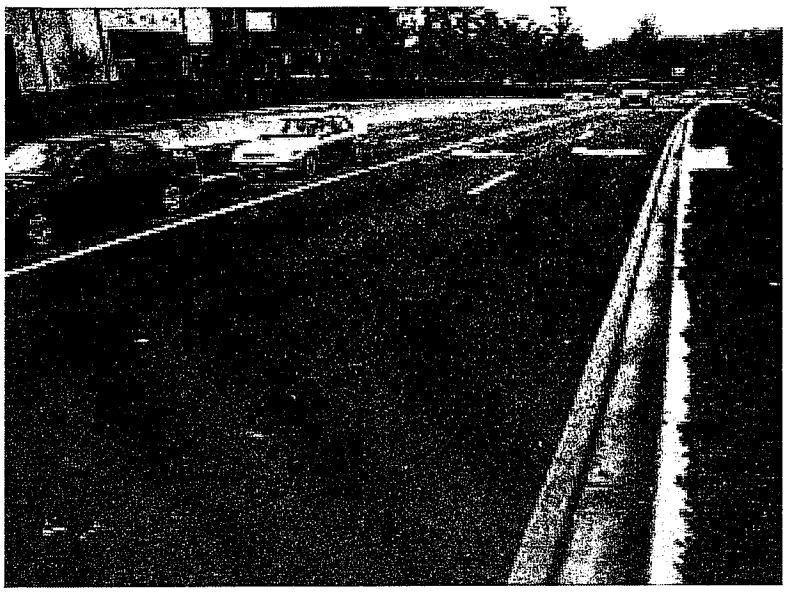


31.JPG

32.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: Bureau Dr.
Location: Montgomery Co., MD

Counted by: JC, SS
Date: December 9, 2008
Weather: Showers, Cold
Entered by: TT

Day: Tuesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Bureau Dr.					TRAFFIC FROM SOUTH on: Bureau Dr.					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	5	11	45	0	61	4	0	2	0	6	19	112	16	0	147	10	339	5	0	354	568
45-00	4	14	41	0	59	3	1	3	0	7	21	128	25	2	176	9	415	6	0	430	672
07:0-15	8	20	46	0	74	3	0	2	0	5	34	143	29	0	206	20	457	15	0	492	777
15-30	7	32	58	0	97	3	0	8	0	11	51	135	33	0	219	17	507	9	0	533	860
30-45	6	25	59	0	90	7	0	6	0	13	39	180	36	0	255	19	505	12	1	537	895
45-00	9	27	83	0	119	5	0	5	0	10	47	218	31	0	296	33	511	9	0	553	978
08:0-15	8	20	73	0	101	7	4	4	0	15	57	227	43	0	327	24	478	12	1	515	958
15-30	5	36	81	0	122	4	2	2	0	8	46	238	45	0	329	28	515	12	0	555	1014
30-45	10	26	51	0	87	4	4	0	1	9	55	245	59	0	359	25	497	12	0	534	989
45-00	10	36	48	0	94	8	0	5	1	14	57	285	64	0	406	24	469	22	0	515	1029
09:0-15	11	24	58	0	93	9	4	3	1	17	52	288	62	0	402	37	425	18	0	480	992
15-30	15	20	51	0	86	6	6	7	0	19	64	232	59	0	355	19	401	17	0	437	897
3 Hr Totals	98	291	694	0	1083	63	21	47	3	134	542	2431	502	2	3477	265	5519	149	2	5935	8740
1 Hr Totals																					
630-730	24	77	190	0	291	13	1	15	0	29	125	518	103	2	748	56	1718	35	0	1809	2877
645-745	25	91	204	0	320	16	1	19	0	36	145	586	123	2	856	65	1884	42	1	1992	3204
07-08	30	104	246	0	380	18	0	21	0	39	171	676	129	0	976	89	1980	45	1	2115	3510
715-815	30	104	273	0	407	22	4	23	0	49	194	760	143	0	1097	93	2001	42	2	2138	3691
730-830	28	108	296	0	432	23	6	17	0	46	189	863	155	0	1207	104	2009	45	2	2160	3845
745-845	32	109	288	0	429	20	10	11	1	42	205	928	178	0	1311	110	2001	45	1	2157	3939
08-09	33	118	253	0	404	23	10	11	2	46	215	995	211	0	1421	101	1959	58	1	2119	3990
815-915	36	122	238	0	396	25	10	10	3	48	210	1056	230	0	1496	114	1906	64	0	2084	4024
830-930	46	106	208	0	360	27	14	15	3	59	228	1050	244	0	1522	105	1792	69	0	1966	3907
PEAK HOUR																					
815-915	36	122	238	0	396	25	10	10	3	48	210	1056	230	0	1496	114	1906	64	0	2084	4024
PM																					
04:0-15	17	3	53	0	73	39	11	10	0	60	68	393	5	0	466	6	283	10	0	299	898
15-30	22	2	53	0	77	24	10	11	0	45	45	395	5	0	445	7	296	10	0	313	880
30-45	22	3	55	0	80	54	23	15	0	92	66	443	6	0	515	7	307	13	0	327	1014
45-00	33	0	69	0	102	56	17	12	1	86	73	428	4	0	505	5	333	18	0	356	1049
05:0-15	40	4	87	0	131	69	23	15	0	107	78	426	3	0	507	7	352	21	0	380	1125
15-30	26	1	77	0	104	82	19	22	0	123	68	431	6	0	505	7	332	16	0	355	1087
30-45	29	2	59	0	90	94	12	29	0	135	69	443	3	0	515	6	364	13	0	383	1123
45-00	23	2	65	0	90	91	8	9	0	108	58	476	4	0	538	5	349	15	0	369	1105
06:0-15	22	2	68	0	92	77	14	10	1	102	50	481	1	0	532	3	302	20	1	326	1052
15-30	24	1	59	0	84	48	4	9	0	61	62	466	3	0	531	2	286	18	0	306	982
30-45	12	1	70	0	83	45	4	9	0	58	59	459	3	0	521	3	251	23	0	277	939
45-00	27	1	60	0	88	37	10	12	0	59	63	427	1	0	491	0	242	13	0	255	893
3 Hr Totals	297	22	775	0	1094	716	155	163	2	1036	759	5268	44	0	6071	58	3697	190	1	3946	12147
1 Hr Totals																					
04-05	94	8	230	0	332	173	61	48	1	283	252	1659	20	0	1931	25	1219	51	0	1295	3841
415-515	117	9	264	0	390	203	73	53	1	330	262	1692	18	0	1972	26	1288	62	0	1376	4068
430-530	121	8	288	0	417	261	82	64	1	408	285	1728	19	0	2032	26	1324	68	0	1418	4275
445-545	128	7	292	0	427	301	71	78	1	451	288	1728	16	0	2032	25	1381	68	0	1474	4384
05-06	118	9	288	0	415	336	62	75	0	473	273	1776	16	0	2065	25	1397	65	0	1487	4440
515-615	100	7	269	0	376	344	53	70	1	468	245	1831	14	0	2090	21	1347	64	1	1433	4367
530-630	98	7	251	0	356	310	38	57	1	406	239	1866	11	0	2116	16	1301	66	1	1384	4262
545-645	81	6	262	0	349	261	30	37	1	329	229	1882	11	0	2122	13	1188	76	1	1278	4078
06-07	85	5	257	0	347	207	32	40	1	280	234	1833	8	0	2075	8	1081	74	1	1164	3866
PEAK HOUR																					
05-06	118	9	288	0	415	336	62	75	0	473	273	1776	16	0	2065	25	1397	65	0	1487	4440

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: Bureau Dr.
Location: Montgomery Co., MD

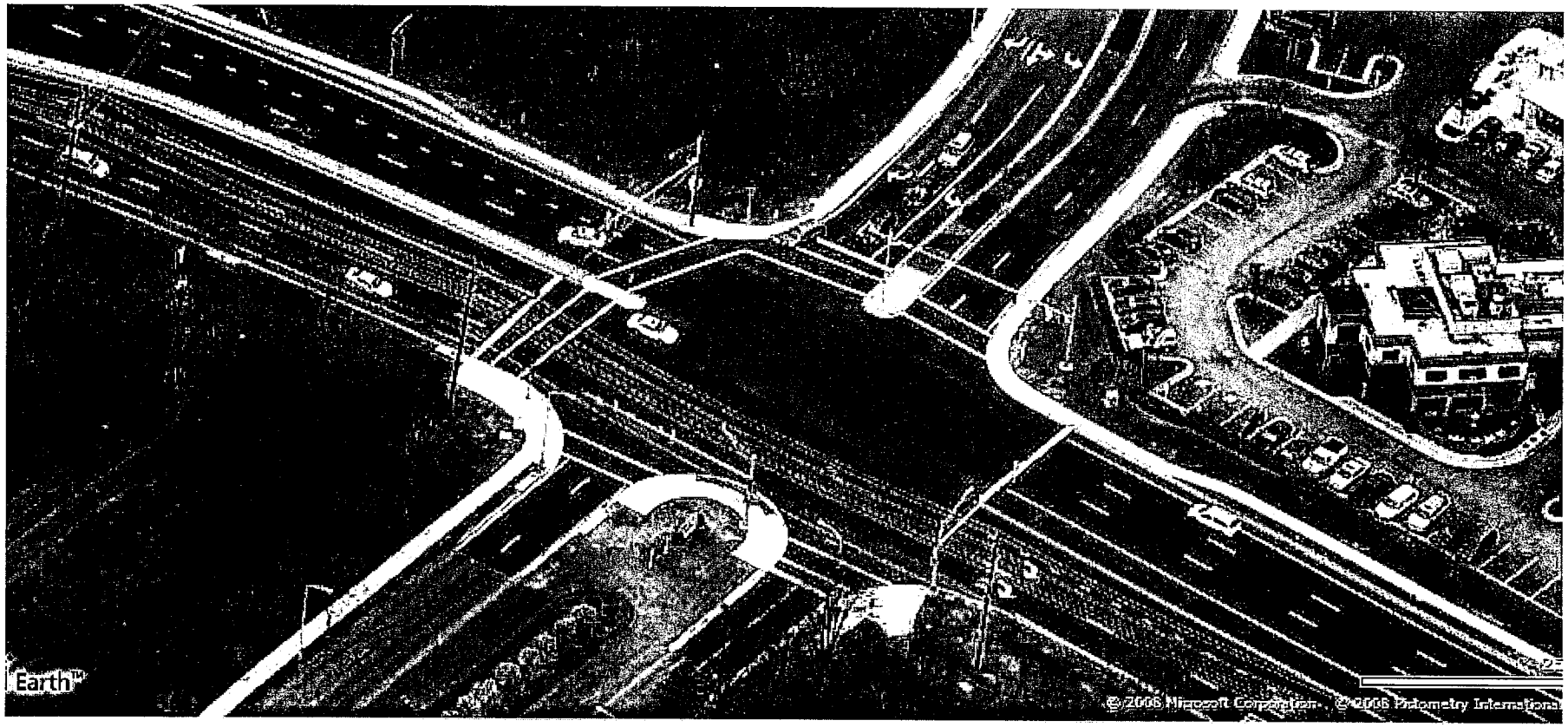
Counted by: JC, SS
Date: December 9, 2008
Weather: Showers, Cold
Entered by: TT

Day: Tuesday

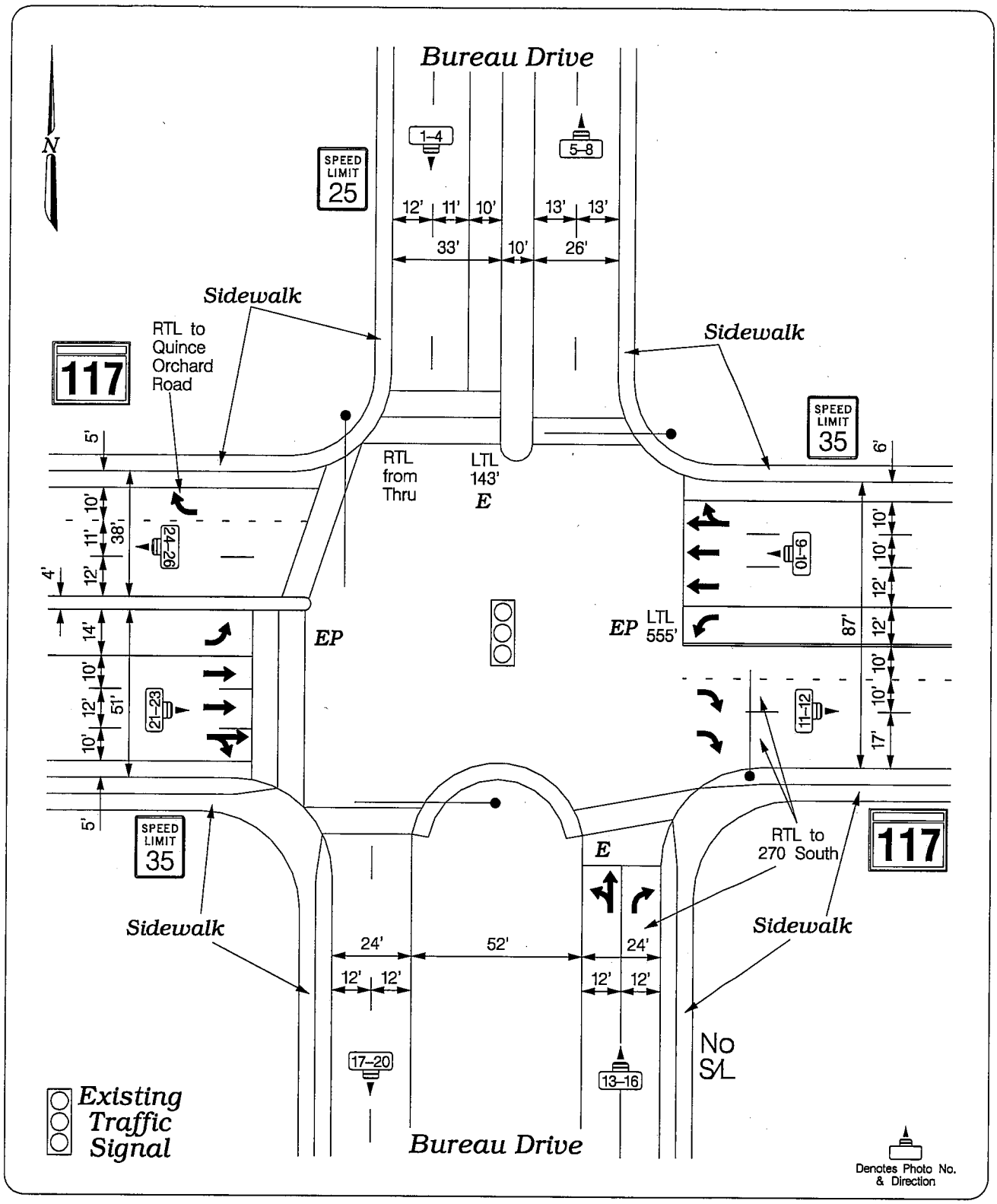
The Traffic Group

TIME	Bureau Dr. NORTH LEG				Bureau Dr. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	1	1	0	0
30-45	0	1	0	0	1	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	1	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	3	0	0	0	0	0	0	0
09:0-15	1	0	0	0	0	2	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	5	1	0	0	3	3	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	1	2	0	0
45-00	0	0	0	0	2	1	1	0
05:0-15	3	0	0	0	0	0	0	1
15-30	1	0	0	0	2	0	0	0
30-45	3	0	0	0	0	2	0	1
45-00	1	0	0	0	0	1	0	0
06:0-15	0	0	2	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	1	3	0	0
TOTALS	10	0	2	0	8	9	1	2

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
07:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	5	0	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	1	0	0	0
45-00	0	0	0	0	1	0	0	0
05:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	1	1	0	0	0	1	0	0
TOTALS	3	1	0	0	6	1	0	0



#8 MD 117 & Bureau Dr



The Traffic Group

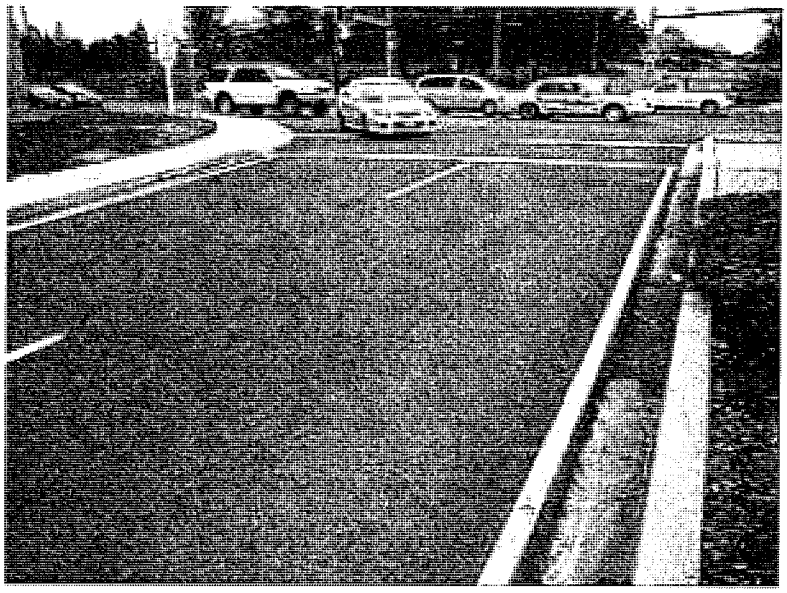
MD 117 @ Bureau Drive

FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: MD 117@Bureau Drive.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 5 OF 10

01.JPG

02.JPG



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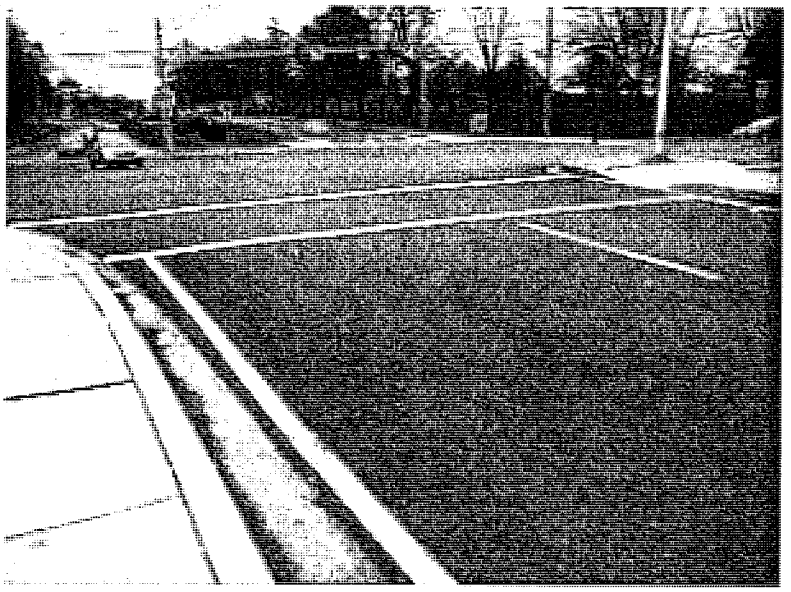

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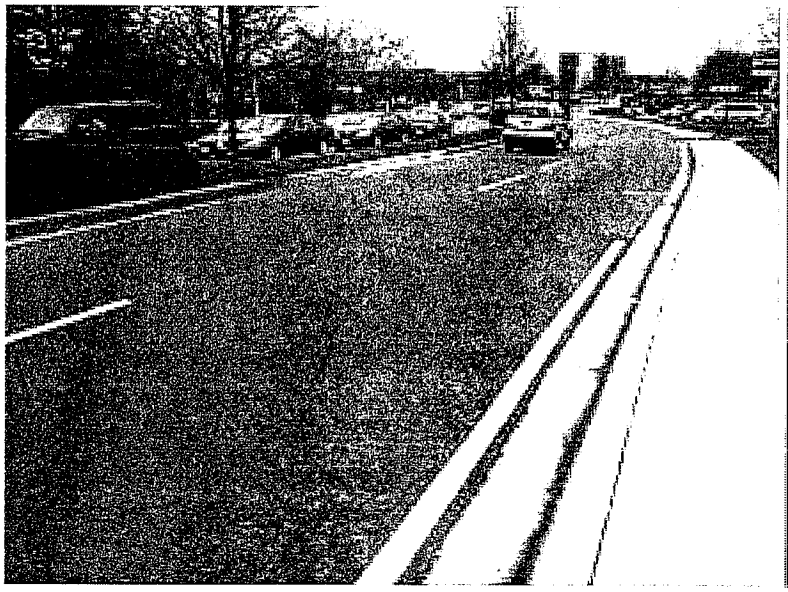

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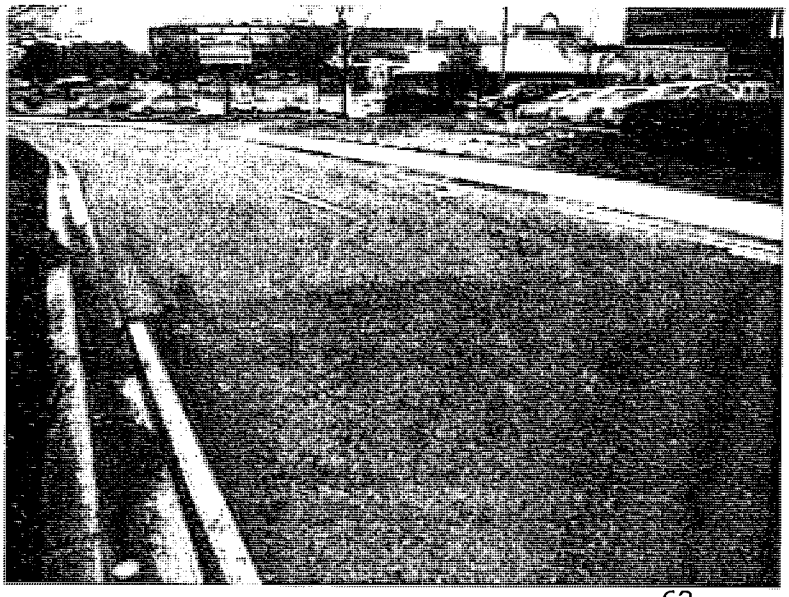

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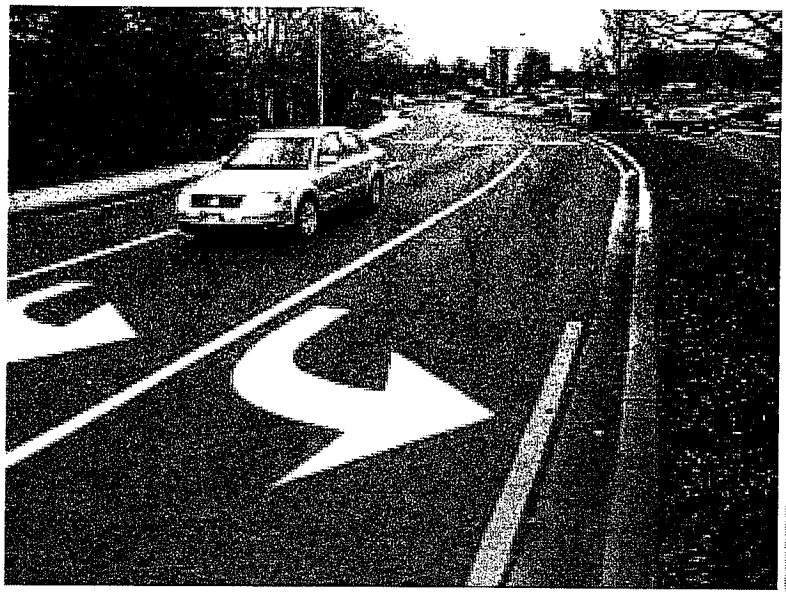
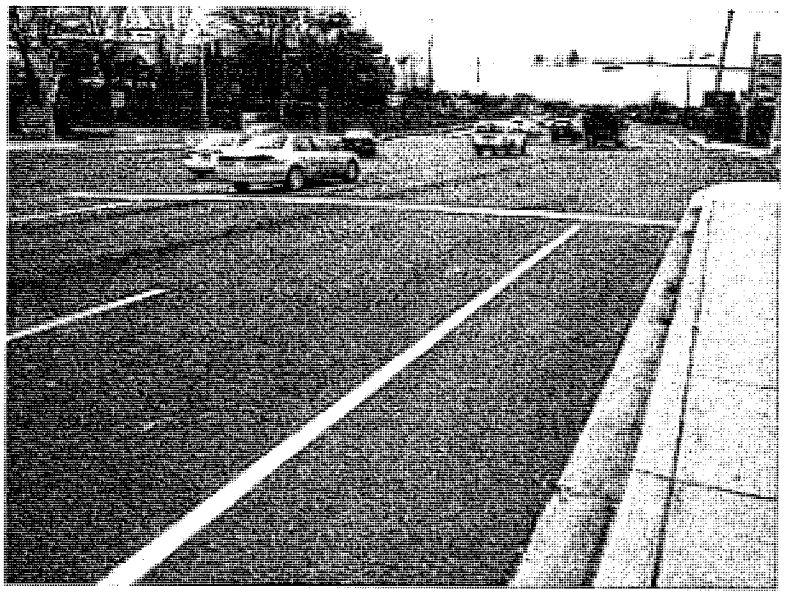


07.JPG

08.JPG



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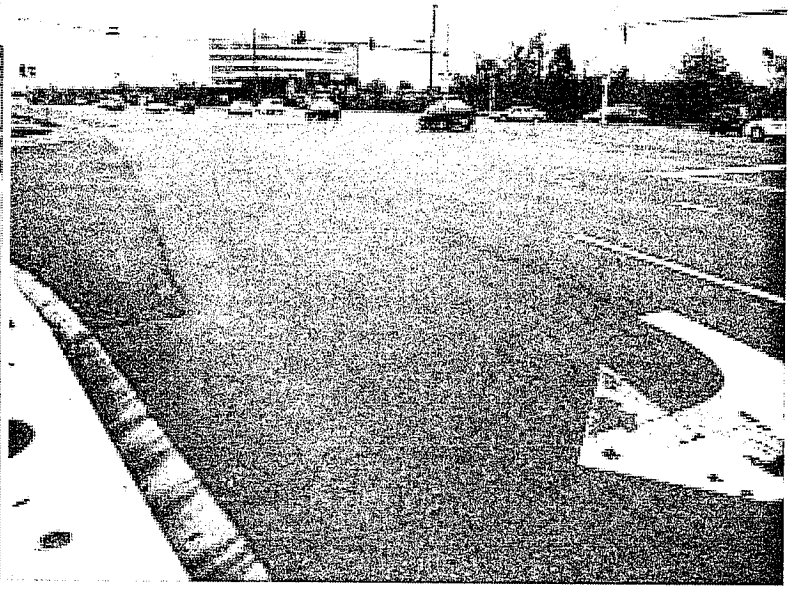
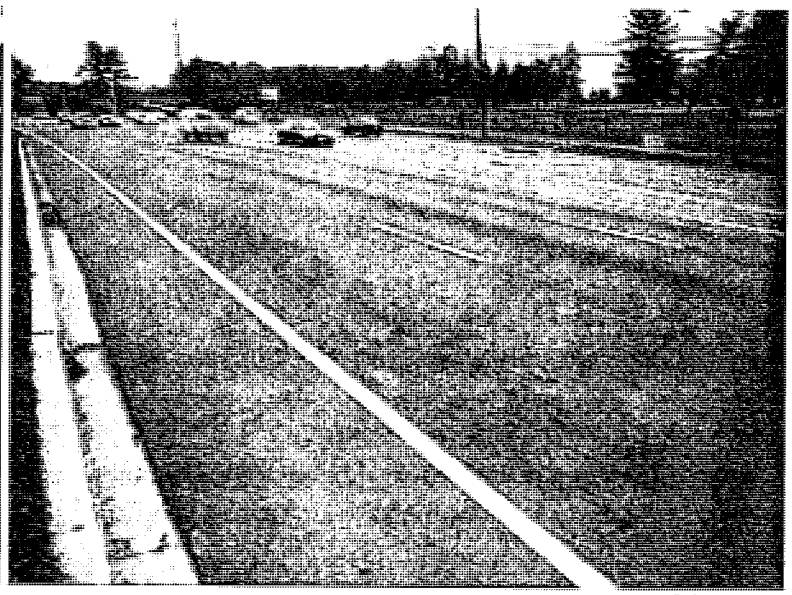


10.JPG

11.JPG



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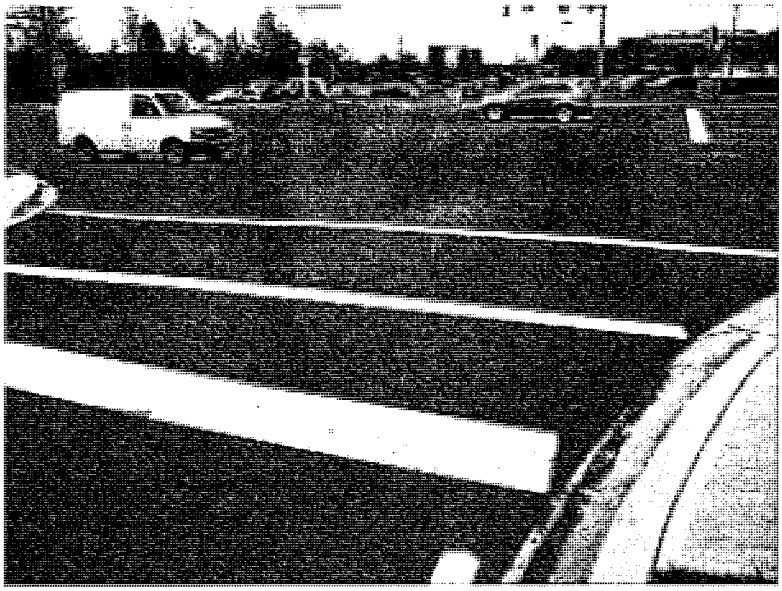
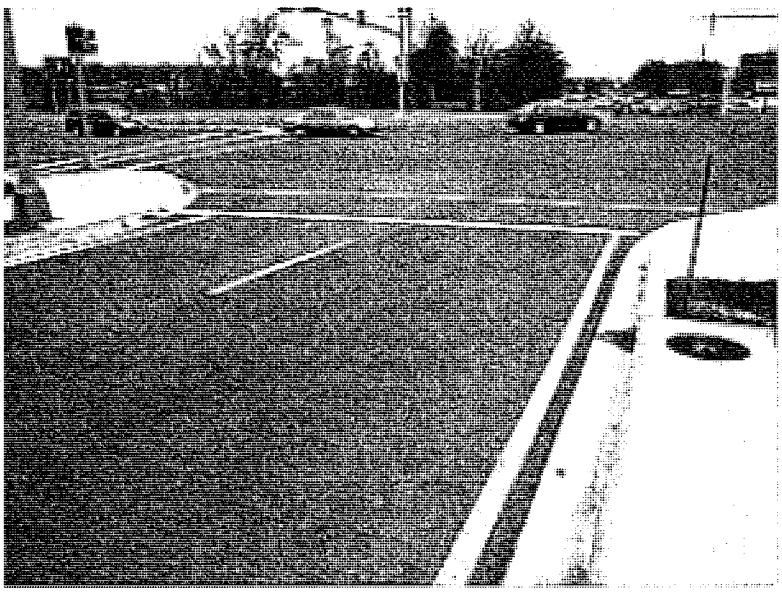


13.JPG

14.JPG



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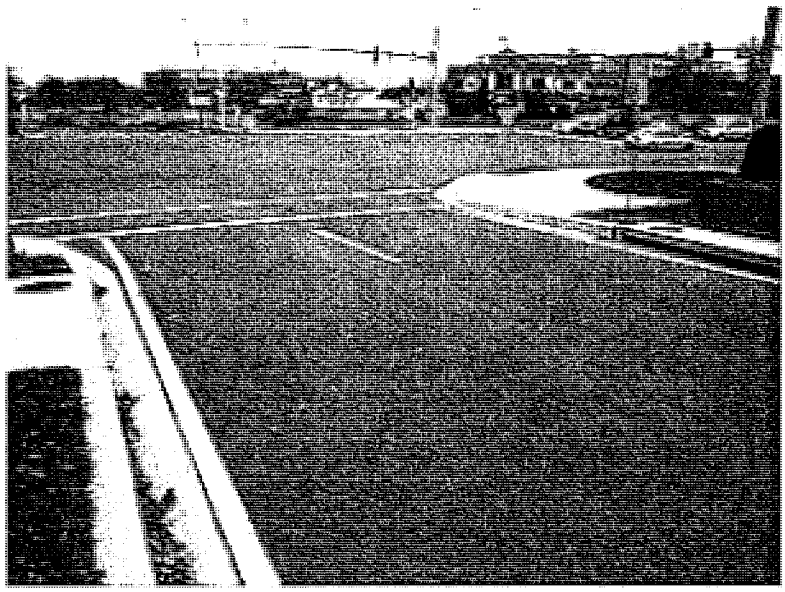

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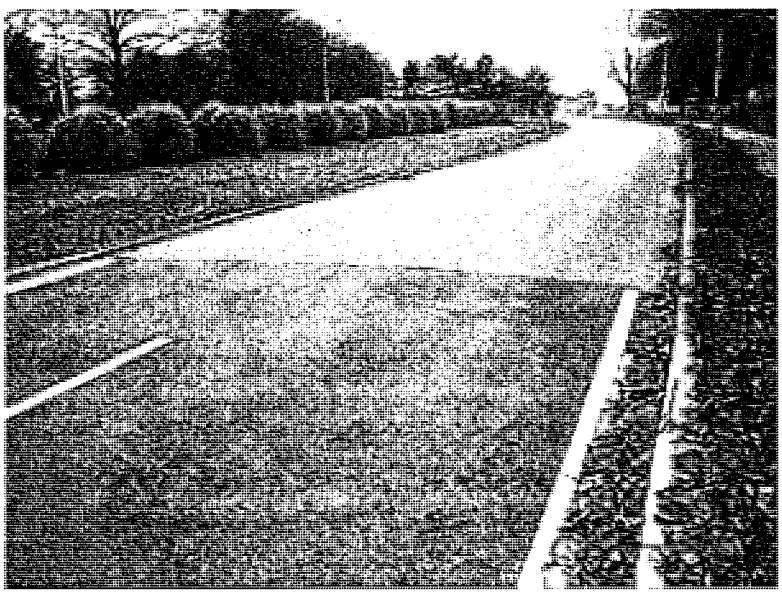

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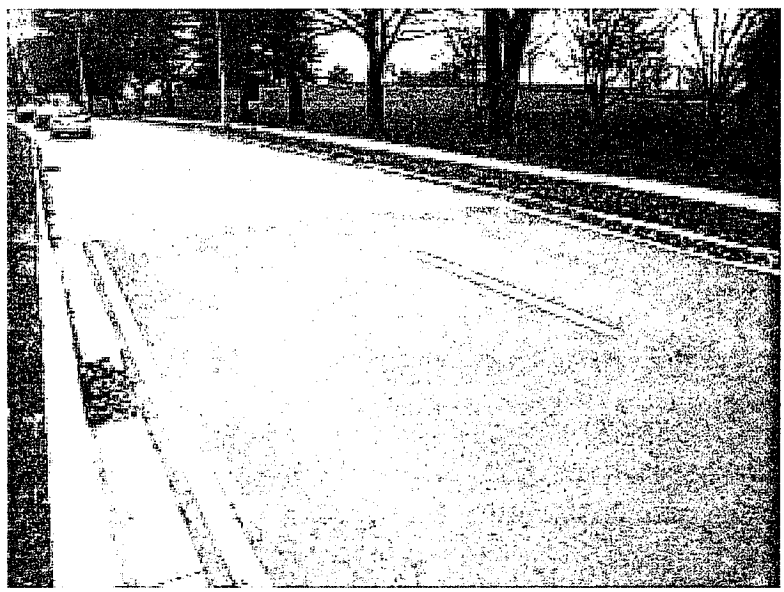

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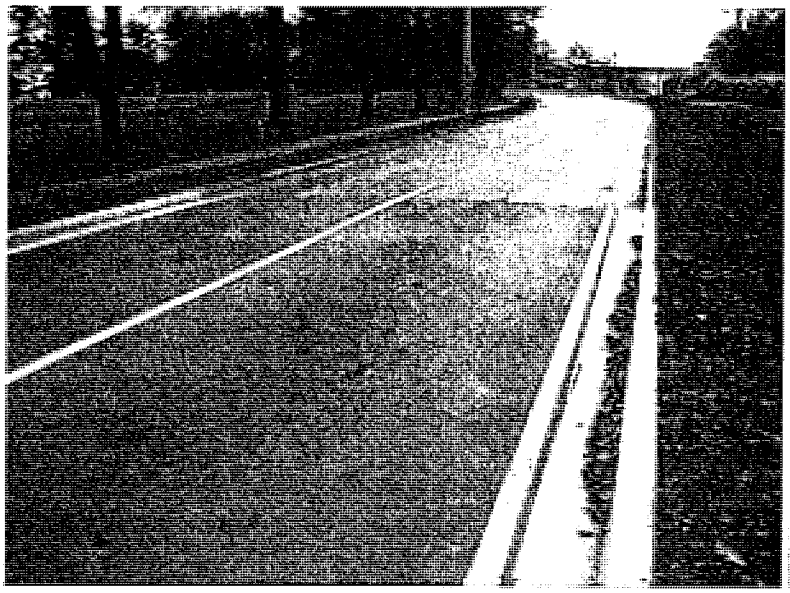
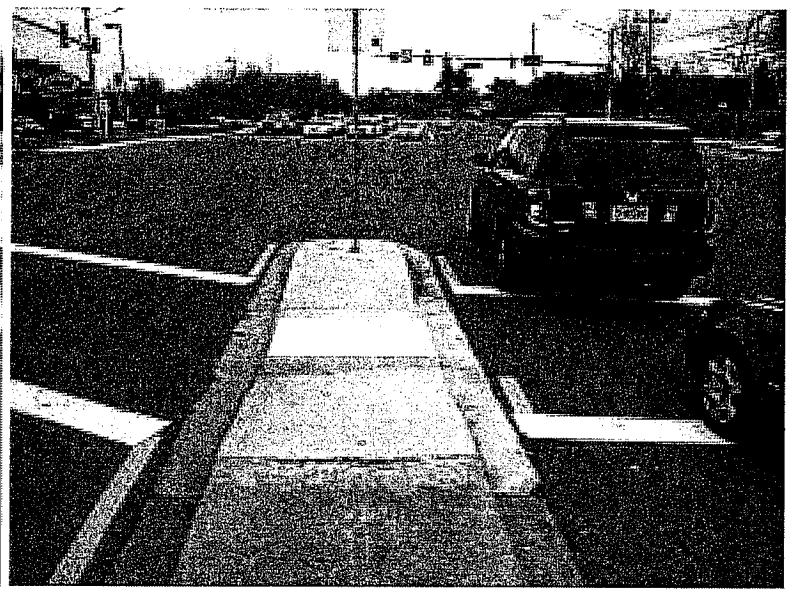


19.JPG

20.JPG

21.JPG



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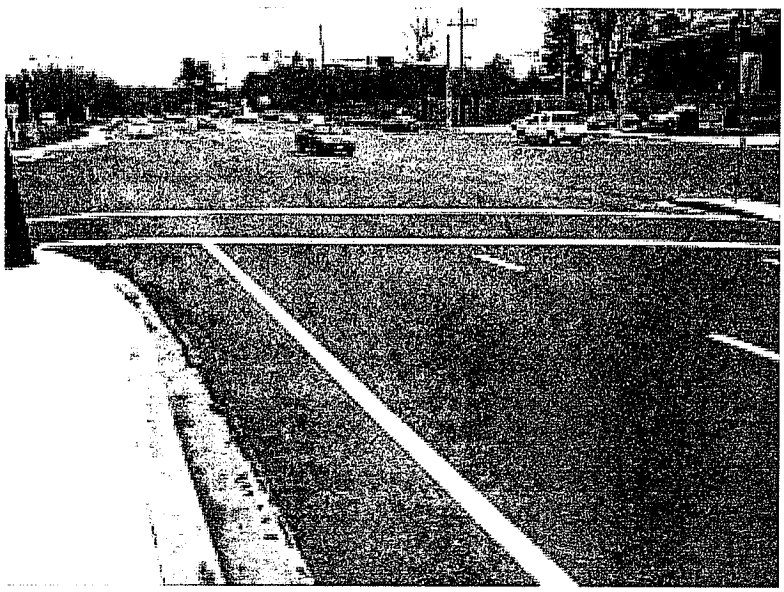

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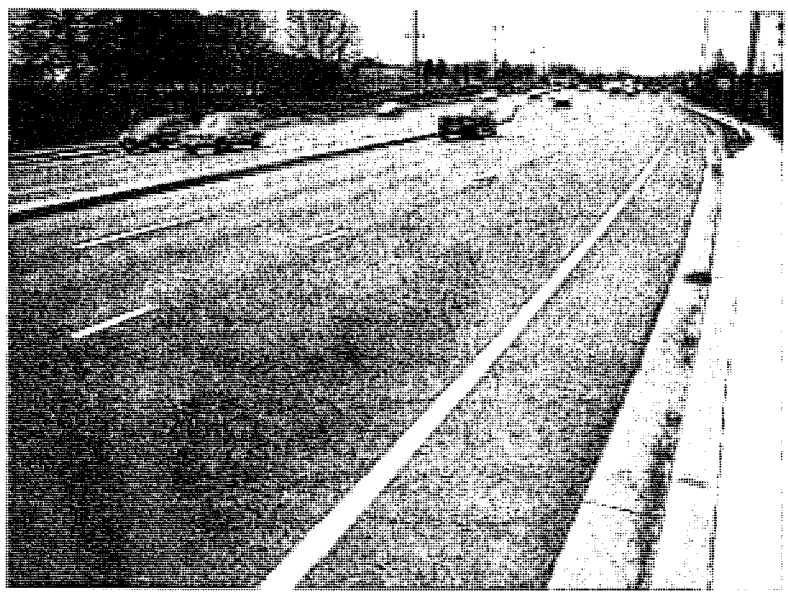

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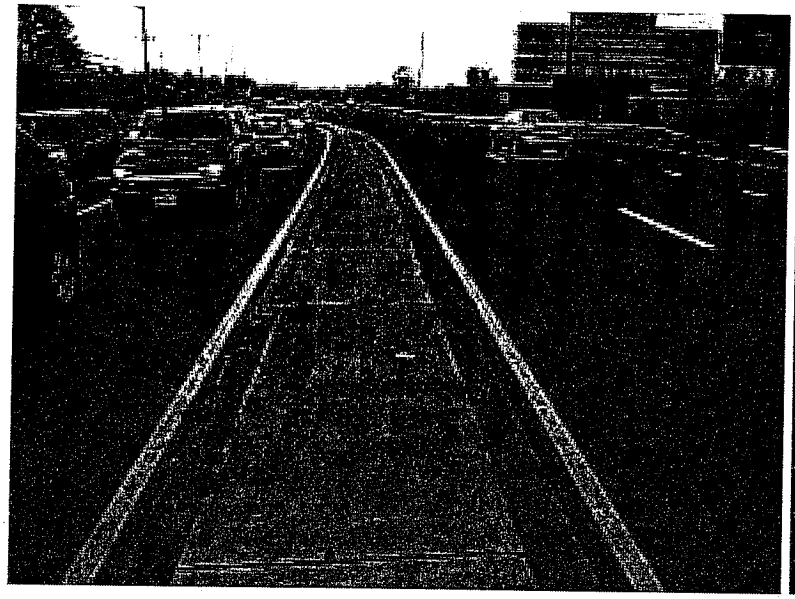

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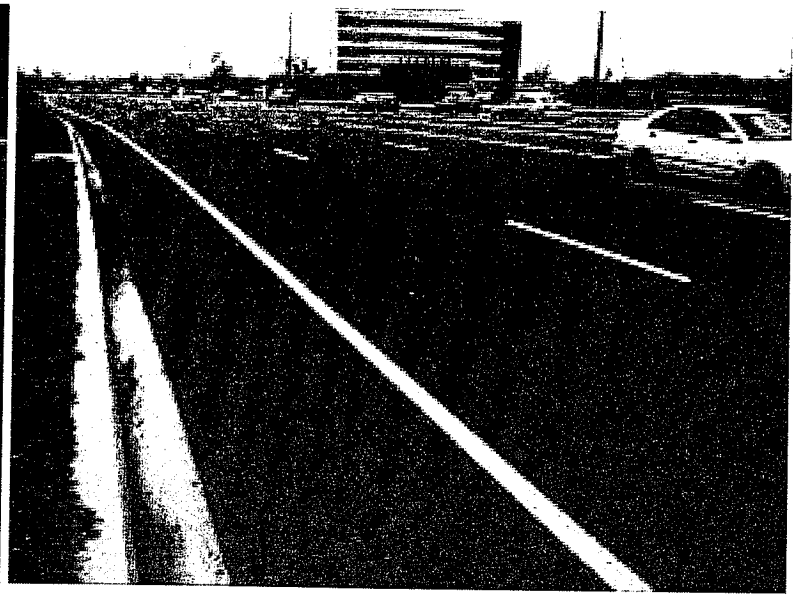


26.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 124
and: Firstfield Rd
Location: Montgomery Co., MD

Counted by: CS\JS
Date: December 3, 2008
Weather: Fair,Cold
Entered by: RB

Day: Wednesday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: MD 124					TRAFFIC FROM SOUTH on: MD 124					TRAFFIC FROM EAST on: Firstfield Rd					TRAFFIC FROM WEST on: Firstfield Rd					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	13	199	65	0	277	1	85	0	0	86	21	3	4	0	28	5	11	43	0	59	450
45-00	26	172	75	0	273	2	97	0	0	99	14	4	6	0	24	2	10	59	0	71	467
07:0-15	26	181	78	0	285	2	114	1	0	117	16	7	3	1	27	3	12	42	0	57	486
15-30	43	168	63	0	274	5	138	0	0	143	24	7	8	0	39	7	19	45	0	71	527
30-45	38	231	84	0	353	1	117	0	0	118	36	7	11	0	54	8	19	55	0	82	607
45-00	46	248	72	0	366	6	146	1	0	153	22	11	9	0	42	3	21	59	1	84	645
08:0-15	58	266	88	0	412	8	149	2	0	159	21	12	7	0	40	6	15	67	0	88	699
15-30	49	253	97	0	399	4	127	2	0	133	22	9	5	0	36	8	14	47	1	70	638
30-45	78	291	86	0	455	4	139	4	0	147	29	15	7	0	51	3	8	71	0	82	735
45-00	67	330	80	0	477	3	160	0	0	163	22	9	10	0	41	7	16	69	0	92	773
09:0-15	64	254	58	0	376	10	146	3	0	159	23	8	10	0	41	5	16	72	0	93	669
15-30	54	228	71	0	353	10	153	3	0	166	22	10	8	1	41	7	14	56	0	77	637
3 Hr Totals	562	2821	917	0	4300	56	1571	16	0	1643	272	102	88	2	464	64	175	685	2	926	6027
1 Hr Totals																					
630-730	108	720	281	0	1109	10	434	1	0	445	75	21	21	1	118	17	52	189	0	258	1930
645-745	133	752	300	0	1185	10	466	1	0	477	90	25	28	1	144	20	60	201	0	281	2087
07-08	153	828	297	0	1278	14	515	2	0	531	98	32	31	1	162	21	71	201	1	294	2265
715-815	185	913	307	0	1405	20	550	3	0	573	103	37	35	0	175	24	74	226	1	325	2478
730-830	191	998	341	0	1530	19	539	5	0	563	101	39	32	0	172	25	69	228	2	324	2589
745-845	231	1058	343	0	1632	22	561	9	0	592	94	47	28	0	169	20	58	244	2	324	2717
08-09	252	1140	351	0	1743	19	575	8	0	602	94	45	29	0	168	24	53	254	1	332	2845
815-915	258	1128	321	0	1707	21	572	9	0	602	96	41	32	0	169	23	54	259	1	337	2815
830-930	263	1103	295	0	1661	27	598	10	0	635	96	42	35	1	174	22	54	268	0	344	2814
PEAK HOUR																					
08-09	252	1140	351	0	1743	19	575	8	0	602	94	45	29	0	168	24	53	254	1	332	2845
PM																					
04:0-15	77	226	39	0	342	10	236	5	0	251	54	21	10	0	85	1	2	58	1	62	740
15-30	73	217	36	0	326	6	239	6	0	251	49	15	12	1	77	0	6	47	0	53	707
30-45	65	234	37	0	336	8	240	2	0	250	79	20	6	1	106	6	13	84	0	103	795
45-00	70	214	40	0	324	3	257	0	0	260	53	14	10	0	77	6	4	52	1	63	724
05:0-15	72	214	33	0	319	13	267	3	0	283	54	13	6	0	73	2	14	62	0	78	753
15-30	93	249	54	0	396	10	268	4	0	282	42	16	14	0	72	5	16	68	0	89	839
30-45	100	230	39	0	369	7	220	0	0	227	58	21	17	0	96	4	10	62	0	76	768
45-00	66	232	42	0	340	4	215	2	0	221	61	16	12	0	89	1	14	66	0	81	731
06:0-15	71	218	42	0	331	13	262	2	0	277	46	20	13	1	80	6	4	46	1	57	745
15-30	74	232	41	0	347	9	217	5	0	231	41	20	9	3	73	4	6	66	0	76	727
30-45	59	208	43	0	310	9	206	10	0	225	47	23	8	0	78	1	11	53	0	65	678
45-00	70	209	28	0	307	3	163	8	0	174	51	18	10	0	79	2	6	24	0	32	592
3 Hr Totals	890	2683	474	0	4047	95	2790	47	0	2932	635	217	127	6	985	38	106	688	3	835	8799
1 Hr Totals																					
04-05	285	891	152	0	1328	27	972	13	0	1012	235	70	38	2	345	13	25	241	2	281	2966
415-515	280	879	146	0	1305	30	1003	11	0	1044	235	62	34	2	333	14	37	245	1	297	2979
430-530	300	911	164	0	1375	34	1032	9	0	1075	228	63	36	1	328	19	47	266	1	333	3111
445-545	335	907	166	0	1408	33	1012	7	0	1052	207	64	47	0	318	17	44	244	1	306	3084
05-06	331	925	168	0	1424	34	970	9	0	1013	215	66	49	0	330	12	54	258	0	324	3091
515-615	330	929	177	0	1436	34	965	8	0	1007	207	73	56	1	337	16	44	242	1	303	3083
530-630	311	912	164	0	1387	33	914	9	0	956	206	77	51	4	338	15	34	240	1	290	2971
545-645	270	890	168	0	1328	35	900	19	0	954	195	79	42	4	320	12	35	231	1	279	2881
06-07	274	867	154	0	1295	34	848	25	0	907	185	81	40	4	310	13	27	189	1	230	2742
PEAK HOUR																					
430-530	300	911	164	0	1375	34	1032	9	0	1075	228	63	36	1	328	19	47	266	1	333	3111

PEDESTRIAN OBSERVATIONS

Intersection of: MD 124
and: Firstfield Rd
Location: Montgomery Co., MD

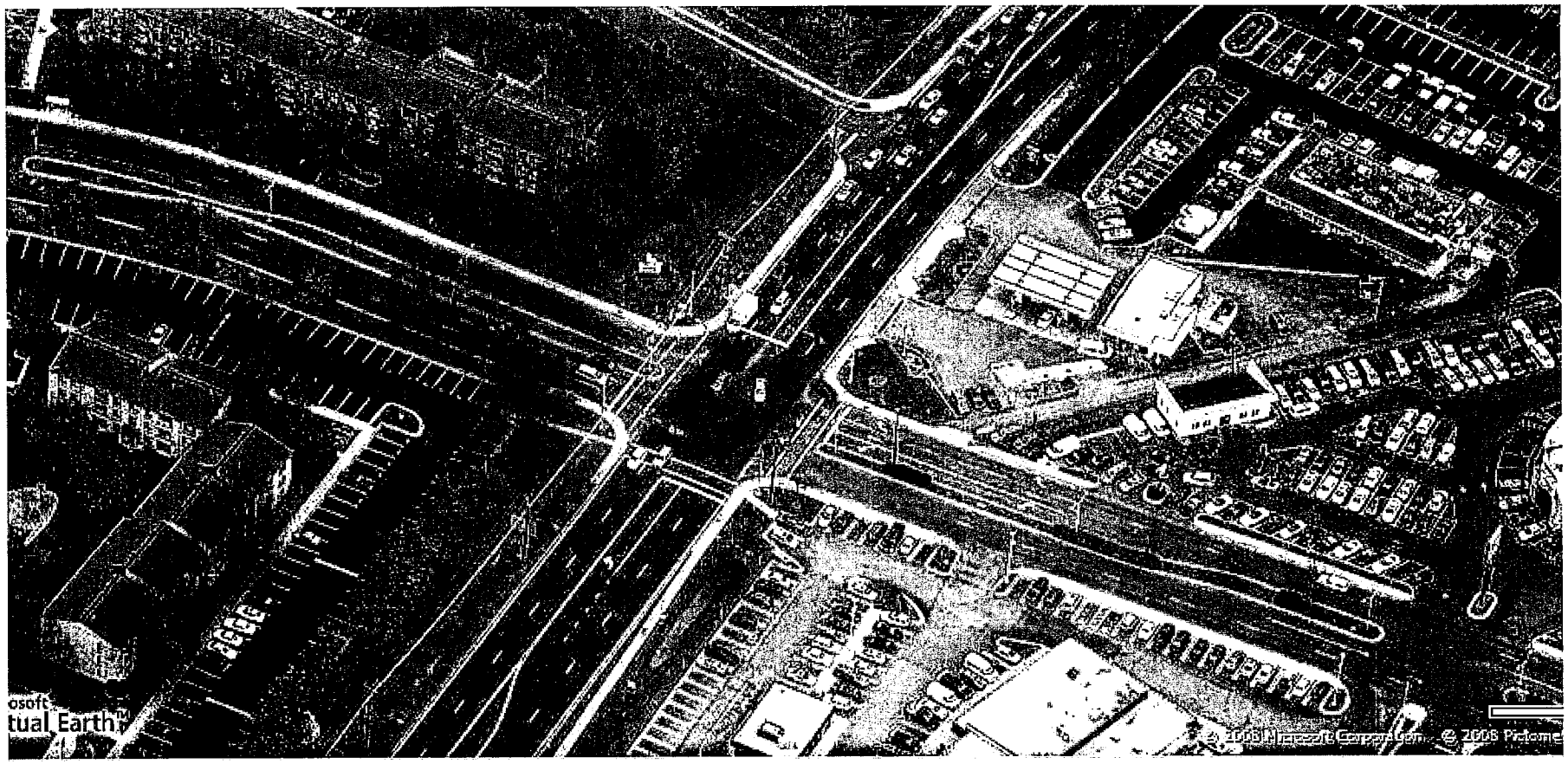
Counted by: CS\JS
Date: December 3, 2008
Weather: Fair,Cold
Entered by: RB

Day: Wednesday

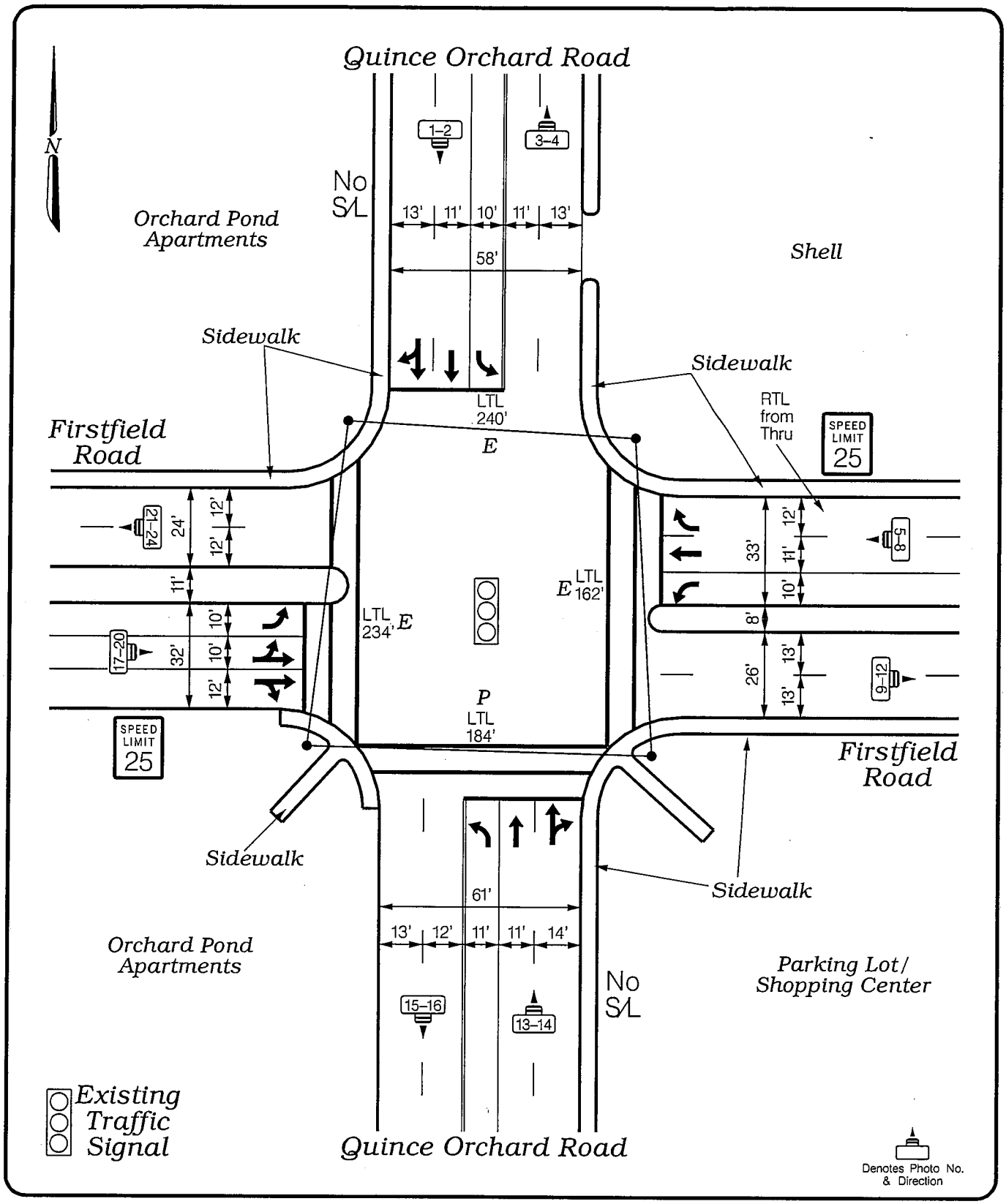
The Traffic Group

TIME	MD 124 NORTH LEG				MD 124 SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	2	1	0	0
07:0-15	1	0	0	0	0	0	0	0
15-30	1	0	0	0	2	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	2	0	0	0	3	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	3	0	0	0
15-30	0	0	0	0	2	0	0	0
TOTALS	5	0	0	0	15	1	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	3	0	0	0
30-45	1	0	0	0	1	0	0	0
45-00	1	0	0	0	1	0	0	0
05:0-15	1	0	0	0	1	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	1	0	1	0	1	0	0	0
45-00	1	0	0	0	2	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	2	0	0	0
30-45	1	0	0	0	1	0	1	0
45-00	1	0	0	0	0	0	0	0
TOTALS	8	0	1	0	13	0	1	0

TIME	Firstfield Rd EAST LEG				Firstfield Rd WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	1	1	0	0
07:0-15	0	0	0	0	2	0	0	0
15-30	0	0	0	0	1	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	2	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	2	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	3	0	0	0
15-30	0	0	0	0	2	0	0	0
TOTALS	0	0	0	0	15	1	0	0
PM								
04:0-15	1	0	0	0	0	0	0	0
15-30	5	0	0	0	2	0	1	0
30-45	5	0	0	0	6	1	0	0
45-00	1	0	0	0	2	0	3	0
05:0-15	3	0	0	0	6	0	0	0
15-30	1	0	0	0	2	0	1	0
30-45	2	0	0	0	3	0	0	0
45-00	6	0	0	0	1	0	0	0
06:0-15	4	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	29	0	0	0	22	1	5	0



#10 MD 124 & Firstfield Rd

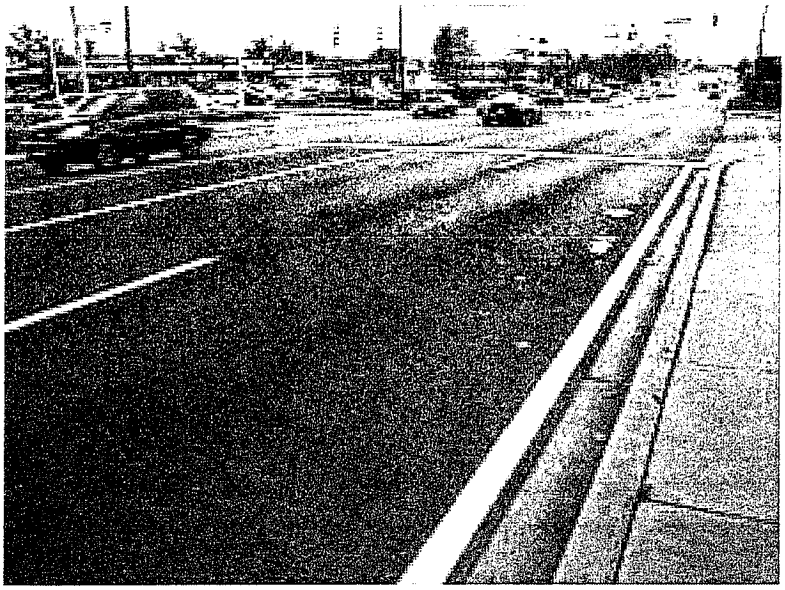


The Traffic Group

Quince Orchard Road @ Firstfield Road

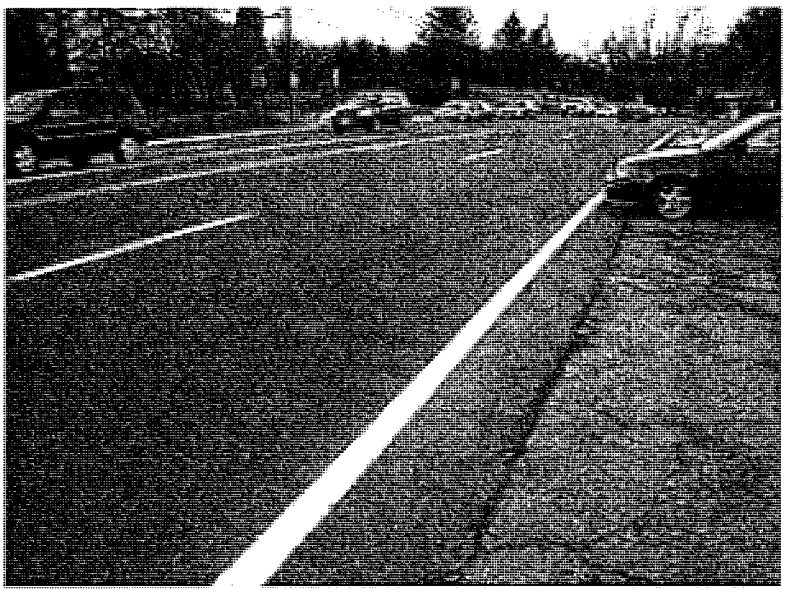
FIELD WORK BY: J. W.
DRAWN BY: K.Hurley
DATE: November, 2008
SCALE: N/A

JOB NO.: 2008-0911
DWG NAME: Quince Orchard Road@ Firstfield Road.dgn
LOCATION: Montgomery Co., MD
SHEET NO.: 3 OF 10



01.JPG

02.JPG



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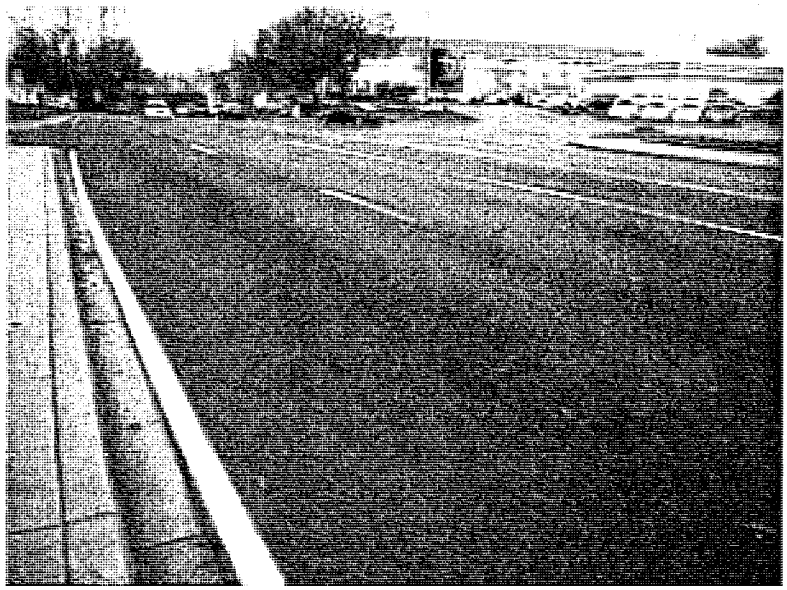

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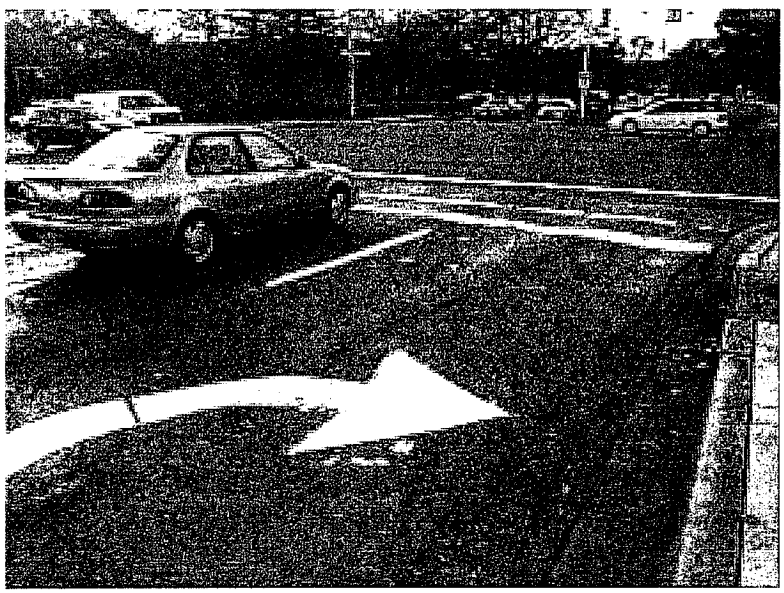
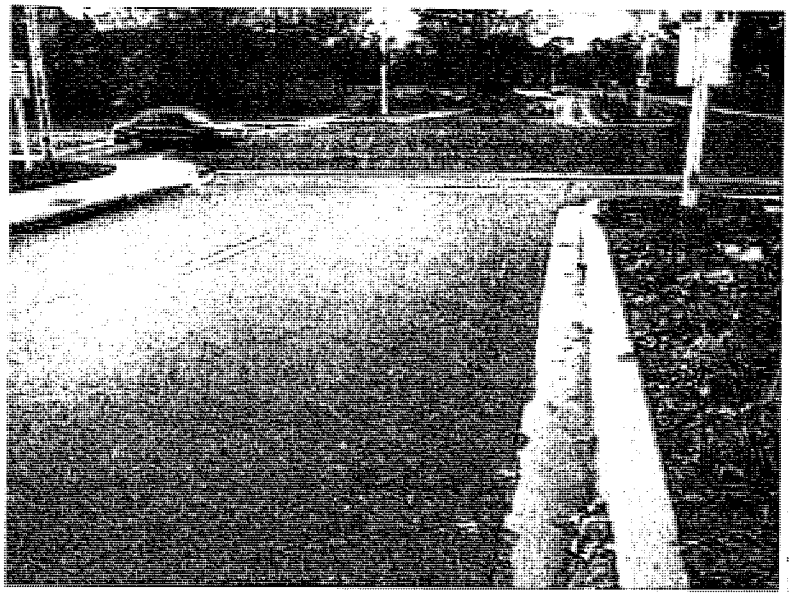


05.JPG

06.JPG



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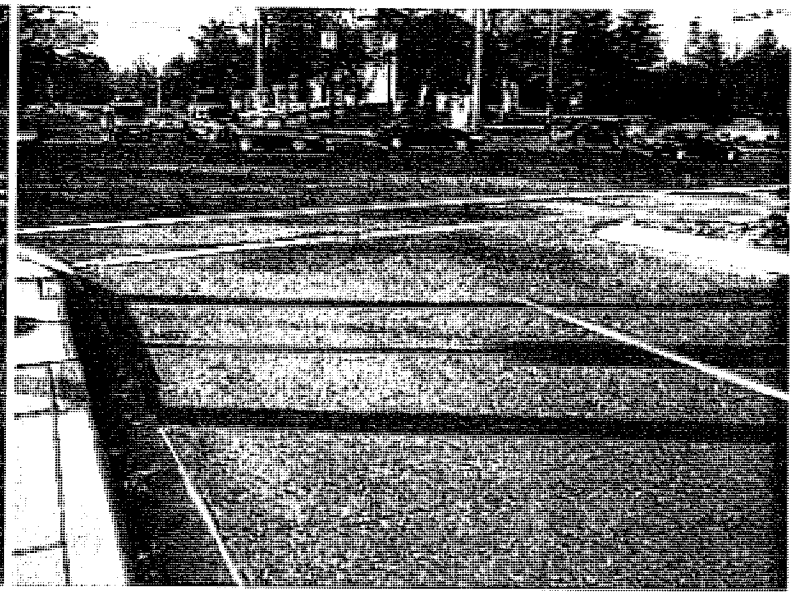

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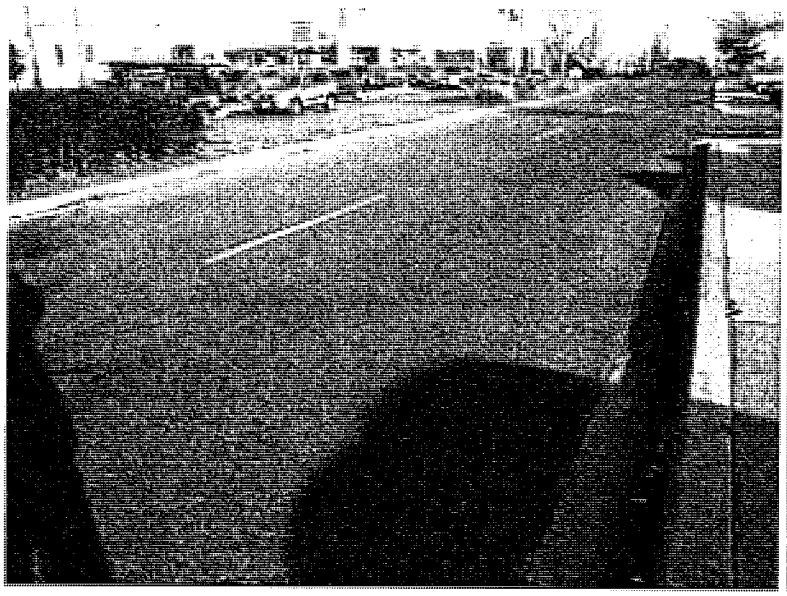
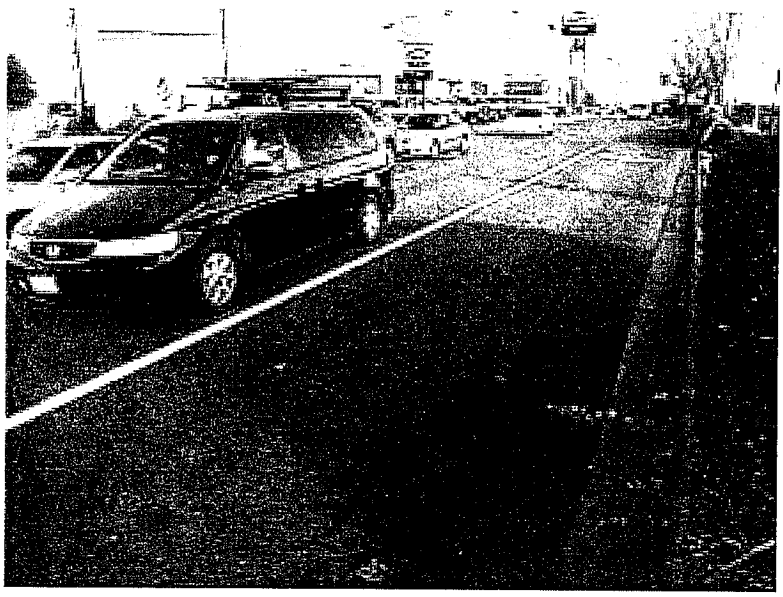


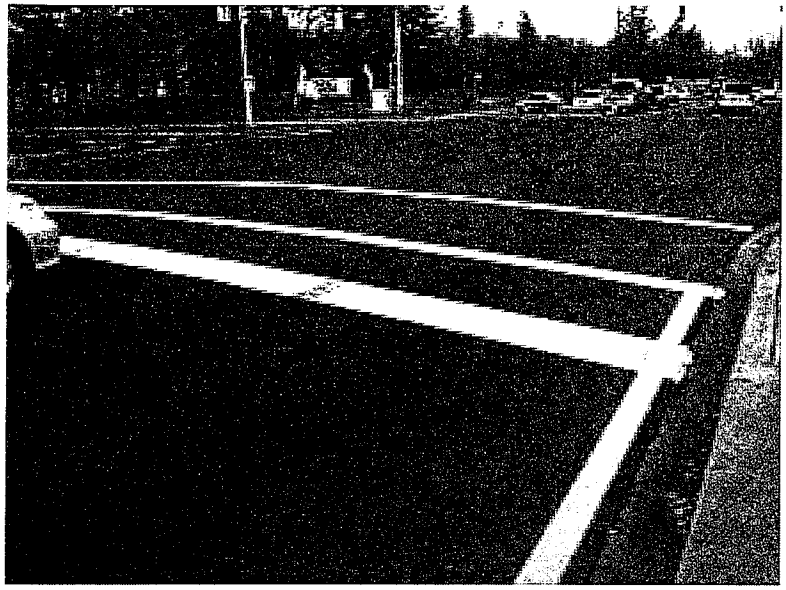
09.JPG

10.JPG



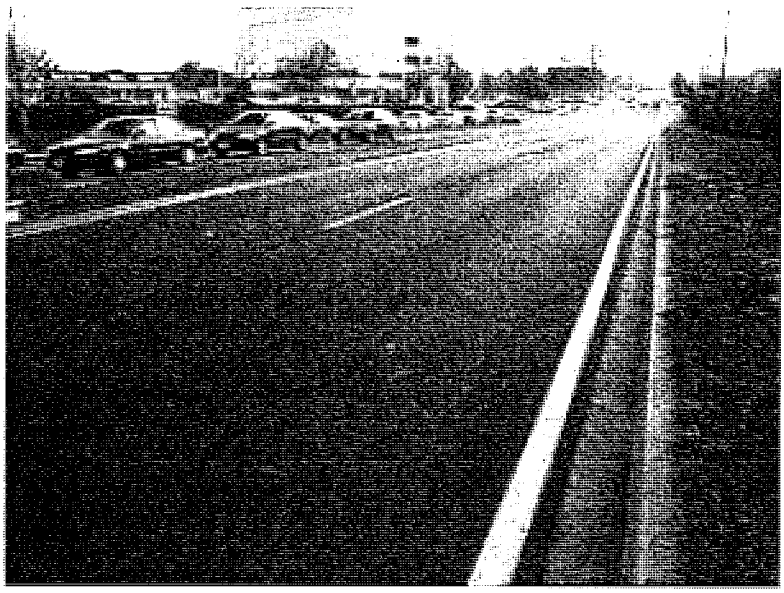
11.JPG

12.JPG



13.JPG

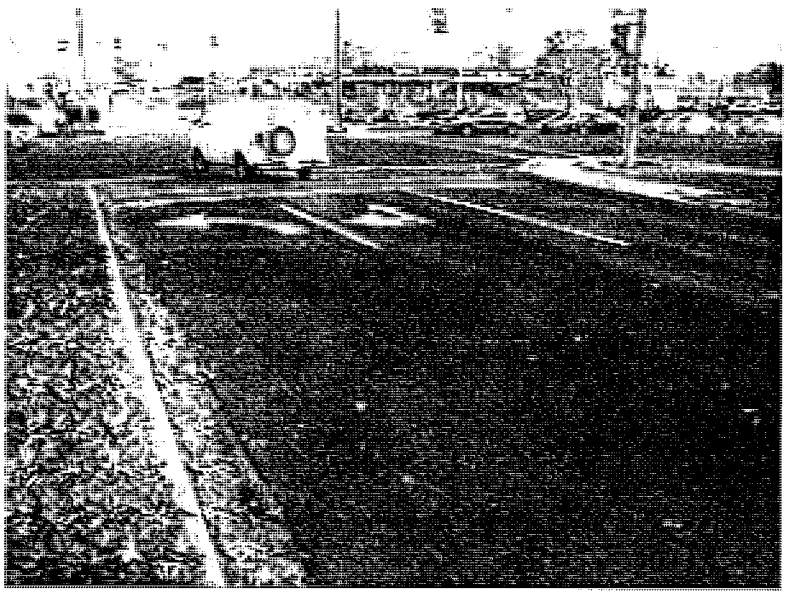
14.JPG



15.JPG

16.JPG

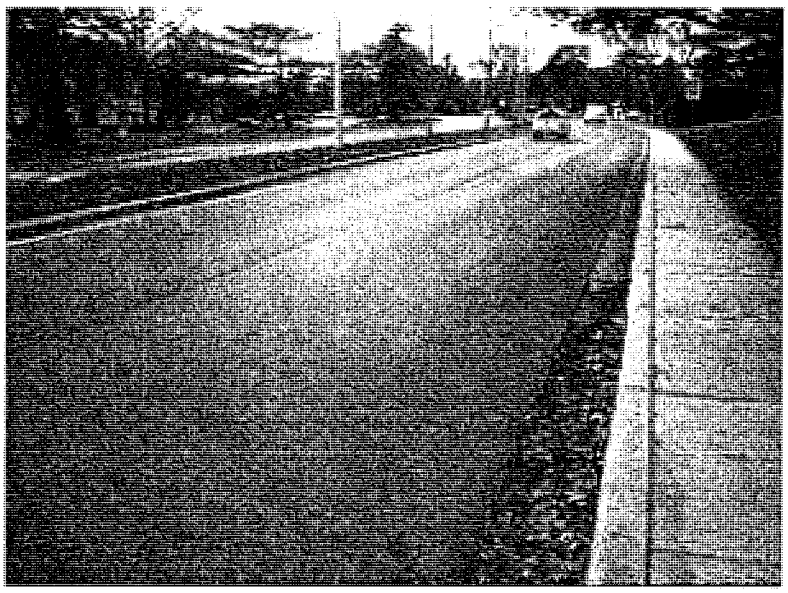
17.JPG



18.JPG

19.JPG

20.JPG



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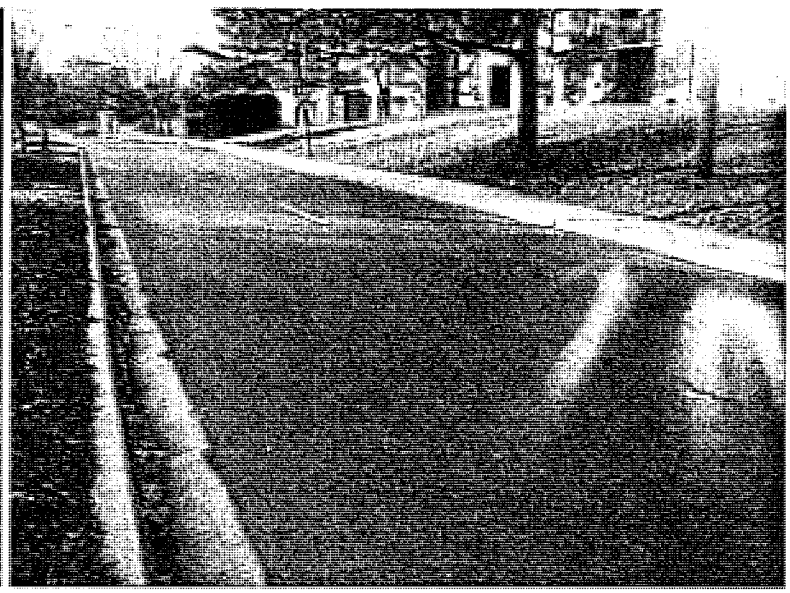

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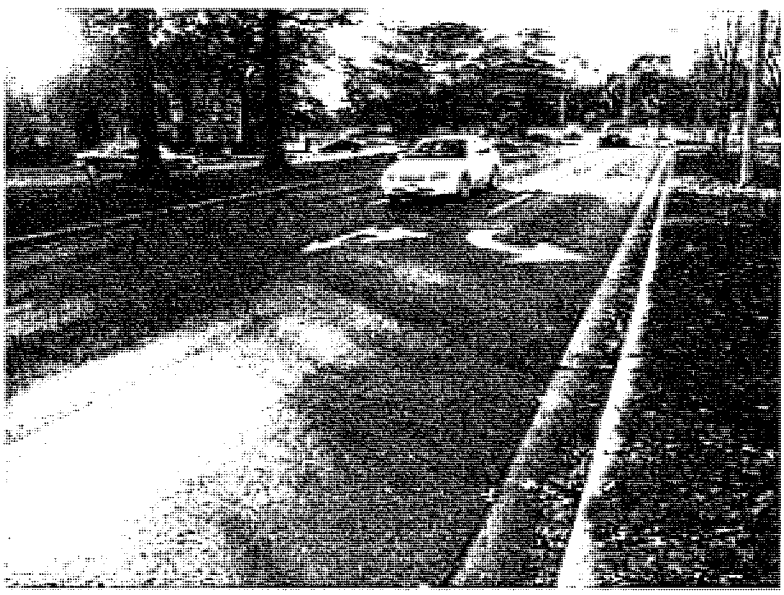
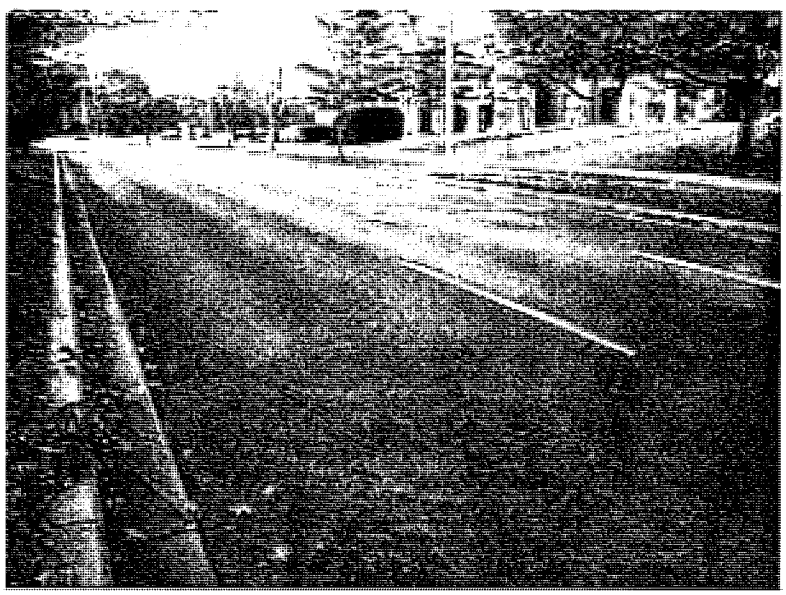


23.JPG



24.JPG

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: MD 117
and: Metropolitan Grove Rd. / Twleve Oaks Dr.
Location: Montgomery Co., MD

Counted by: LL, RB
Date: September 20, 2007
Weather: Fair, Warm
Entered by: TT

Day: Thursday

The Traffic Group

TIME	TRAFFIC FROM NORTH on: Metro. Grove Rd.					TRAFFIC FROM SOUTH on: Twelve Oaks Dr.					TRAFFIC FROM EAST on: MD 117					TRAFFIC FROM WEST on: MD 117					TOTAL N + S + E + W
	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	RIGHT	THRU	LEFT	U-TN	TOTAL	
AM																					
06:30-45	3	1	12	0	16	3	0	1	0	4	15	54	3	0	72	0	383	12	0	395	487
45-00	8	0	5	0	13	1	0	0	0	1	17	90	0	0	107	0	426	10	0	436	557
07:0-15	7	1	9	0	17	3	1	1	0	5	21	87	1	0	109	0	373	6	0	379	510
15-30	5	0	11	0	16	2	0	1	0	3	14	124	1	0	139	0	400	12	0	412	570
30-45	2	0	18	0	20	1	0	0	0	1	31	118	0	0	149	0	388	11	0	399	569
45-00	8	0	15	0	23	2	0	0	0	2	39	137	0	0	176	0	377	9	0	386	587
08:0-15	4	0	17	0	21	1	0	0	0	1	49	153	0	0	202	0	372	8	0	380	604
15-30	5	0	21	0	26	2	0	0	0	2	63	161	0	0	224	0	384	9	0	393	645
30-45	5	0	24	0	29	1	0	0	0	1	63	177	4	0	244	0	331	8	0	339	613
45-00	11	0	45	0	56	0	1	1	0	2	46	161	0	0	207	0	327	4	0	331	596
09:0-15	7	0	43	0	50	0	0	1	0	1	52	160	0	0	212	0	303	8	0	311	574
15-30	6	0	55	0	61	1	0	0	0	1	61	161	2	0	224	0	237	16	0	253	539
3 Hr Totals	71	2	275	0	348	17	2	5	0	24	471	1583	11	0	2065	0	4301	113	0	4414	5738
1 Hr Totals																					
630-730	23	2	37	0	62	9	1	3	0	13	67	355	5	0	427	0	1582	40	0	1622	2124
645-745	22	1	43	0	66	7	1	2	0	10	83	419	2	0	504	0	1587	39	0	1626	2206
07-08	22	1	53	0	76	8	1	2	0	11	105	466	2	0	573	0	1538	38	0	1576	2236
715-815	19	0	61	0	80	6	0	1	0	7	133	532	1	0	666	0	1537	40	0	1577	2330
730-830	19	0	71	0	90	6	0	0	0	6	182	569	0	0	751	0	1521	37	0	1558	2405
745-845	22	0	77	0	99	6	0	0	0	6	214	628	4	0	846	0	1464	34	0	1498	2449
08-09	25	0	107	0	132	4	1	1	0	6	221	652	4	0	877	0	1414	29	0	1443	2458
815-915	28	0	133	0	161	3	1	2	0	6	224	659	4	0	887	0	1345	29	0	1374	2428
830-930	29	0	167	0	196	2	1	2	0	5	222	659	6	0	887	0	1198	36	0	1234	2322
PEAK HOUR																					
08-09	25	0	107	0	132	4	1	1	0	6	221	652	4	0	877	0	1414	29	0	1443	2458
PM																					
04:0-15	28	0	43	0	71	0	0	0	0	0	86	260	3	7	356	0	146	6	0	152	579
15-30	18	1	40	0	59	0	0	0	0	0	44	292	0	0	336	0	128	3	0	131	526
30-45	25	0	52	0	77	1	0	0	0	1	25	354	6	1	386	0	152	2	0	154	618
45-00	14	0	51	0	65	0	0	0	0	0	24	355	3	0	382	0	163	2	0	165	612
05:0-15	38	0	49	0	87	1	0	0	0	1	19	376	2	0	397	0	162	1	0	163	648
15-30	28	0	42	0	70	0	0	0	0	0	24	316	2	0	342	2	172	3	0	177	589
30-45	25	0	39	0	64	1	0	0	0	1	20	388	3	0	411	0	236	3	0	239	715
45-00	28	0	25	0	53	0	0	0	0	0	22	323	4	0	349	0	208	2	0	210	612
06:0-15	28	0	30	0	58	1	0	0	0	1	21	344	4	0	369	0	179	3	0	182	610
15-30	24	0	31	0	55	1	0	1	0	2	23	331	2	0	356	0	159	2	0	161	574
30-45	11	0	20	0	31	2	0	0	0	2	19	344	4	0	367	0	161	1	0	162	562
45-00	8	0	28	0	36	2	0	0	0	2	18	320	6	0	344	1	159	2	0	162	544
3 Hr Totals	275	1	450	0	726	9	0	1	0	10	345	4003	39	8	4395	3	2025	30	0	2058	7189
1 Hr Totals																					
04-05	85	1	186	0	272	1	0	0	0	1	179	1261	12	8	1460	0	589	13	0	602	2335
415-515	95	1	192	0	288	2	0	0	0	2	112	1377	11	1	1501	0	605	8	0	613	2404
430-530	105	0	194	0	299	2	0	0	0	2	92	1401	13	1	1507	2	649	8	0	659	2467
445-545	105	0	181	0	286	2	0	0	0	2	87	1435	10	0	1532	2	733	9	0	744	2564
05-06	119	0	155	0	274	2	0	0	0	2	85	1403	11	0	1499	2	778	9	0	789	2564
515-615	109	0	136	0	245	2	0	0	0	2	87	1371	13	0	1471	2	795	11	0	808	2526
530-630	105	0	125	0	230	3	0	1	0	4	86	1386	13	0	1485	0	782	10	0	792	2511
545-645	91	0	106	0	197	4	0	1	0	5	85	1342	14	0	1441	0	707	8	0	715	2358
06-07	71	0	109	0	180	6	0	1	0	7	81	1339	16	0	1436	1	658	8	0	667	2290
PEAK HOUR																					
445-545	105	0	181	0	286	2	0	0	0	2	87	1435	10	0	1532	2	733	9	0	744	2564

PEDESTRIAN OBSERVATIONS

Intersection of: MD 117
and: Metropolitan Grove Rd. / Twleve Oak
Location: Montgomery Co., MD

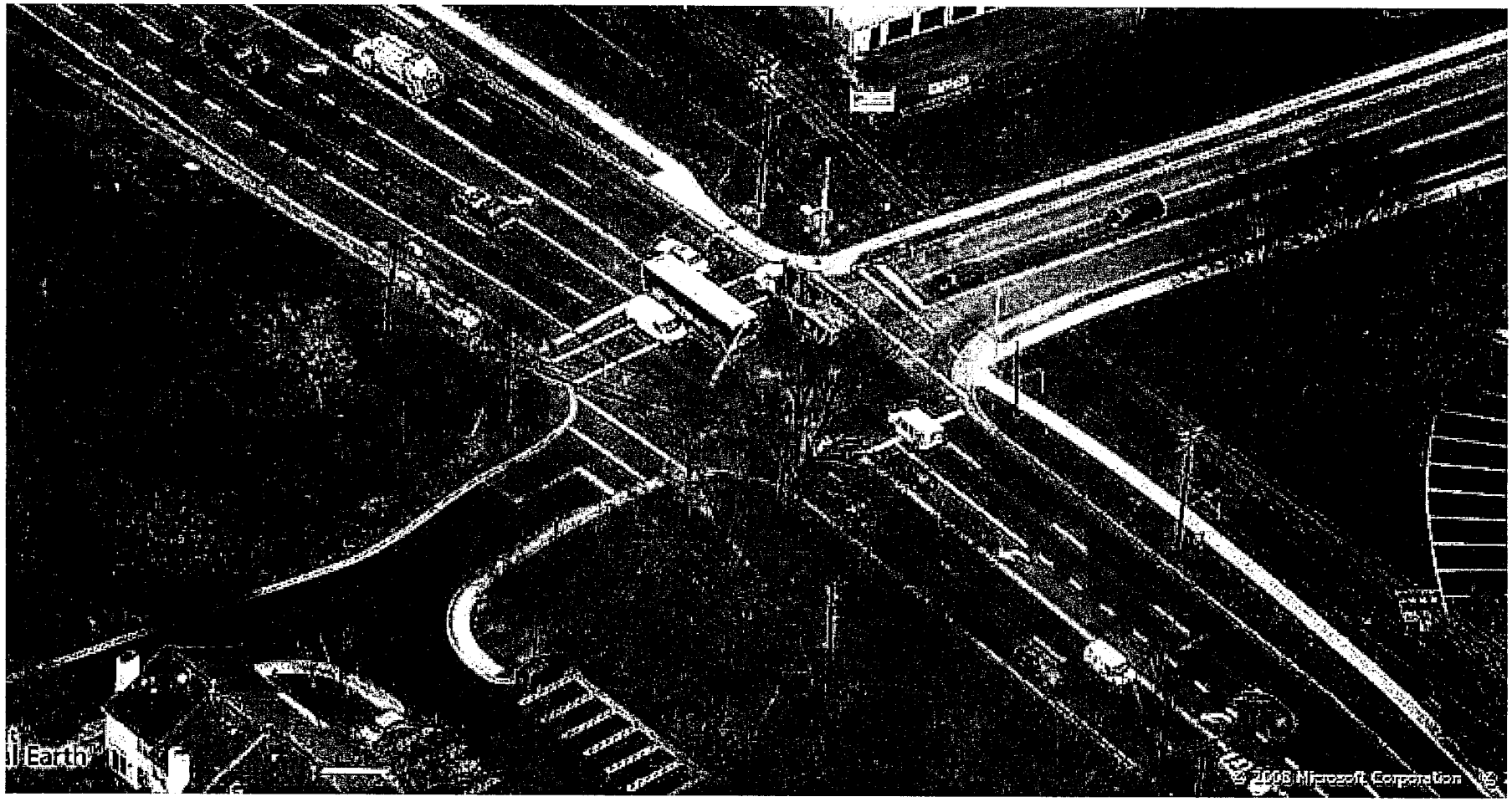
Counted by: LL, RB
Date: September 20, 2007
Weather: Fair, Warm
Entered by: TT

Day: Thursday

The Traffic Group

TIME	Metro. Grove Rd. NORTH LEG				Twelve Oaks Dr. SOUTH LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	1	0	0	0	0	0	0	0
07:0-15	3	0	0	0	0	0	0	1
15-30	1	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	2	0	0	0	0	0	0	0
08:0-15	1	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	11	0	0	0	0	0	0	1
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
30-45	1	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	0	0	0	0
15-30	1	0	1	0	0	0	0	0
30-45	4	0	0	0	0	0	0	0
45-00	0	1	0	0	0	0	0	0
06:0-15	0	0	0	0	0	0	0	0
15-30	1	0	0	0	0	0	0	0
30-45	2	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	9	1	1	0	0	0	0	0

TIME	MD 117 EAST LEG				MD 117 WEST LEG			
	ADULT		CHILDREN		ADULT		CHILDREN	
	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES	PEDESTRIANS	BICYCLES
AM								
06:30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	2	0	0	0
07:0-15	0	0	0	0	1	2	0	0
15-30	0	0	0	0	0	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
08:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	2	0	0	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
09:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	5	2	0	0
PM								
04:0-15	0	0	0	0	0	0	0	0
15-30	0	0	0	0	2	0	1	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
05:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	2	0	0	0
30-45	0	0	0	0	1	0	1	0
45-00	0	0	0	0	0	0	0	0
06:0-15	0	0	0	0	1	0	0	0
15-30	0	0	0	0	0	0	1	0
30-45	0	0	0	0	0	0	0	0
45-00	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	7	0	3	0



#9 MD 117 & Metropolitan Grove Rd/Tweleve Oaks Dr.

MD 117 / MD 124 (MO8135171)

CONGESTION RELIEF STUDY (CRS M-7)

FACT SHEET

- THIS PROJECT IS PART OF THE OVERALL CONGESTION RELIEF STUDY (CRS) IN MONTGOMERY AND PRINCE GEORGES COUNTIES. THE PURPOSE OF THE CRS IS TO LOOK AT SHORT-TERM IMPROVEMENTS NECESSARY TO RELIEVE HEAVILY CONGESTED INTERSECTIONS.

- THE WORK WILL ENCOMPASS THE AREA ALONG MD 117 FROM FIRSTFIELD ROAD TO THE SOUTHBOUND I-270 RAMP.

  - THE PROPOSED IMPROVEMENTS INCLUDE:

  - - - ADDING AN EASTBOUND THROUGH LANE WITH NO SPLIT PHASING ON MD 117

  - - - ADDING A LEFT TURN LANE FROM MD 117 EASTBOUND TO MD 124 NORTHBOUND

  - - - ADDING NEW MEDIANS, NEW SIDEWALKS AND/OR BIKEWAYS

  - - - DRAINAGE AND LANDSCAPING IMPROVEMENTS

- THIS PROJECT WAS AWARDED TO CONCRETE GENERAL INC. TOTAL CONSTRUCTION COST - $3,502,369

- THIS PROJECT'S NOTICE TO PROCEED (NTP) DATE WAS OCTOBER 1, 2003.

- ESTIMATED CONSTRUCTION COMPLETION DATE – FALL, 2005

MD 117: PHASE II (MO3575170) – (MO357A21)

METROPOLITAN GROVE ROAD TO I-270

FACT SHEET

- THIS PROJECT IS PART OF THE OVERALL MD 117 CORRIDOR PROJECT PLANNING STUDY.

- THIS PROJECT OVERLAPS THE MD 117 / MD 124 CRS PROJECT (MO8135171) WHICH IS UNDER CONSTRUCTION.

- THE WORK WILL ENCOMPASS THE AREA ALONG MD 117 FROM METROPOLITAN GROVE ROAD TO I-270.

- THE PROPOSED IMPROVEMENTS INCLUDE:

  - - - ADDING AN EASTBOUND THROUGH LANE FROM METROPOLITAN GROVE ROAD TO FIRSTFIELD ROAD ON MD 117

  - - - ADDING A WESTBOUND THROUGH LANE FROM I-270 TO METROPOLITAN GROVE ROAD ON MD 117

  - - - ADDING A LEFT TURN LANE FROM MD 117 WESTBOUND TO MD 124 SOUTHBOUND

  - - - ADDING A LEFT TURN LANE FROM MD 124 SOUTHBOUND TO MD 117 EASTBOUND. ADDING A LEFT TURN LANE FROM MD 124 NORTHBOUND TO MD 117 WESTBOUND.

  - - - ADDING NEW MEDIANS, NEW SIDEWALKS AND/OR BIKEWAYS

  - - - DRAINAGE AND LANDSCAPING IMPROVEMENTS

- THIS PROJECT IS CURRENTLY ONLY FUNDED FOR PRELIMINARY ENGINEERING.

- A PRELIMINARY INVESTIGATION WAS HELD ON NOVEMBER 13, 2003.

- SEMI-FINAL REVIEW MEETING WAS HELD ON SEPTEMBER 17, 2004.

- PRODUCTION AD DATE – JANUARY 19, 2006.

- ESTIMATED CONSTRUCTION COST - $16,884,662

MD 117: PHASE III (MO6715171) – (MO671A21)

SENECA CREEK STATE PARK TO METROPOLITAN GROVE ROAD

FACT SHEET

- THIS PROJECT IS PART OF THE OVERALL MD 117 CORRIDOR PROJECT PLANNING STUDY.
- THIS PROJECT CONNECTS TO THE MD 117: PHASE II PROJECT (MO357A21), METROPOLITAN GROVE ROAD TO I-270.
- THE WORK WILL ENCOMPASS THE AREA ALONG MD 117 FROM SENECA CREEK STATE PARK TO METROPOLITAN GROVE ROAD.
- THE PROPOSED IMPROVEMENTS INCLUDE:

  - - - ADDING AN EASTBOUND THROUGH LANE ON MD 117 FROM PHEASANT RUN DRIVE TO METROPOLITAN GROVE ROAD.

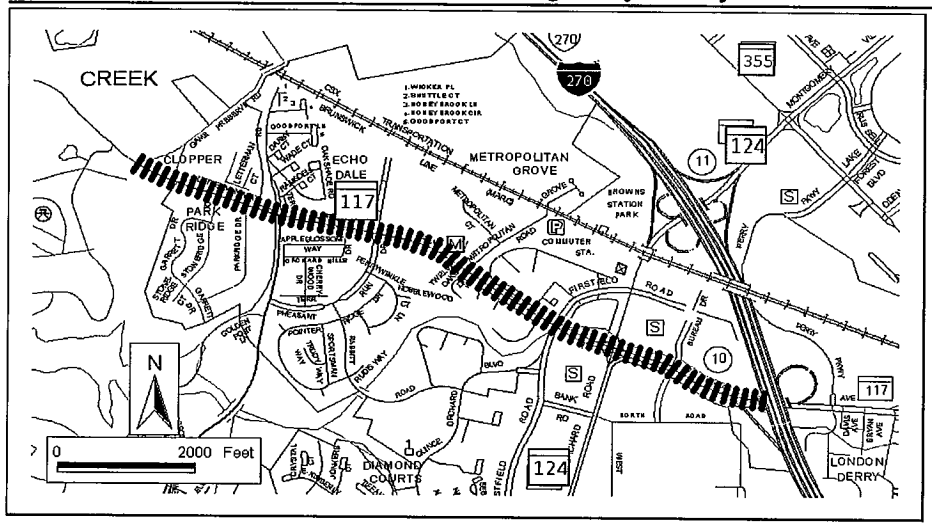
  - - - ADDING A LEFT TURN LANE FROM MD 117 WESTBOUND TO LONGDRAFT ROAD.

  - - - ADDING A LEFT TURN LANE FROM MD 117 EASTBOUND TO WATKINS MILL ROAD

  - - - ADDING NEW MEDIANS, NEW SIDEWALKS AND/OR BIKEWAYS

  - - - DRAINAGE AND LANDSCAPING IMPROVEMENTS

- THIS PROJECT IS CURRENTLY ONLY FUNDED FOR PRELIMINARY ENGINEERING.
- A PRELIMINARY INVESTIGATION WAS HELD ON MARCH 10, 2004.
- SEMI-FINAL REVIEW MEETING IS TENTATIVELY SCHEDULED FOR JUNE, 2005.
- PRODUCTION AD DATE – JUNE 7, 2006
- ESTIMATED CONSTRUCTION COST - $16,991,006



PROJECT: MD 117, Clopper Road

DESCRIPTION: Construct intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Sidewalks will be included where appropriate, including multi-use pathway on the south side. Wide curb lanes will accommodate bicycles.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
I-270/Watkins Mill Road Extended Interchange (Line 7)

Federal Funding By Year of Obligation

PHASE	FFY 2008	FFY 2009	FFY 2010	FFY 2011	FFY 2012 - 2013	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Engineering underway.

SIGNIFICANT CHANGE FROM FY 2007 - 12 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2007	CURRENT YEAR 2008	BUDGET YEAR 2009	FOR PLANNING PURPOSES ONLY ....2010....	....2011....	....2012....	....2013....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,030	1,030	0	0	0	0	0	0	0	0
Engineering	4,056	1,804	600	1,623	29	0	0	0	2,252	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	5,086	2,834	600	1,623	29	0	0	0	2,252	0
Federal-Aid	721	721	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Minor Arterial
FEDERAL - Minor Arterial
STATE SYSTEM : Secondary

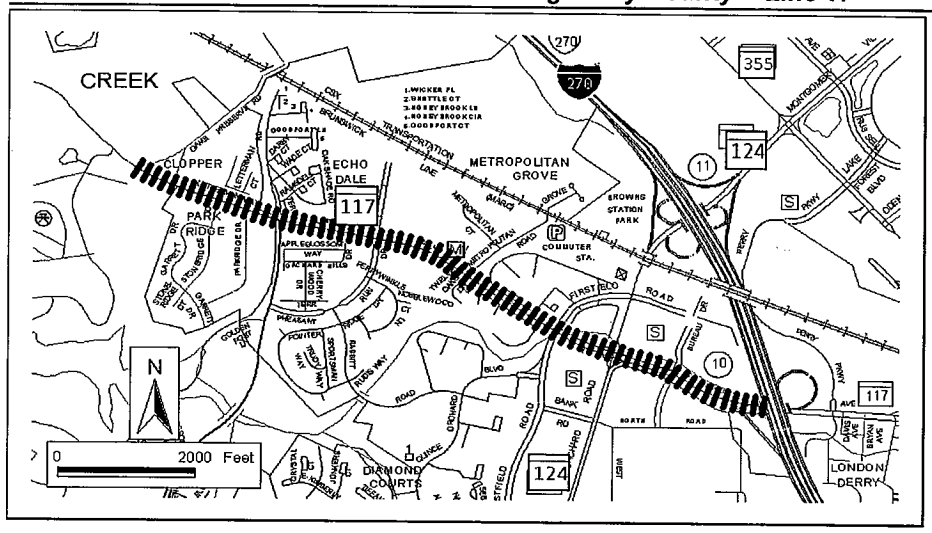
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2007) - 45,500
PROJECTED (2030) - 57,800

OPERATING COST IMPACT N/A

STIP REFERENCE # MO6711 12/01/2007

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 17

SECONDARY DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: MD 117, Clopper Road

DESCRIPTION: Construct intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Sidewalks will be included where appropriate, including multi-use pathway on the south side. Wide curb lanes will accommodate bicycles.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Project Outside PFA; Subject to Exception
- [ ] Grandfathered
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
I-270/Watkins Mill Road Extended Interchange (Line 8)

Federal Funding By Year of Obligation

PHASE	FFY 2007	FFY 2008	FFY 2009	FFY 2010	FFY 2011 - 2012	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Engineering underway.

SIGNIFICANT CHANGE FROM FY 2006 - 11 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2006	CURRENT YEAR 2007	BUDGET YEAR 2008	FOR PLANNING PURPOSES ONLY ....2009....	....2010....	....2011....	....2012....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,030	1,030	0	0	0	0	0	0	0	0
Engineering	4,056	1,668	125	550	1,713	0	0	0	2,388	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	5,086	2,698	125	550	1,713	0	0	0	2,388	0
Federal-Aid	721	721	0	0	0	0	0	0	0	0

FUNCTION :

STATE - Minor Arterial

FEDERAL - Minor Arterial

STATE SYSTEM : Secondary

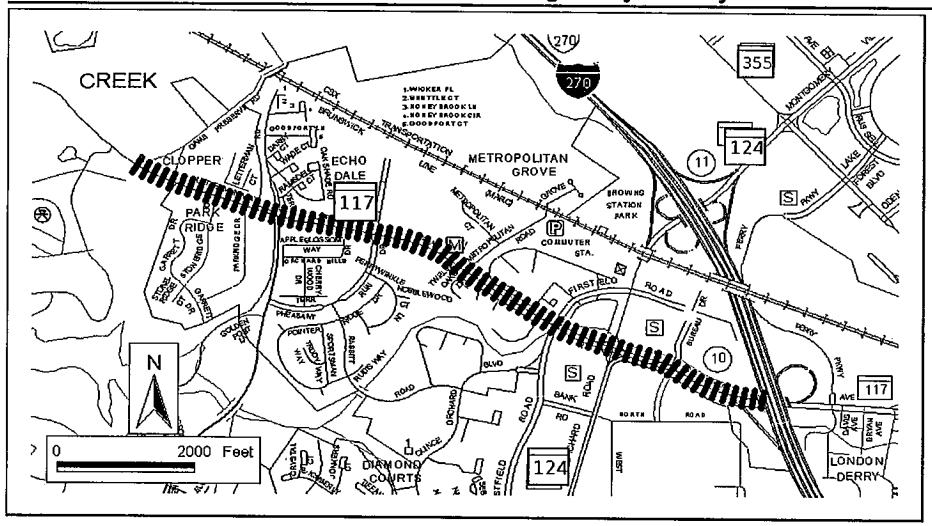
DAILY TRAFFIC : (USAGE IMPACTS)

CURRENT (2005) - 44,900

PROJECTED (2030) - 57,800

OPERATING COST IMPACT: N/A

STIP REFERENCE # MO6711 12/01/2006



PROJECT: MD 117, Clopper Road

DESCRIPTION: Construct intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Sidewalks will be included where appropriate, including multi-use pathway on the south side. Wide curb lanes will accommodate bicycles.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
East/West Intersection Improvement Program (Line 8)
I-270/Watkins Mill Road Extended Interchange (Line 10)

Federal Funding By Year of Obligation

PHASE	FFY 2006	FFY 2007	FFY 2008	FFY 2009	FFY 2010 - 2011	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Engineering underway.

SIGNIFICANT CHANGE FROM FY 2005 - 10 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

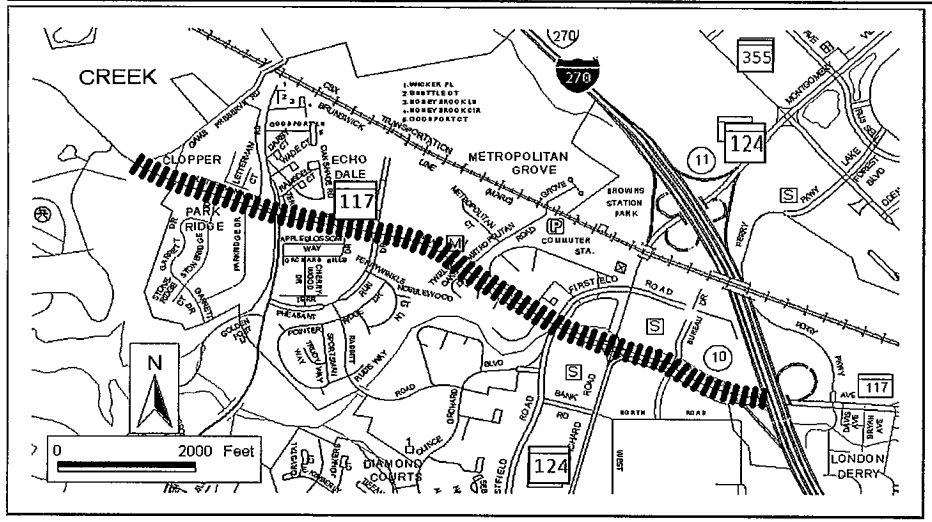
PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2005	CURRENT YEAR 2006	BUDGET YEAR 2007	FOR PLANNING PURPOSES ONLY ....2008....	....2009....	....2010....	....2011....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,030	1,030	0	0	0	0	0	0	0	0
Engineering	4,056	1,467	1,544	1,045	0	0	0	0	2,589	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	5,086	2,497	1,544	1,045	0	0	0	0	2,589	0
Federal-Aid	721	721	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Minor Arterial
FEDERAL - Minor Arterial
STATE SYSTEM : Secondary
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2004) - 44,850
PROJECTED (2030) - 47,200
OPERATING COST IMPACT N/A

STIP REFERENCE # MO6711 12/01/2005

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 23

SECONDARY DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: MD 117, Clopper Road

DESCRIPTION: Construct intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Sidewalks will be included where appropriate, including multi-use pathway on the south side. Wide curb lanes will accommodate bicycles.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
I-270, at MD 117 (Line 2)
East/West Intersection Improvement Program (Line 12)
I-270/Watkins Mill Road Extended Interchange (Line 14)

Federal Funding By Year of Obligation

PHASE	FFY 2005	FFY 2006	FFY 2007	FFY 2008	FFY 2009 - 2010	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Engineering underway.

SIGNIFICANT CHANGE FROM FY 2004 - 09 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

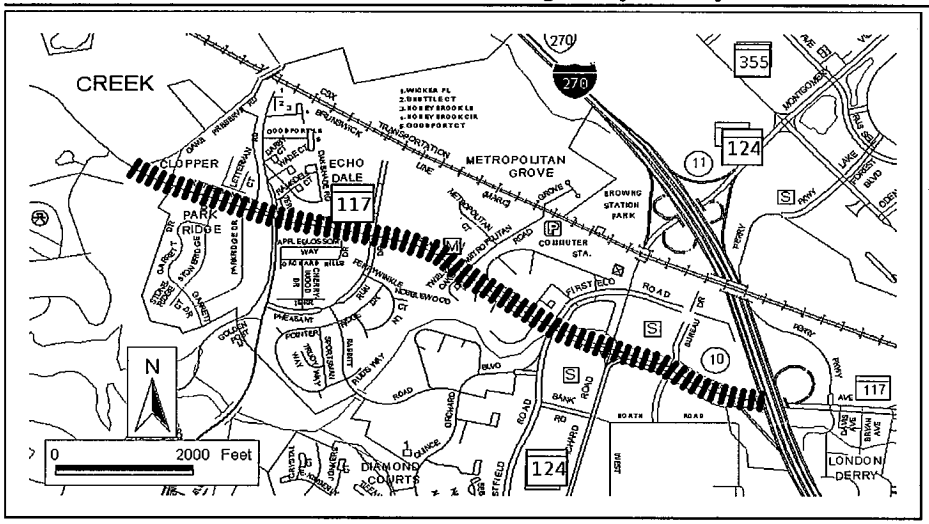
PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2004	CURRENT YEAR 2005	BUDGET YEAR 2006	FOR PLANNING PURPOSES ONLY ....2007....	....2008....	....2009....	....2010....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,029	1,029	0	0	0	0	0	0	0	0
Engineering	4,056	737	1,675	1,044	600	0	0	0	3,319	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	5,085	1,766	1,675	1,044	600	0	0	0	3,319	0
Federal-Aid	720	720	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Minor Arterial
FEDERAL - Minor Arterial
STATE SYSTEM : Secondary

DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2003) - 44,750
PROJECTED (2030) - 55,800

OPERATING COST IMPACT N/A

STIP REFERENCE # MO6711 12/01/2004



PROJECT: MD 117, Clopper Road

DESCRIPTION: Study intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Sidewalks will be included where appropriate, including multi-use pathway on the southside. Wide curb lanes will accommodate bicycles.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
I-270, MD 117 to Muddy Branch Road (Line 3)
East/West Intersection Improvement Program (Line 10)
I-270/Watkins Mill Road Extended Interchange (Line 12)

Federal Funding By Year of Obligation

PHASE	FFY 2004	FFY 2005	FFY 2006	FFY 2007	FFY 2008 - 2009	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Partial Engineering underway. An additional $0.3 million is needed to complete Engineering.

SIGNIFICANT CHANGE FROM FY 2003 - 08 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

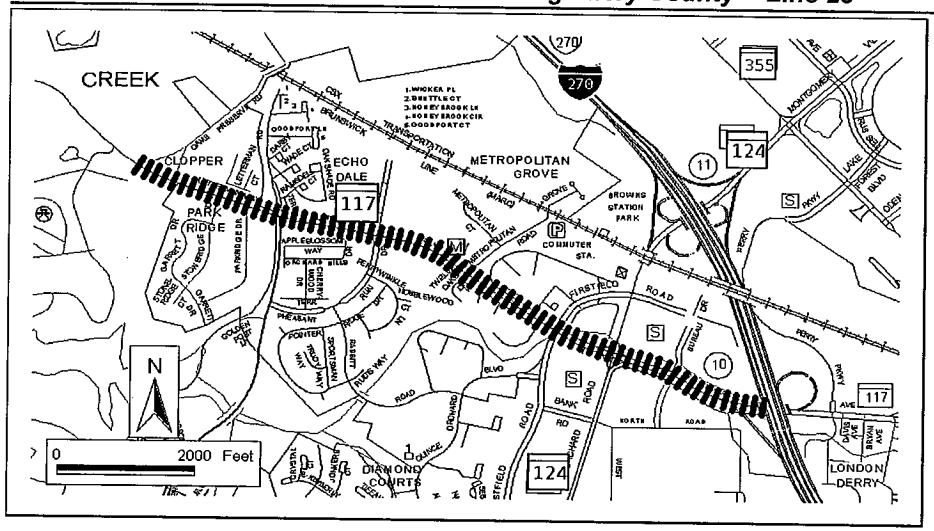
PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2003	CURRENT YEAR 2004	BUDGET YEAR 2005	FOR PLANNING PURPOSES ONLY ....2006....	....2007....	....2008....	....2009....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,028	1,028	0	0	0	0	0	0	0	0
Engineering	3,857	124	1,576	1,549	608	0	0	0	3,733	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	4,885	1,152	1,576	1,549	608	0	0	0	3,733	0
Federal-Aid	720	720	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Minor Arterial
FEDERAL - Minor Arterial
STATE SYSTEM : Secondary
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2002) - 44,400
PROJECTED (2025) - 53,600
OPERATING COST IMPACT N/A

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 23

SECONDARY DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: MD 117, Clopper Road

DESCRIPTION: Study intersection capacity improvements from Great Seneca Park to I-270 (1.73 miles). Wide curb lanes will accommodate bicycles. Sidewalks will be included where appropriate.

JUSTIFICATION: MD 117 is a heavily traveled commuter route. Capacity improvements are needed to relieve existing and future congestion associated with planned and approved development in Germantown that will exceed the current capacity of the highway.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:

MD 117, MD 118 to Great Seneca Highway (Construction by Developers)
I-270, MD 117 to Muddy Branch Road (Construction Program)
East/West Intersection Improvement Program (Construction Program)
I-270/Watkins Mill Road Extended Interchange (D&E Program)

STATUS: Project Planning underway. Final Engineering to begin during current fiscal year.

SIGNIFICANT CHANGE FROM FY 2001 - 06 CTP: None.

Federal Funding By Year of Obligation

PHASE	FFY 2002	FFY 2003	FFY 2004	FFY 2005	FFY 2006 - 2007	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2001	CURRENT YEAR 2002	BUDGET YEAR 2003	FOR PLANNING PURPOSES ONLY ....2004....	....2005....	....2006....	....2007....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	914	764	150	0	0	0	0	0	150	0
Engineering	2,300	0	300	800	800	400	0	0	2,300	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	3,214	764	450	800	800	400	0	0	2,450	0
Federal-Aid	640	535	105	0	0	0	0	0	105	0

FUNCTION :

STATE - Minor Arterial

FEDERAL - Minor Arterial

STATE SYSTEM : Secondary

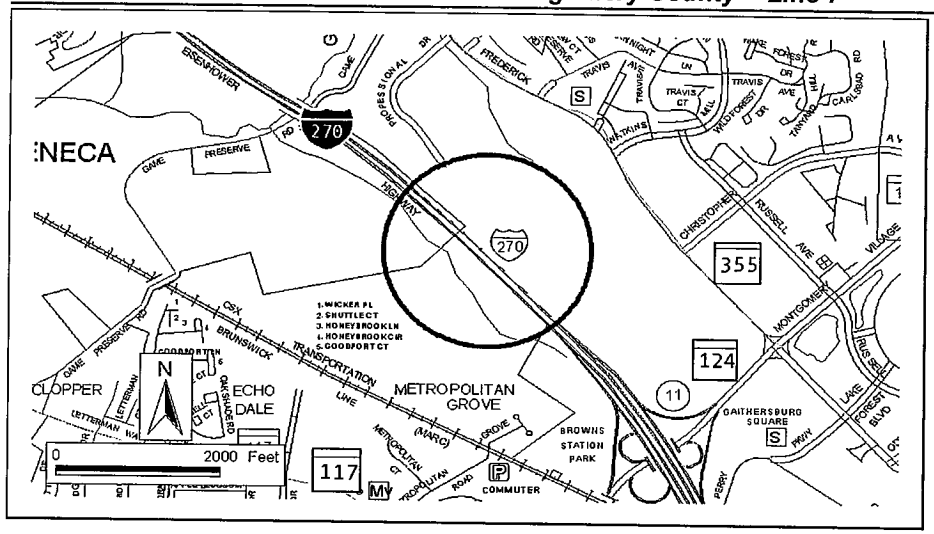
DAILY TRAFFIC : (USAGE IMPACTS)

CURRENT (2000) - 48,000

PROJECTED (2025) - 84,800

OPERATING COST IMPACT: N/A

STIP REFERENCE # 153435 12/01/2001



PROJECT: I-270/Watkins Mill Road Extended

DESCRIPTION: Construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270/MD 124 interchange and the MD 355/MD 124 intersection. It would provide access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
InterCounty Connector (Line 2)
I-270 and US 15 Multi-Modal Corridor Study (Line 6)

Federal Funding By Year of Obligation

PHASE	FFY 2008	FFY 2009	FFY 2010	FFY 2011	FFY 2012 - 2013	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Engineering underway. County contributing $2.4 million towards engineering in FY08-10. The cost shown is SHA share only.

SIGNIFICANT CHANGE FROM FY 2007 - 12 CTP: Added $5.2 million to Engineering due to the Revenue Increase.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2007	CURRENT YEAR 2008	BUDGET YEAR 2009	FOR PLANNING PURPOSES ONLY ....2010....	....2011....	....2012....	....2013....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,169	1,169	0	0	0	0	0	0	0	0
Engineering	7,345	366	0	0	404	1,000	1,000	4,575	6,979	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	8,514	1,535	0	0	404	1,000	1,000	4,575	6,979	0
Federal-Aid	818	818	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Principal Arterial
FEDERAL - Interstate
STATE SYSTEM : Primary

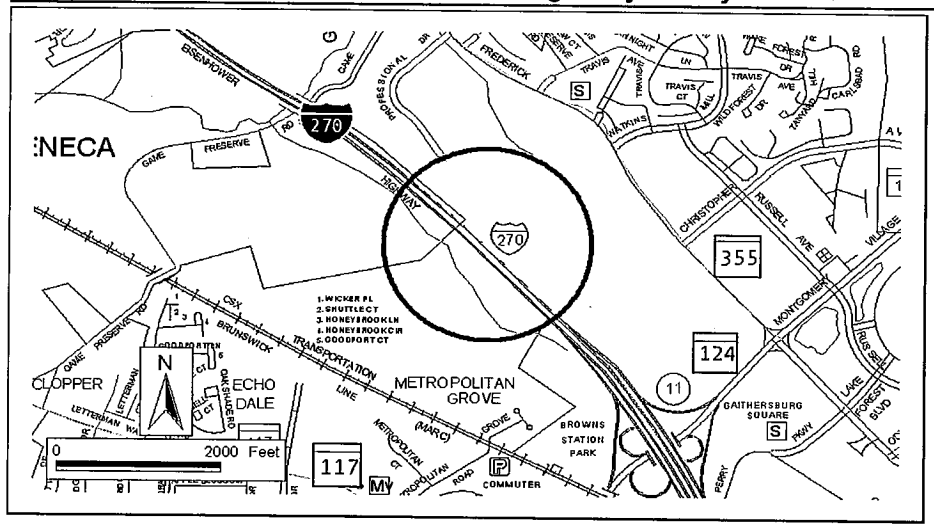
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2007) - 144,000
PROJECTED (2030) - 191,500

OPERATING COST IMPACT N/A

STIP REFERENCE # MO8391 12/01/2007

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 8

INTERSTATE DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: I-270/Watkins Mill Road Extended

DESCRIPTION: Construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270/MD 124 interchange and the MD 355/MD 124 intersection. It would provide access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Project Outside PFA; Subject to Exception
- [ ] Grandfathered
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
InterCounty Connector (Line 3)
I-270 and US 15 Multi-Modal Corridor Study (Line 7)

Federal Funding By Year of Obligation

PHASE	FFY 2007	FFY 2008	FFY 2009	FFY 2010	FFY 2011 - 2012	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Partial Engineering underway. An additional $7.6 million is needed to complete Engineering.

SIGNIFICANT CHANGE FROM FY 2006 - 11 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

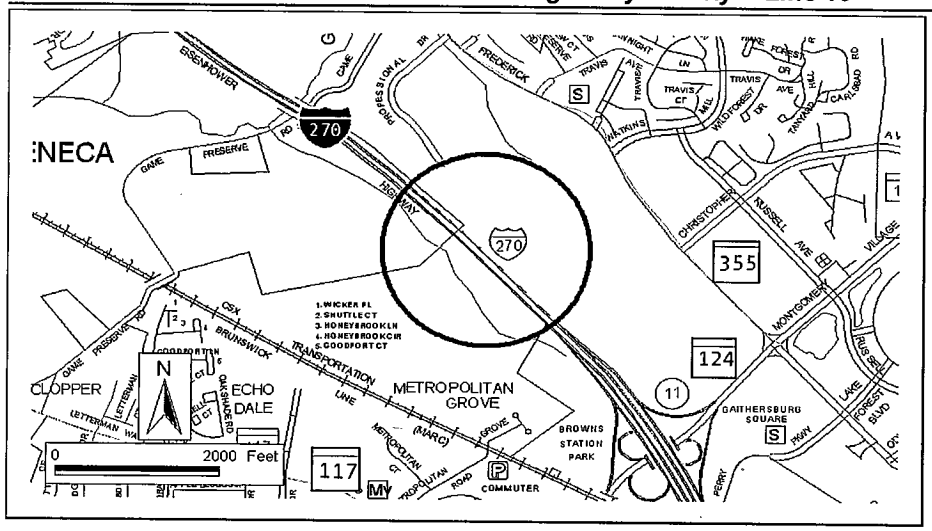
PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2006	CURRENT YEAR 2007	BUDGET YEAR 2008	FOR PLANNING PURPOSES ONLY ....2009....	....2010....	....2011....	....2012....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,166	1,166	0	0	0	0	0	0	0	0
Engineering	2,166	367	100	500	500	699	0	0	1,799	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	3,332	1,533	100	500	500	699	0	0	1,799	0
Federal-Aid	816	816	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Principal Arterial
FEDERAL - Interstate
STATE SYSTEM : Primary

DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2005) - 142,500
PROJECTED (2030) - 192,300

OPERATING COST IMPACT: N/A

STIP REFERENCE # MO8391 12/01/2006



PROJECT: I-270/Watkins Mill Road Extended

DESCRIPTION: Construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270/MD 124 interchange and the MD 355/MD 124 intersection. It would provide direct access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
InterCounty Connector (Line 4)
East/West Intersection Improvement Program (Line 8)
I-270 and US 15 Multi-Modal Corridor Study (Line 9)

Federal Funding By Year of Obligation

PHASE	FFY 2006	FFY 2007	FFY 2008	FFY 2009	FFY 2010 - 2011	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Partial Engineering underway. An additional $7.8 million is needed to complete Engineering.

SIGNIFICANT CHANGE FROM FY 2005 - 10 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2005	CURRENT YEAR 2006	BUDGET YEAR 2007	FOR PLANNING PURPOSES ONLY ....2008....	....2009....	....2010....	....2011....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,166	1,166	0	0	0	0	0	0	0	0
Engineering	1,900	0	700	1,200	0	0	0	0	1,900	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	3,066	1,166	700	1,200	0	0	0	0	1,900	0
Federal-Aid	816	816	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Principal Arterial
FEDERAL - Interstate
STATE SYSTEM : Primary

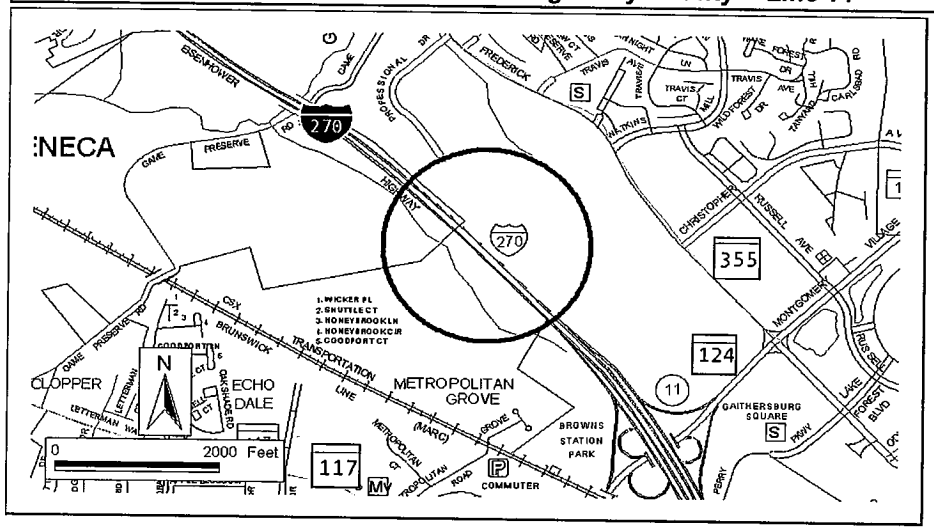
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2004) - 125,100
PROJECTED (2030) - 209,100

OPERATING COST IMPACT N/A

STIP REFERENCE # MO8391 12/01/2005

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 14

INTERSTATE DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: I-270/Watkins Mill Road Extended

DESCRIPTION: Construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270/MD 124 interchange and the MD 355/MD 124 intersection. It would provide direct access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [X] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
InterCounty Connector (Line 7)
East/West Intersection Improvement Program (Line 12)
I-270 and US 15 Multi-Modal Corridor Study (Line 13)

Federal Funding By Year of Obligation

PHASE	FFY 2005	FFY 2006	FFY 2007	FFY 2008	FFY 2009 - 2010	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Partial Engineering underway. An additional $14.0 million is needed to complete Engineering.

SIGNIFICANT CHANGE FROM FY 2004 - 09 CTP: None.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

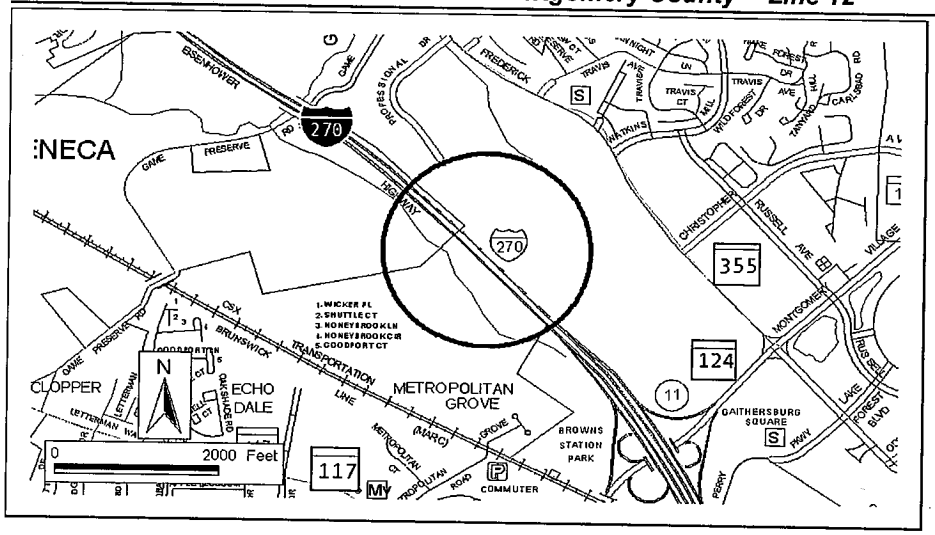
PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2004	CURRENT YEAR 2005	BUDGET YEAR 2006	FOR PLANNING PURPOSES ONLY ....2007....	....2008....	....2009....	....2010....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,161	1,161	0	0	0	0	0	0	0	0
Engineering	1,900	0	800	1,100	0	0	0	0	1,900	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	3,061	1,161	800	1,100	0	0	0	0	1,900	0
Federal-Aid	813	813	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Principal Arterial
FEDERAL - Interstate
STATE SYSTEM : Primary

DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2003) - 122,650
PROJECTED (2030) - 242,150

OPERATING COST IMPACT N/A

STIP REFERENCE # MO8391 12/01/2004



PROJECT: I-270/Watkins Mill Road Extended

DESCRIPTION: Study to construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270/MD 124 interchange and the MD 355/MD 124 intersection. It would provide direct access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:
East/West Intersection Improvement Program (Line 10)
I-270 and US 15 Multi-Modal Corridor Study (Line 11)
InterCounty Connector (Line 16)

Federal Funding By Year of Obligation

PHASE	FFY 2004	FFY 2005	FFY 2006	FFY 2007	FFY 2008 - 2009	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

STATUS: Partial Engineering to begin during the current fiscal year. An additional $11.7 million is needed to complete Engineering.

SIGNIFICANT CHANGE FROM FY 2003 - 08 CTP: Added $1.9 million to Engineering.

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2003	CURRENT YEAR 2004	BUDGET YEAR 2005	FOR PLANNING PURPOSES ONLY ....2006....	....2007....	....2008....	....2009....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,161	1,161	0	0	0	0	0	0	0	0
Engineering	1,900	0	500	1,300	100	0	0	0	1,900	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	3,061	1,161	500	1,300	100	0	0	0	1,900	0
Federal-Aid	813	813	0	0	0	0	0	0	0	0

FUNCTION :
STATE - Principal Arterial
FEDERAL - Interstate
STATE SYSTEM : Primary

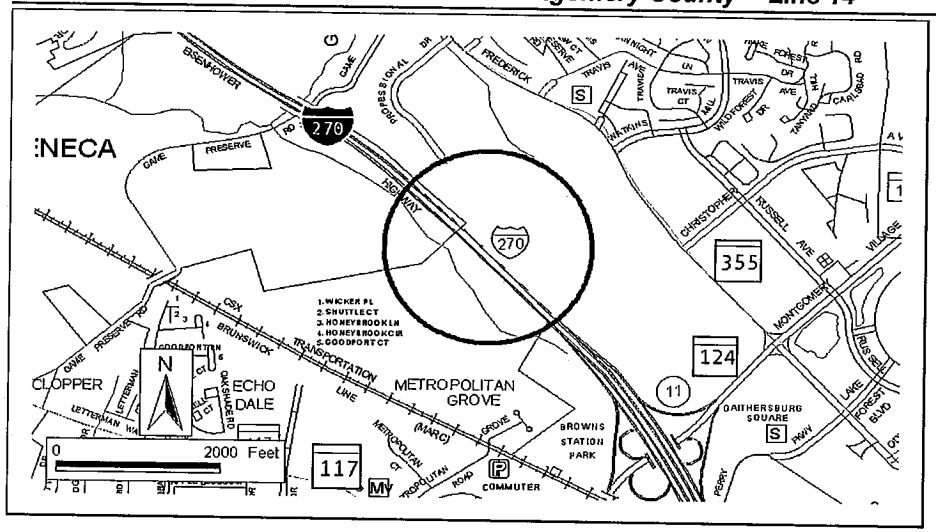
DAILY TRAFFIC : (USAGE IMPACTS)
CURRENT (2002) - 119,600
PROJECTED (2025) - 213,500

OPERATING COST IMPACT N/A

STIP REFERENCE # MO8391 12/01/2003

STATE HIGHWAY ADMINISTRATION -- Montgomery County -- Line 14

INTERSTATE DEVELOPMENT AND EVALUATION PROGRAM



PROJECT: I-270 / Watkins Mill Road Extended

DESCRIPTION: Study to construct a new interchange at Watkins Mill Road Extended.

JUSTIFICATION: This project would support economic development and relieve existing congestion at the I-270 / MD 124 interchange and the MD 355 / MD 124 intersection. It would provide direct access from I-270 to the Metropolitan Grove Road (MARC) commuter rail station.

SMART GROWTH STATUS:

- [ ] Project Not Location Specific or Location Not Determined
- [x] Project Within PFA
- [ ] Grandfathered
- [ ] Project Outside PFA; Subject to Exception
- [ ] Exception Approved by BPW/MDOT

ASSOCIATED IMPROVEMENTS:

I-270/MD 124 Interchange (Construction Program)
East/West Intersection Improvement Program (Construction Program)
I-270 and US 15 Multi-Modal Corridor Study (D&E Program)
East/West Link Improvements (D&E Program)

STATUS: Project planning underway.

SIGNIFICANT CHANGE FROM FY 2001 - 06 CTP: None.

Federal Funding By Year of Obligation

PHASE	FFY 2002	FFY 2003	FFY 2004	FFY 2005	FFY 2006 - 2007	FEDERAL CATEGORY
PP	0	0	0	0	0	----
PE	0	0	0	0	0	----
RW	0	0	0	0	0	----
CO	0	0	0	0	0	----

POTENTIAL FUNDING SOURCE: [X] SPECIAL [X] FEDERAL [ ] GENERAL [ ] OTHER

PROJECT CASH FLOW

PHASE	TOTAL ESTIMATED COST ($000)	EXPEND THRU 2001	CURRENT YEAR 2002	BUDGET YEAR 2003	FOR PLANNING PURPOSES ONLY ....2004....	....2005....	....2006....	....2007....	SIX YEAR TOTAL	BALANCE TO COMPLETE
Planning	1,175	973	202	0	0	0	0	0	202	0
Engineering	0	0	0	0	0	0	0	0	0	0
Right-of-way	0	0	0	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0	0	0	0
Total	1,175	973	202	0	0	0	0	0	202	0
Federal-Aid	823	681	141	0	0	0	0	0	141	1

FUNCTION :

STATE - Principal Arterial

FEDERAL - Interstate

STATE SYSTEM : Primary

DAILY TRAFFIC : (USAGE IMPACTS)

CURRENT (2000) - 119,600

PROJECTED (2025) - 241,500

OPERATING COST IMPACT: N/A

STIP REFERENCE # MO8391 12/01/2001

APPENDIX B

Intersection Capacity Analysis Worksheets

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: Firstfield Rd
N/S Road: MD 124
Conditions: Existing Traffic

Date of Count: 12/3/2008
Day of Week: Wednesday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 4:30-5:30

MD 124

	R	T	L
PM	300	911	164
AM	252	1140	351

FIRSTFIELD RD

RT T L

	AM	PM
R	94	228
T	45	63
L	29	37

R
T
L

	PM	AM
L	267	255
T	47	53
R	19	24

L
LT
TR

FIRSTFIELD RD

L T TR

	L	T	R
AM	8	575	19
PM	9	1032	34

MD 124

Capacity Analysis - East/West Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
EB	255	0.53	135				135
WB	45	1.00	45				45
NB	594	0.53	315	351	1.00	351	746
SB	1392	0.53	738	8	1.00	8	
						CLV TOTAL=	926

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
EB	267	0.53	142				142
WB	64	1.00	64				64
NB	1066	0.53	565	164	1.00	164	729
SB	1211	0.53	642	9	1.00	9	
						CLV TOTAL=	935

Scenario ID - EXIST10

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: Firstfield Rd
N/S Road: MD 124
Conditions: Background Traffic

Date of Count: 12/3/2008
Day of Week: Wednesday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 4:30-5:30

MD 124

R	T	L	
318	954	164	PM
285	1158	351	AM

RT T L

FIRSTFIELD RD

	R	T	L
R	94	228	
T	45	63	
L	29	37	
	AM	PM	

PM	AM	
301	272	L
47	53	T
19	24	R

L
LT
TR

L T TR

FIRSTFIELD RD

	L	T	R
AM	8	622	19
PM	9	1061	34

MD 124

Capacity Analysis - East/West Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
EB	272	0.53	144				144
WB	45	1.00	45				45
NB	641	0.53	340	351	1.00	351	773
SB	1443	0.53	765	8	1.00	8	
						CLV TOTAL=	962

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
EB	301	0.53	160				160
WB	64	1.00	64				64
NB	1095	0.53	580	164	1.00	164	744
SB	1272	0.53	674	9	1.00	9	
						CLV TOTAL=	968

Scenario ID - BACK10

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: Firstfield Rd
N/S Road: MD 124
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Week: Wednesday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 4:30-5:30

MD 124

R	T	L	
335	954	164	PM
290	1158	351	AM

RT T L

FIRSTFIELD RD

— R
— T
— L

	AM	PM
R	94	228
T	45	63
L	29	37

PM	AM	
309	292	L
47	53	T
28	45	R

L —
LT —
TR —

L T TR

FIRSTFIELD RD

	L	T	R
AM	13	622	19
PM	26	1061	34

MD 124

Capacity Analysis - East/West Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
EB	292	0.53	155				155
WB	45	1.00	45				45
NB	641	0.53	340	351	1.00	351	780
SB	1448	0.53	767	13	1.00	13	
						CLV TOTAL=	980

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
EB	309	0.53	164				164
WB	64	1.00	64				64
NB	1095	0.53	580	164	1.00	164	744
SB	1289	0.53	683	26	1.00	26	
						CLV TOTAL=	972

Scenario ID - TOT10

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: Firstfield Rd
N/S Road: MD 124
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Week: Wednesday
Analyst: Richard Huang

Peak: 8:00-9:00
Peak: 4:30-5:30

N

MD 124

	R	T	L
PM	335	954	164
AM	290	1158	351

FIRSTFIELD RD

RT T L

	R	T	L
R	94	228	
T	45	63	
L	29	37	
	AM	PM	

	PM	AM
L	309	292
T	47	53
R	28	45

L T TR

FIRSTFIELD RD

	L	T	R
AM	13	622	19
PM	26	1061	34

MD 124

Capacity Analysis - East/West Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
EB	292	0.60	175				175
WB	45	1.00	45				45
NB	641	0.55	353	351	1.00	351	809
SB	1448	0.55	796	13	1.00	13	
						CLV TOTAL=	1,029

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
EB	309	0.60	185				185
WB	64	1.00	64				64
NB	1095	0.55	602	164	1.00	164	766
SB	1289	0.55	709	26	1.00	26	
						CLV TOTAL=	1,015

Scenario ID - TOT10

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/3/2008
N/S Road: Apt Access **Day of Count:** Wednesday
Conditions: Existing Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 9:15-10:15
Peak: 5:00-6:00

APT ACCESS

	R	T	L
PM	7	1	9
AM	6	0	22

RTL

MD 117

	R	T	L
AM	21	958	19
PM	49	1578	50

— R
— T
— LT

	PM	AM
L	6	0
T	1009	1515
R	9	5

LT —
TR —

MD 117

LTR

	L	T	R
AM	4	0	27
PM	4	0	25

APT ACCESS

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	31	1.00	31	22	1.00	22	53
SB	28	1.00	28	4	1.00	4	
EB	1520	0.53	806	19	1.00	19	825
WB	977	0.53	518	0	1.00	0	
						CLV TOTAL=	878

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	29	1.00	29	9	1.00	9	38
SB	17	1.00	17	4	1.00	4	
EB	1024	0.53	543	50	1.00	50	869
WB	1628	0.53	863	6	1.00	6	
						CLV TOTAL=	907

Scenario ID - EXIST2

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/3/2008
N/S Road: Apt Access **Day of Count:** Wednesday
Conditions: Background Traffic **Analyst:** Richard Huang

Peak: 9:15-10:15
Peak: 5:00-6:00

APT ACCESS

	R	T	L
PM	7	1	9
AM	6	0	22

RTL

MD 117

	R	T	L
AM	21	1000	19
PM	49	1744	50

— R
— T
— LT

	PM	AM
L	6	0
T	1088	1691
R	9	5

LT —
TR —

MD 117

LTR

	L	T	R
AM	4	0	27
PM	4	0	25

APT ACCESS

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	31	1.00	31	22	1.00	22	53
SB	28	1.00	28	4	1.00	4	
EB	1696	0.53	899	19	1.00	19	918
WB	1019	0.53	540	0	1.00	0	
						CLV TOTAL=	971

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	29	1.00	29	9	1.00	9	38
SB	17	1.00	17	4	1.00	4	
EB	1103	0.53	585	50	1.00	50	957
WB	1794	0.53	951	6	1.00	6	
						CLV TOTAL=	995

Scenario ID - BACK2

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117
N/S Road: Apt Access
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

Peak: 9:15-10:15
Peak: 5:00-6:00

APT ACCESS

7	1	9	PM
6	0	22	AM
R	T	L	

RTL

MD 117

R	21	49	
T	1020	1752	
L	19	50	
	AM	PM	

— R
— T
— LT

PM	AM	
6	0	L
1105	1696	T
9	5	R

LT —
TR —

MD 117

LTR

	L	T	R
AM	4	0	27
PM	4	0	25

APT ACCESS

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	31	1.00	31	22	1.00	22	53
SB	28	1.00	28	4	1.00	4	
EB	1701	0.53	902	19	1.00	19	921
WB	1039	0.53	551	0	1.00	0	
						CLV TOTAL=	974

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	29	1.00	29	9	1.00	9	38
SB	17	1.00	17	4	1.00	4	
EB	1120	0.53	594	50	1.00	50	961
WB	1802	0.53	955	6	1.00	6	
						CLV TOTAL=	999

Scenario ID - TOT2

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117 **Date of Count:** 12/3/2008
N/S Road: Apt Access **Day of Count:** Wednesday
Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 9:15-10:15
Peak: 5:00-6:00

APT ACCESS

7	1	9	PM	10
6	0	22	AM	24
R	T	L		adjusted lefts

RTL

MD 117

— R
— T
— LT

R	21	49
T	1020	1752
L	19	50
	AM	PM
adjusted lefts	95	250

30 0 adjusted lefts

PM	AM	
6	0	L
1105	1696	T
9	5	R

LT —
TR —

MD 117

LTR

adjusted lefts		L	T	R
4	AM	4	0	27
4	PM	4	0	25

APT ACCESS

Capacity Analysis

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	31	1.00	31	22	1.00	22	53
SB	30	1.00	30	4	1.00	4	
EB	1701	0.55	936	19	1.00	19	955
WB	1115	0.55	613	0	1.00	0	
						CLV TOTAL=	1,008

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	29	1.00	29	9	1.00	9	38
SB	18	1.00	18	4	1.00	4	
EB	1144	0.55	629	50	1.00	50	1107
WB	2002	0.55	1101	6	1.00	6	
						CLV TOTAL=	1,145

Scenario ID - TOT2

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: Site Access/Apt Access
N/S Road: Firstfield Rd
Conditions: Existing Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:00-9:00
Peak: 4:00-5:00

FIRSTFIELD RD

10	353	1	PM
10	303	0	AM
R	T	L	

APT ACCESS — RT T L

LTR —

R	4	0
T	2	2
L	5	3
	AM	PM

PM	AM	
9	23	L
1	1	T
6	15	R

LTR —

L T TR — SITE ACCESS

	L	T	R
AM	5	244	1
PM	20	303	10

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	245	0.53	130	0	1.00	0	171
SB	313	0.53	166	5	1.00	5	
EB	39	1.00	39	5	1.00	5	44
WB	11	1.00	11	23	1.00	23	
						CLV TOTAL=	215

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	313	0.53	166	1	1.00	1	212
SB	363	0.53	192	20	1.00	20	
EB	16	1.00	16	3	1.00	3	19
WB	5	1.00	5	9	1.00	9	
						CLV TOTAL=	231

Scenario ID - EXIST3

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: Site Access/Apt Access
N/S Road: Firstfield Rd
Conditions: Background Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

Peak: 8:00-9:00
Peak: 4:00-5:00

FIRSTFIELD RD

	R	T	L
PM	10	371	1
AM	10	336	0

APT ACCESS

RT T L

LTR

	AM	PM
R	4	0
T	2	2
L	5	3

PM	AM	
9	23	L
1	1	T
6	15	R

LTR

L T TR

SITE ACCESS

	L	T	R
AM	5	261	1
PM	20	337	10

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	262	0.53	139	0	1.00	0	188
SB	346	0.53	183	5	1.00	5	
EB	39	1.00	39	5	1.00	5	44
WB	11	1.00	11	23	1.00	23	
						CLV TOTAL=	232

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	347	0.53	184	1	1.00	1	222
SB	381	0.53	202	20	1.00	20	
EB	16	1.00	16	3	1.00	3	19
WB	5	1.00	5	9	1.00	9	
						CLV TOTAL=	241

Scenario ID - BACK3

rh, 080911\dec09\clv\3.xls-clv, f12/15/09

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: Site Access/Apt Access
N/S Road: Firstfield Rd
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

Peak: 8:00-9:00
Peak: 4:00-5:00

FIRSTFIELD RD

	R	T	L
PM	10	399	0
AM	10	402	0

APT ACCESS

RT T L

LTR

	AM	PM
R	0	0
T	0	0
L	0	0

	PM	AM
L	9	23
T	0	0
R	6	15

LTR

L T TR

SITE ACCESS

	L	T	R
AM	5	276	0
PM	20	397	0

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	276	0.53	146	0	1.00	0	223
SB	412	0.53	218	5	1.00	5	
EB	38	1.00	38	0	1.00	0	38
WB	0	1.00	0	23	1.00	23	
						CLV TOTAL=	261

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	397	0.53	210	0	1.00	0	237
SB	409	0.53	217	20	1.00	20	
EB	15	1.00	15	0	1.00	0	15
WB	0	1.00	0	9	1.00	9	
						CLV TOTAL=	252

Scenario ID - TOT3

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: Firstfield Rd
N/S Road: Apt Access/Site Access
Conditions: Existing Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 5:00-6:00

APT ACCESS

R	T	L	
9	3	35	PM
9	0	61	AM

RTL

FIRSTFIELD RD

— TR	R	14	35
— T	T	302	371
— L	L	6	18
		AM	PM

PM	AM		
26	6	L	L —
260	244	T	T —
14	2	R	TR —

FIRSTFIELD RD

LTR

	L	T	R
AM	6	1	17
PM	5	0	15

SITE ACCESS

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	24	1.00	24	61	1.00	61	85
SB	70	1.00	70	6	1.00	6	
EB	246	0.53	130	6	1.00	6	173
WB	316	0.53	167	6	1.00	6	
						CLV TOTAL=	**258**

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	20	1.00	20	35	1.00	35	55
SB	47	1.00	47	5	1.00	5	
EB	274	0.53	145	18	1.00	18	241
WB	406	0.53	215	26	1.00	26	
						CLV TOTAL=	**296**

Scenario ID - EXIST4

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: Firstfield Rd
N/S Road: Apt Access/Site Access
Conditions: Background Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:00-9:00
Peak: 5:00-6:00

APT ACCESS

R	T	L	
9	3	35	PM
9	0	61	AM

RTL

FIRSTFIELD RD

	R	T	L	
TR	14	35		
T	335	389		
L	6	18		
	AM	PM		

PM	AM	
26	6	L
294	261	T
14	2	R

L —
T —
TR —

FIRSTFIELD RD

LTR

	L	T	R
AM	6	1	17
PM	5	0	15

SITE ACCESS

Capacity Analysis

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	24	1.00	24	61	1.00	61	85
SB	70	1.00	70	6	1.00	6	
EB	263	0.53	139	6	1.00	6	191
WB	349	0.53	185	6	1.00	6	
						CLV TOTAL=	276

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	20	1.00	20	35	1.00	35	55
SB	47	1.00	47	5	1.00	5	
EB	308	0.53	163	18	1.00	18	251
WB	424	0.53	225	26	1.00	26	
						CLV TOTAL=	306

Scenario ID - BACK4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: Firstfield Rd
N/S Road: Apt Access/Site Access
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 5:00-6:00

APT ACCESS

R	T	L	
9	4	35	PM
9	1	61	AM

RTL

FIRSTFIELD RD

— TR
— T
— L

	AM	PM
R	14	35
T	335	388
L	16	53

PM	AM	
26	6	L
294	257	T
74	17	R

L —
T —
TR —

FIRSTFIELD RD

LTR

	L	T	R
AM	72	3	62
PM	33	2	32

SITE ACCESS

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	137	1.00	137	61	1.00	61	198
SB	71	1.00	71	72	1.00	72	
EB	274	0.53	145	16	1.00	16	191
WB	349	0.53	185	6	1.00	6	
						CLV TOTAL=	389

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	67	1.00	67	35	1.00	35	102
SB	48	1.00	48	33	1.00	33	
EB	368	0.53	195	53	1.00	53	250
WB	423	0.53	224	26	1.00	26	
						CLV TOTAL=	352

Scenario ID - TOT4

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/3/2008
N/S Road: Watkins Mill Rd/Pheasant Run Dr **Day of Count:** Wednesday
Conditions: Existing Traffic **Analyst:** Richard Huang

The Traffic Group®

Peak: 8:00-9:00
Peak: 5:00-6:00

WATKINS MILL RD

127	.25	174	PM
18	0	22	AM
R	T	L	

MD 117

R T L
| | |

— R
— T
— T
— L

R	127	21
T	429	1330
L	11	54
	AM	PM

PM	AM	
9	135	L
545	1474	T
8	36	R

L —
T —
TR —

L	T	TR

MD 117

	L	T	R
AM	5	12	47
PM	38	2	36

PHEASANT RUN DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	59	0.53	31	22	1.00	22	53
SB	0	1.00	0	5	1.00	5	
EB	1510	0.53	800	11	1.00	11	811
WB	429	0.53	227	135	1.00	135	
						CLV TOTAL=	864

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	38	0.53	20	174	1.00	174	194
SB	118	1.00	118	38	1.00	38	
EB	553	0.53	293	54	1.00	54	714
WB	1330	0.53	705	9	1.00	9	
						CLV TOTAL=	908

Scenario ID - EXIST5

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/3/2008
N/S Road: Watkins Mill Rd/Pheasant Run Dr **Day of Count:** Wednesday
Conditions: Background Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00
Peak: 5:00-6:00

WATKINS MILL RD

157	25	245	PM
80	0	168	AM
R	T	L	

MD 117

R T L

R	163	158	
T	435	1359	
L	11	54	
	AM	PM	

R
T
T
L

PM	AM	
68	150	L
553	1504	T
8	36	R

L
T
TR

MD 117

L T TR

	L	T	R
AM	5	12	47
PM	38	2	36

PHEASANT RUN DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	59	0.53	31	168	1.00	168	199
SB	0	1.00	0	5	1.00	5	
EB	1540	0.53	816	11	1.00	11	827
WB	435	0.53	231	150	1.00	150	
						CLV TOTAL=	1,026

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	38	0.53	20	245	1.00	245	265
SB	89	1.00	89	38	1.00	38	
EB	561	0.53	297	54	1.00	54	788
WB	1359	0.53	720	68	1.00	68	
						CLV TOTAL=	1,053

Scenario ID - BACK5

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CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/3/2008

N/S Road: Watkins Mill Rd/Pheasant Run Dr **Day of Count:** Wednesday

Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:00-9:00

Peak: 5:00-6:00

WATKINS MILL RD

157	25	245	PM
80	0	168	AM
R	T	L	

MD 117

R T L

R	163	158	
T	455	1367	
L	11	54	
	AM	PM	

— R
— T
— T
— L

PM	AM	
68	150	L
570	1509	T
8	36	R

L —
T —
TR —

MD 117

L T TR

	L	T	R
AM	5	12	47
PM	38	2	36

PHEASANT RUN DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	59	0.53	31	168	1.00	168	199
SB	0	1.00	0	5	1.00	5	
EB	1545	0.53	819	11	1.00	11	830
WB	455	0.53	241	150	1.00	150	
						CLV TOTAL=	1,029

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	38	0.53	20	245	1.00	245	265
SB	89	1.00	89	38	1.00	38	
EB	578	0.53	306	54	1.00	54	793
WB	1367	0.53	725	68	1.00	68	
						CLV TOTAL=	1,058

Scenario ID - TOT5

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117
N/S Road: Watkins Mill Rd/Pheasant Run Dr
Conditions: Total Traffic

Date of Count: 12/3/2008
Day of Count: Wednesday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:00-9:00
Peak: 5:00-6:00

WATKINS MILL RD

	R	T	L
PM	245	25	157
AM	168	0	80

MD 117

R T L

	R	T
R	158	163
T	1367	455
L	54	11
	PM	AM

R
T
T
L

	PM	AM
L	150	68
T	1509	570
R	36	8

L
T
TR

L T TR

MD 117

	L	T	R
AM	5	12	47
PM	38	2	36

PHEASANT RUN DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	59	0.55	32	168	1.00	168	200
SB	0	1.00	0	5	1.00	5	
EB	1545	0.55	850	11	1.00	11	861
WB	455	0.55	250	150	1.00	150	
						CLV TOTAL=	1,061

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	38	0.55	21	245	1.00	245	266
SB	89	1.00	89	38	1.00	38	
EB	578	0.55	318	54	1.00	54	820
WB	1367	0.55	752	68	1.00	68	
						CLV TOTAL=	1,086

Scenario ID - TOT5

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117
N/S Road: Firstfield Rd
Conditions: Existing Traffic

Date of Count: 12/4/2008
Day of Count: Thursday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:15-9:15
Peak: 4:30-5:30

FIRSTFIELD RD

313	72	12	PM
265	98	34	AM
R	T	L	

MD 117

R T L

R	10	17	— TR
T	668	1253	— T
L	171	201	— L
	AM	PM	

PM	AM	
181	206	L
842	1277	T
52	123	R

L —
T —
TR —

MD 117

L T R

	L	T	R
AM	65	67	154
PM	156	94	195

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	67	1.00	67	34	1.00	34	163
SB	98	1.00	98	65	1.00	65	
EB	1400	0.53	742	171	1.00	171	913
WB	678	0.53	359	206	1.00	206	
						CLV TOTAL=	1,076

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	94	1.00	94	12	1.00	12	288
SB	132	1.00	132	156	1.00	156	
EB	894	0.53	474	201	1.00	201	854
WB	1270	0.53	673	181	1.00	181	
						CLV TOTAL=	1,142

Scenario ID - EXIST6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117
N/S Road: Firstfield Rd
Conditions: Background Traffic

Date of Count: 12/4/2008
Day of Count: Thursday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:15-9:15
Peak: 4:30-5:30

FIRSTFIELD RD

	R	T	L
PM	323	80	12
AM	268	128	34

MD 117

R T L

R	10	17
T	701	1380
L	171	201
	AM	PM

— TR
— T
— L

	PM	AM
L	186	217
T	908	1412
R	60	153

L —
T —
TR —

MD 117

L T R

	L	T	R
AM	71	73	154
PM	185	123	195

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	73	1.00	73	34	1.00	34	199
SB	128	1.00	128	71	1.00	71	
EB	1565	0.53	829	171	1.00	171	1000
WB	711	0.53	377	217	1.00	217	
						CLV TOTAL=	1,199

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	123	1.00	123	12	1.00	12	322
SB	137	1.00	137	185	1.00	185	
EB	968	0.53	513	201	1.00	201	926
WB	1397	0.53	740	186	1.00	186	
						CLV TOTAL=	1,248

Scenario ID - BACK6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117
N/S Road: Firstfield Rd
Conditions: Total Traffic

Date of Count: 12/4/2008
Day of Count: Thursday
Analyst: Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15
Peak: 4:30-5:30

FIRSTFIELD RD

331	80	29	PM
288	128	75	AM
R	T	L	

MD 117

R T L

— TR	R	19	50
— T	T	701	1380
— L	L	171	201
		AM	PM

PM	AM	
203	222	L
908	1412	T
60	153	R

L —
T —
TR —

MD 117

L T R

	L	T	R
AM	71	73	154
PM	185	123	195

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	73	1.00	73	75	1.00	75	199
SB	128	1.00	128	71	1.00	71	
EB	1565	0.53	829	171	1.00	171	1000
WB	720	0.53	382	222	1.00	222	
						CLV TOTAL=	1,199

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	123	1.00	123	29	1.00	29	313
SB	128	1.00	128	185	1.00	185	
EB	968	0.53	513	201	1.00	201	961
WB	1430	0.53	758	203	1.00	203	
						CLV TOTAL=	1,274

Scenario ID - TOT6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117
N/S Road: Firstfield Rd
Conditions: Total Traffic

Date of Count: 12/4/2008
Day of Count: Thursday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:15-9:15
Peak: 4:30-5:30

FIRSTFIELD RD

	R	T	L
PM	331	80	29
AM	288	128	75

MD 117

R T L

R	19	50
T	701	1380
L	171	201
	AM	PM

— TR
— T
— L

	PM	AM
L	203	222
T	908	1412
R	60	153

L —
T —
TR —

L T R

MD 117

	L	T	R
AM	71	73	154
PM	185	123	195

FIRSTFIELD RD

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	73	1.00	73	75	1.00	75	199
SB	128	1.00	128	71	1.00	71	
EB	1565	0.55	861	171	1.00	171	1032
WB	720	0.55	396	222	1.00	222	
						CLV TOTAL=	1,231

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	123	1.00	123	29	1.00	29	313
SB	128	1.00	128	185	1.00	185	
EB	968	0.55	532	201	1.00	201	990
WB	1430	0.55	787	203	1.00	203	
						CLV TOTAL=	1,303

Scenario ID - TOT6

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/4/2008
N/S Road: MD 124 **Day of Count:** Thursday
Conditions: Existing Traffic **Analyst:** Richard Huang

Peak: 8:15-9:15
Peak: 4:45-5:45

MD 124

R	T	L	
190	735	154	PM
171	850	173	AM

MD 117

FR T T L

	AM	PM
R	124	190
T	659	1236
L	311	489

FR
T
T
L
L

	PM	AM
L	197	119
T	888	1397
R	45	73

L
L
T
T
TR

L T T R

MD 117

	L	T	R
AM	21	467	449
PM	58	660	460

MD 124

Capacity Analysis

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	284	1.00	284	173	1.00	173	472
SB	850	0.53	451	21	1.00	21	
EB	1470	0.37	544	311	0.53	165	709
WB	659	0.53	349	119	0.53	63	
						CLV TOTAL=	1,181

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	660	0.53	350	154	1.00	154	504
SB	735	0.53	390	58	1.00	58	
EB	933	0.37	345	489	0.53	259	759
WB	1236	0.53	655	197	0.53	104	
						CLV TOTAL=	1,263

Scenario ID - EXIST7

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/4/2008
N/S Road: MD 124 **Day of Count:** Thursday
Conditions: Background Traffic **Analyst:** Richard Huang

Peak: 8:15-9:15
Peak: 4:45-5:45

MD 124

R	T	L	
219	749	154	PM
178	861	173	AM

MD 117

FR T T L

R	124	190	FR
T	680	1314	T
L	370	505	T
	AM	PM	L
			L

PM	AM	
212	150	L
929	1480	T
55	94	R

L L T T TR

MD 117

L T T R

	L	T	R
AM	26	483	461
PM	78	674	518

MD 124

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	265	1.00	265	173	1.00	173	482
SB	861	0.53	456	26	1.00	26	
EB	1574	0.37	582	370	0.53	196	778
WB	680	0.53	360	150	0.53	80	
						CLV TOTAL=	1,260

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	674	0.53	357	154	1.00	154	511
SB	749	0.53	397	78	1.00	78	
EB	984	0.37	364	505	0.53	268	808
WB	1314	0.53	696	212	0.53	112	
						CLV TOTAL=	1,319

Scenario ID - BACK7

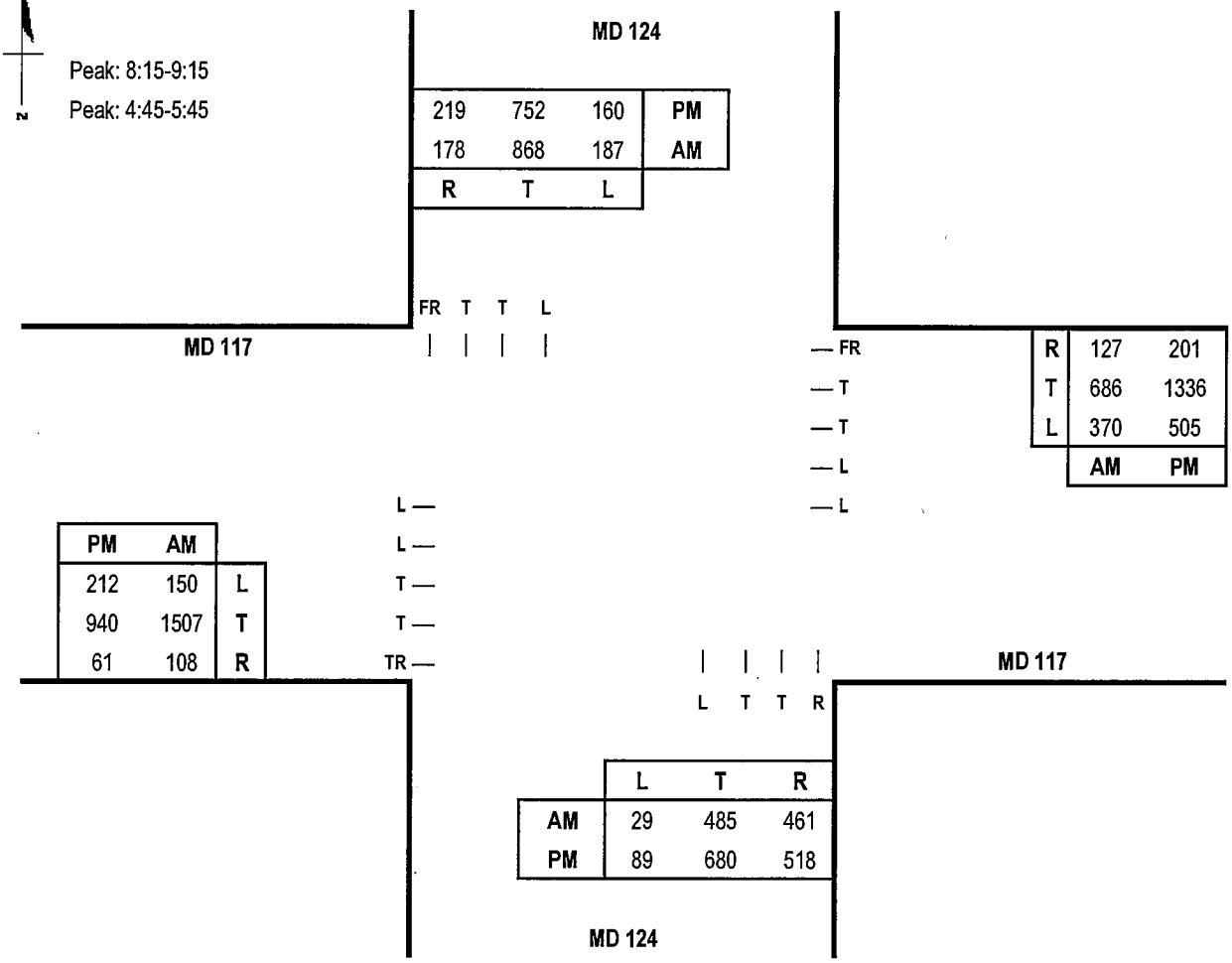
CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/4/2008
N/S Road: MD 124 **Day of Count:** Thursday
Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15
Peak: 4:45-5:45



Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	265	1.00	265	187	1.00	187	489
SB	868	0.53	460	29	1.00	29	
EB	1615	0.37	598	370	0.53	196	794
WB	686	0.53	364	150	0.53	80	
						CLV TOTAL=	1,283

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	680	0.53	360	160	1.00	160	520
SB	752	0.53	399	89	1.00	89	
EB	1001	0.37	370	505	0.53	268	820
WB	1336	0.53	708	212	0.53	112	
						CLV TOTAL=	1,340

Scenario ID - TOT7

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117
N/S Road: MD 124
Conditions: Total Traffic

Date of Count: 12/4/2008
Day of Count: Thursday
Analyst: Richard Huang

The Traffic Group®

Peak: 8:15-9:15
Peak: 4:45-5:45

MD 124

	R	T	L
PM	219	752	160
AM	178	868	187

MD 117

FR T T L

	R	T	L
AM	127	686	370
PM	201	1336	505

FR
T
T
L
L

	L	L	T	T	TR
AM	212	940	61	1507	108
PM	150				

L L T T R

MD 117

	L	T	R
AM	29	485	461
PM	89	680	518

MD 124

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	485	0.55	267	187	1.00	187	506
SB	868	0.55	477	29	1.00	29	
EB	1615	0.40	646	370	0.60	222	868
WB	686	0.55	377	150	0.60	90	
						CLV TOTAL=	1,374

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	680	0.55	374	160	1.00	160	534
SB	752	0.55	414	89	1.00	89	
EB	1001	0.40	400	505	0.60	303	862
WB	1336	0.55	735	212	0.60	127	
						CLV TOTAL=	1,396

Scenario ID - TOT7

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/9/2008
N/S Road: Bureau Dr **Day of Count:** Tuesday
Conditions: Existing Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15
Peak: 5:00-6:00

BUREAU DR

	R	T	L	
PM	288	9	118	
AM	238	122	36	

R TL L

MD 117

	R	T	L
PM	273	1776	16
AM	210	1056	230

TR
T
T
L

	PM	AM
L	65	64
T	1397	1906
R	25	114

L
T
T
TR

LT R

MD 117

	L	T	R
AM	13	10	25
PM	75	62	336

BUREAU DR

Capacity Analysis - North/South Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	23	1.00	23				23
SB	360	0.53	191				191
EB	2020	0.37	747	230	1.00	230	977
WB	1266	0.37	468	64	1.00	64	
						CLV TOTAL=	1,191

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	320	1.00	320				320
SB	297	0.53	157				157
EB	1422	0.37	526	16	1.00	16	823
WB	2049	0.37	758	65	1.00	65	
						CLV TOTAL=	1,300

Scenario ID - EXIST8

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/9/2008

N/S Road: Bureau Dr **Day of Count:** Tuesday

Conditions: Background Traffic **Analyst:** Richard Huang

The Traffic Group®

Peak: 8:15-9:15

Peak: 5:00-6:00

N

BUREAU DR

	R	T	L
PM	118	9	288
AM	36	122	238

MD 117

R TL L

R	210	273
T	1136	1870
L	230	16
	AM	PM

— TR
— T
— T
— L

	PM	AM
L	65	64
T	1496	2001
R	25	114

L —
T —
T —
TR —

MD 117

LT R

	L	T	R
AM	13	10	25
PM	75	62	336

BUREAU DR

Capacity Analysis - North/South Split

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	23	1.00	23				23
SB	360	0.53	191				191
EB	2115	0.37	783	230	1.00	230	1013
WB	1346	0.37	498	64	1.00	64	
						CLV TOTAL=	1,227

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	320	1.00	320				320
SB	297	0.53	157				157
EB	1521	0.37	563	16	1.00	16	858
WB	2143	0.37	793	65	1.00	65	
						CLV TOTAL=	1,335

Scenario ID - BACK8

CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: MD 117 **Date of Count:** 12/9/2008

N/S Road: Bureau Dr **Day of Count:** Tuesday

Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

Peak: 8:15-9:15

Peak: 5:00-6:00

N

BUREAU DR

	R	T	L
PM	118	9	288
AM	36	122	238

R TL L

MD 117

	R	T	L
AM	210	1145	230
PM	273	1903	16

TR
T
T
L

	PM	AM
L	65	64
T	1513	2042
R	25	114

L
T
T
TR

LT R

MD 117

	L	T	R
AM	13	10	25
PM	75	62	336

BUREAU DR

Capacity Analysis - North/South Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	23	1.00	23				23
SB	360	0.53	191				191
EB	2156	0.37	798	230	1.00	230	1028
WB	1355	0.37	501	64	1.00	64	
						CLV TOTAL=	1,242

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	320	1.00	320				320
SB	297	0.53	157				157
EB	1538	0.37	569	16	1.00	16	870
WB	2176	0.37	805	65	1.00	65	
						CLV TOTAL=	1,347

Scenario ID - TOT8

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117 **Date of Count:** 12/9/2008
N/S Road: Bureau Dr **Day of Count:** Tuesday
Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15
Peak: 5:00-6:00

BUREAU DR

	R	T	L
PM	118	9	288
AM	36	122	238

R TL L

MD 117

	R	T	L
AM	210	1145	230
PM	273	1903	16

TR
T
T
L

	L	T	TR
PM	65	1513	25
AM	64	2042	114

L
T
T
TR

MD 117

LT R

	L	T	R
AM	13	10	25
PM	75	62	336

BUREAU DR

Capacity Analysis - North/South Split

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	23	1.00	23				23
SB	360	0.60	216				216
EB	2156	0.40	862	230	1.00	230	1092
WB	1355	0.40	542	64	1.00	64	
						CLV TOTAL=	1,331

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	320	1.00	320				320
SB	297	0.60	178				178
EB	1538	0.40	615	16	1.00	16	935
WB	2176	0.40	870	65	1.00	65	
						CLV TOTAL=	1,433

Scenario ID - TOT8

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 9/20/2007
N/S Road: Metropolitan Grove Rd/Twelve Oaks Dr **Day of Count:** Thursday
Conditions: Existing Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15
Peak: 5:00-6:00

METROPOLITAN GROVE RD

	R	T	L
PM	119	0	155
AM	28	0	133

MD 117

R TL

R	224	85
T	740	1493
L	4	11
	AM	PM

— TR
— T
— L

	PM	AM
L	9	0
T	867	1384
R	2	29

L —
T —
T —
R —

MD 117

LTR

	L	T	R
AM	2	1	3
PM	0	0	2

TWELVE OAKS DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	6	1.00	6	133	1.00	133	139
SB	133	1.00	133	2	1.00	2	
EB	1384	0.53	734	4	1.00	4	738
WB	964	0.53	511	0	1.00	0	
						CLV TOTAL=	877

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	2	1.00	2	155	1.00	155	157
SB	155	1.00	155	0	1.00	0	
EB	867	0.53	460	11	1.00	11	845
WB	1578	0.53	836	9	1.00	9	
						CLV TOTAL=	1,002

Scenario ID - EXIST9

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for Montgomery County

E/W Road: MD 117 **Date of Count:** 9/20/2007
N/S Road: Metropolitan Grove Rd/Twelve Oaks Dr **Day of Count:** Thursday
Conditions: Background Traffic **Analyst:** Richard Huang

Peak: 8:15-9:15
Peak: 5:00-6:00

METROPOLITAN GROVE RD

	R	T	L
PM	119	0	155
AM	28	0	133

MD 117

R TL

	R	T	L
AM	224	782	4
PM	85	1659	11

TR
T
L

	PM	AM
L	9	0
T	946	1560
R	2	29

L
T
T
R

MD 117

LTR

	L	T	R
AM	2	1	3
PM	0	0	2

TWELVE OAKS DR

Capacity Analysis

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	6	1.00	6	133	1.00	133	139
SB	133	1.00	133	2	1.00	2	
EB	1560	0.53	827	4	1.00	4	831
WB	1006	0.53	533	0	1.00	0	
						CLV TOTAL=	970

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	2	1.00	2	155	1.00	155	157
SB	155	1.00	155	0	1.00	0	
EB	946	0.53	501	11	1.00	11	933
WB	1744	0.53	924	9	1.00	9	
						CLV TOTAL=	1,090

Scenario ID - BACK9

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CRITICAL LANE VOLUME (CLV) METHODOLOGY

for Montgomery County

E/W Road: MD 117 **Date of Count:** 9/20/2007

N/S Road: Metropolitan Grove Rd/Twelve Oaks Dr **Day of Count:** Thursday

Conditions: Total Traffic **Analyst:** Richard Huang

The Traffic Group®

N

Peak: 8:15-9:15

Peak: 5:00-6:00

METROPOLITAN GROVE RD

119	0	155	PM
28	0	133	AM
R	T	L	

MD 117

R TL

TR	R	224	85
T	T	802	1667
L	L	4	11
		AM	PM

PM	AM	
9	0	L
963	1565	T
2	29	R

L
T
T
R

MD 117

LTR

	L	T	R
AM	2	1	3
PM	0	0	2

TWELVE OAKS DR

Capacity Analysis

Morning Peak Hour							
	Thru Volumes			+ Opposing Lefts			AM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	6	1.00	6	133	1.00	133	139
SB	133	1.00	133	2	1.00	2	
EB	1565	0.53	829	4	1.00	4	833
WB	1026	0.53	544	0	1.00	0	
						CLV TOTAL=	972

Evening Peak Hour							
	Thru Volumes			+ Opposing Lefts			PM
Dir	VOL	x LUF	= Total	VOL	x LUF	= Total	CLV
NB	2	1.00	2	155	1.00	155	157
SB	155	1.00	155	0	1.00	0	
EB	963	0.53	510	11	1.00	11	938
WB	1752	0.53	929	9	1.00	9	
						CLV TOTAL=	1,095

Scenario ID - TOT9

CRITICAL LANE VOLUME (CLV) METHODOLOGY
for MSHA

E/W Road: MD 117 **Date of Count:** 9/20/2007
N/S Road: Metropolitan Grove Rd/Twelve Oaks Dr **Day of Count:** Thursday
Conditions: Total Traffic **Analyst:** Richard Huang

Peak: 8:15-9:15
Peak: 5:00-6:00

METROPOLITAN GROVE RD

	R	T	L	adjusted lefts
PM	119	0	155	171
AM	28	0	133	146

MD 117

R TL

	R	T	L
R	224	85	
T	802	1667	
L	4	11	
	AM	PM	

TR
T
L

	PM	AM
L	9	0
T	963	1565
R	2	29

L —
T —
T —
R —

MD 117

LTR

		L	T	R
2	AM	2	1	3
0	PM	0	0	2

adjusted lefts

TWELVE OAKS DR

Capacity Analysis

Morning Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	AM CLV
NB	6	1.00	6	133	1.00	133	148
SB	146	1.00	146	2	1.00	2	
EB	1565	0.55	861	4	1.00	4	865
WB	1026	0.55	564	0	1.00	0	
						CLV TOTAL=	1,013

Evening Peak Hour

Dir	Thru Volumes VOL	x LUF	= Total	+ Opposing Lefts VOL	x LUF	= Total	PM CLV
NB	2	1.00	2	155	1.00	155	171
SB	171	1.00	171	0	1.00	0	
EB	963	0.55	530	11	1.00	11	973
WB	1752	0.55	964	9	1.00	9	
						CLV TOTAL=	1,144

Scenario ID - TOT9

APPENDIX C

Trips Assignment

For Background Developments

TRIP GENERATION FOR SUBJECT SITE

TRIP TOTALS	MORNING PEAK HOUR			EVENING PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
NEW PHASE I						
Age-Restricted Attached housing, Local rates						
0 units	0	0	0	0	0	0
Townhouse/Condo Units (ITE-230, Units)						
224 units	17	81	98	78	38	116
Residential Trips	**17**	**81**	**98**	**78**	**38**	**116**
Recreational Community Center (ksf, ITE-495)						
30,000 sq.ft.	30	19	49	14	35	49
Government Office Building (ksf, ITE-730)						
28,000 sq.ft.	139	26	165	11	23	34
General Office (ksf, ITE-710)						
6,000 sq.ft.	18	2	20	15	71	86
Office Trips	**187**	**47**	**234**	**40**	**129**	**169**
Shopping Center (ksf, ITE-820)						
57,300 sq.ft.	68	44	112	208	225	433
High Turnover (Sit-Down) Rest. (ksf, ITE-932)						
30,400 sq.ft.	182	168	350	203	129	332
Retail/Restaurant Trips	**250**	**212**	**462**	**411**	**354**	**765**
TOTAL OFF-SITE TRIPS FOR NEW PHASE I						
	454	**340**	**794**	**529**	**521**	**1050**
TOTAL OFF-SITE TRIPS FOR OLD PHASE I						
	451	**309**	**760**	**542**	**537**	**1079**
TOTAL OFF-SITE TRIPS FOR OLD PHASE I						
trip increase	**3**	**31**	**34**	**-13**	**-16**	**-29**
% increase	**1%**	**10%**	**4%**	**-2%**	**-3%**	**-3%**

The Traffic Group

TRIP GENERATION TOTALS
FOR CASEY EAST, WITHOUT INTERCHANGE

rh, 080911\dec09\site phase1in revised sdp.xls-orginal, f12/01/09

	MORNING PEAK HOUR			EVENING PEAK HOUR			
	IN	OUT	TOTAL	IN	OUT	TOTAL	
TOTAL TRIPS BEFORE INTERNAL DEDUCTION							
Residential Trips	17	81	98	78	38	116	
Retail/Restaurant Trips	250	212	462	411	354	765	
Office Trips	187	47	234	40	129	169	
	454	**340**	**794**	**529**	**521**	**1050**	
INTERNAL TRIP DEDUCTION							
1. inter-landuse							
Residential Trips	5	23	28	26	20	46	
Retail/Restaurant Trips	28	11	39	28	35	63	
Office Trips	6	5	11	11	10	21	
Subtotal	**39**	**39**	**78**	**65**	**65**	**130**	
2. intra-landuse							
Residential Trips	0	1	1	1	0	1	1%
Retail/Restaurant Trips	25	21	46	41	35	76	10%
Office Trips	2	0	2	0	1	1	1%
Subtotal	**27**	**22**	**49**	**42**	**36**	**78**	
3. Total Internal Deduction							
Residential Trips	5	24	29	27	20	47	
Retail/Restaurant Trips	53	32	85	69	70	139	
Office Trips	8	5	13	11	11	22	
Total Deduction	**66**	**61**	**127**	**107**	**101**	**208**	
% deduction of total Trips	**15%**	**18%**	**16%**	**20%**	**19%**	**20%**	

The Traffic Group

INTERNAL CAPTURE TRIPS
FOR CASEY EAST, WITHOUT INTERCHANGE

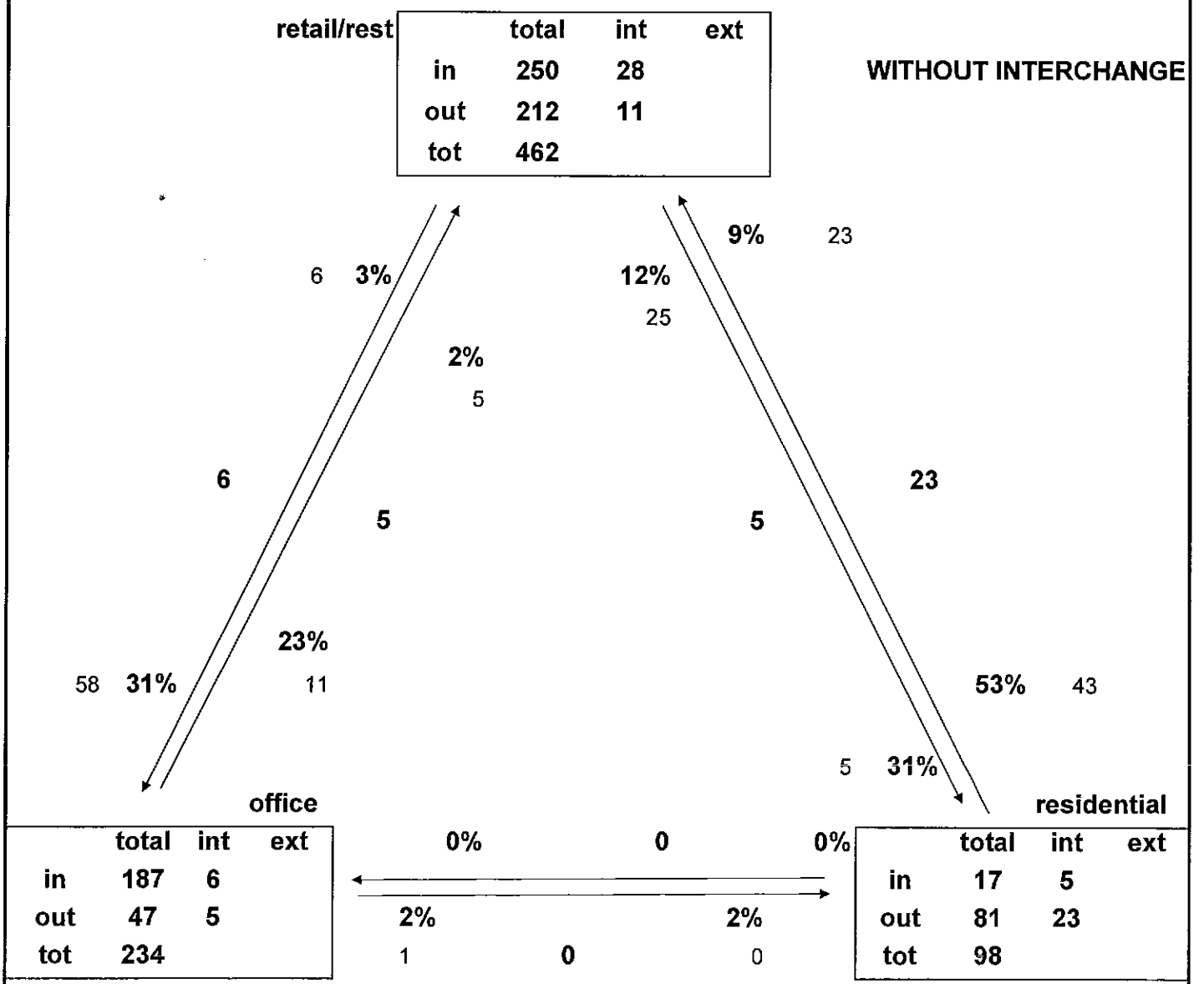
rh, 080911\dec09\site phase1\n revised sdp.xls-capture, f12/01/09

MORNING PEAK HOUR

from off	to off	1%		to off	from off	6%
	to ret	23%			from ret	31%
	to res	2%			from res	0%
from ret	to off	3%		to ret	from off	2%
	to ret	20%			from ret	20%
	to res	12%			from res	9%
from res	to off	0%		to res	from off	2%
	to ret	53%			from ret	31%
	to res	0%			from res	0%

The Traffic Group

WITHOUT INTERCHANGE



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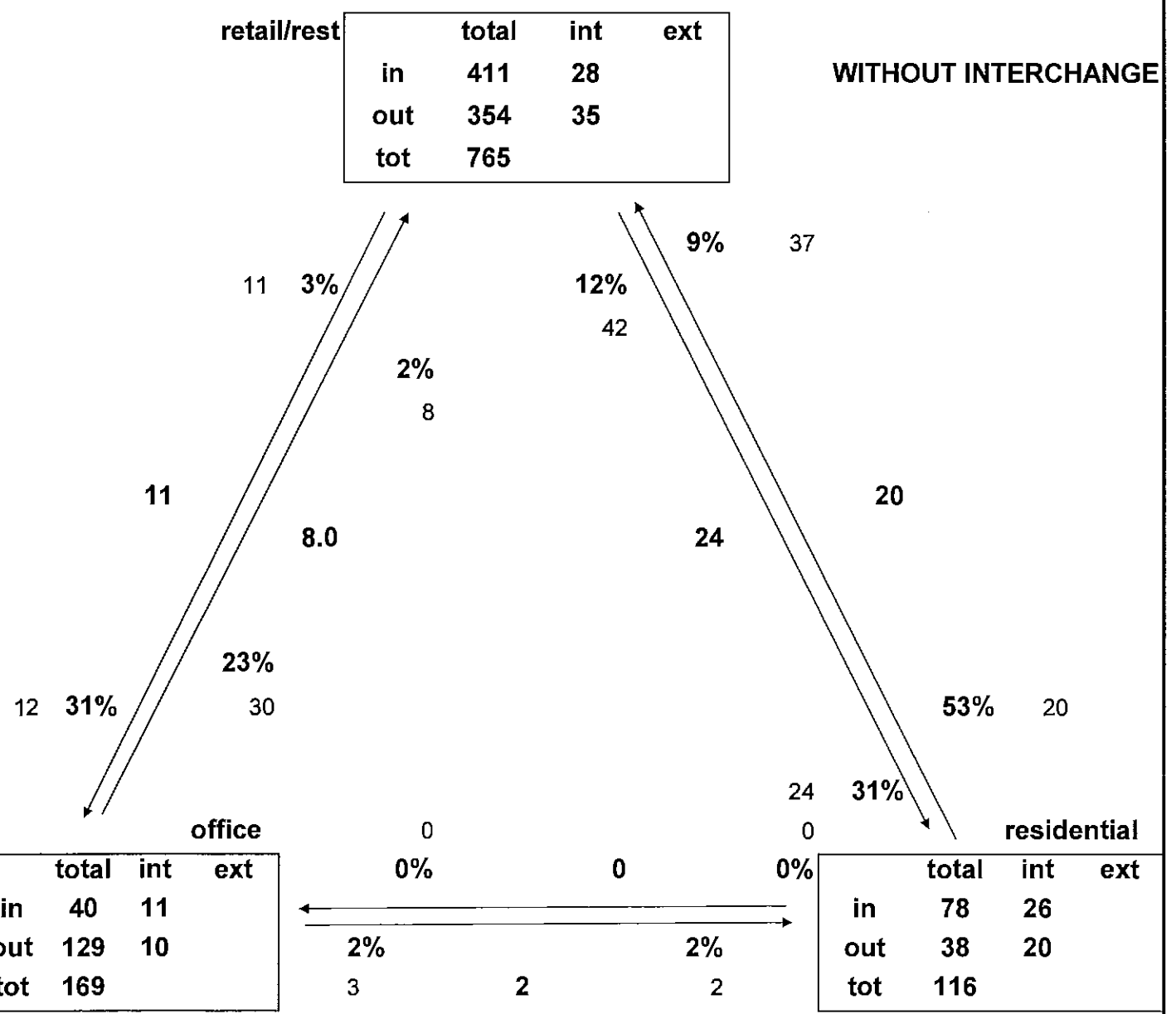
EVENING PEAK HOUR

	to off	1%		to off	from off	6%
	to ret	23%			from ret	31%
from off	to res	2%			from res	0%
	to off	3%			from off	2%
	to ret	20%			from ret	20%
from ret	to res	12%		to ret	from res	9%
	to off	0%			from off	2%
	to ret	53%			from ret	31%
from res	to res	0%		to res	from res	0%

WITHOUT INTERCHANGE



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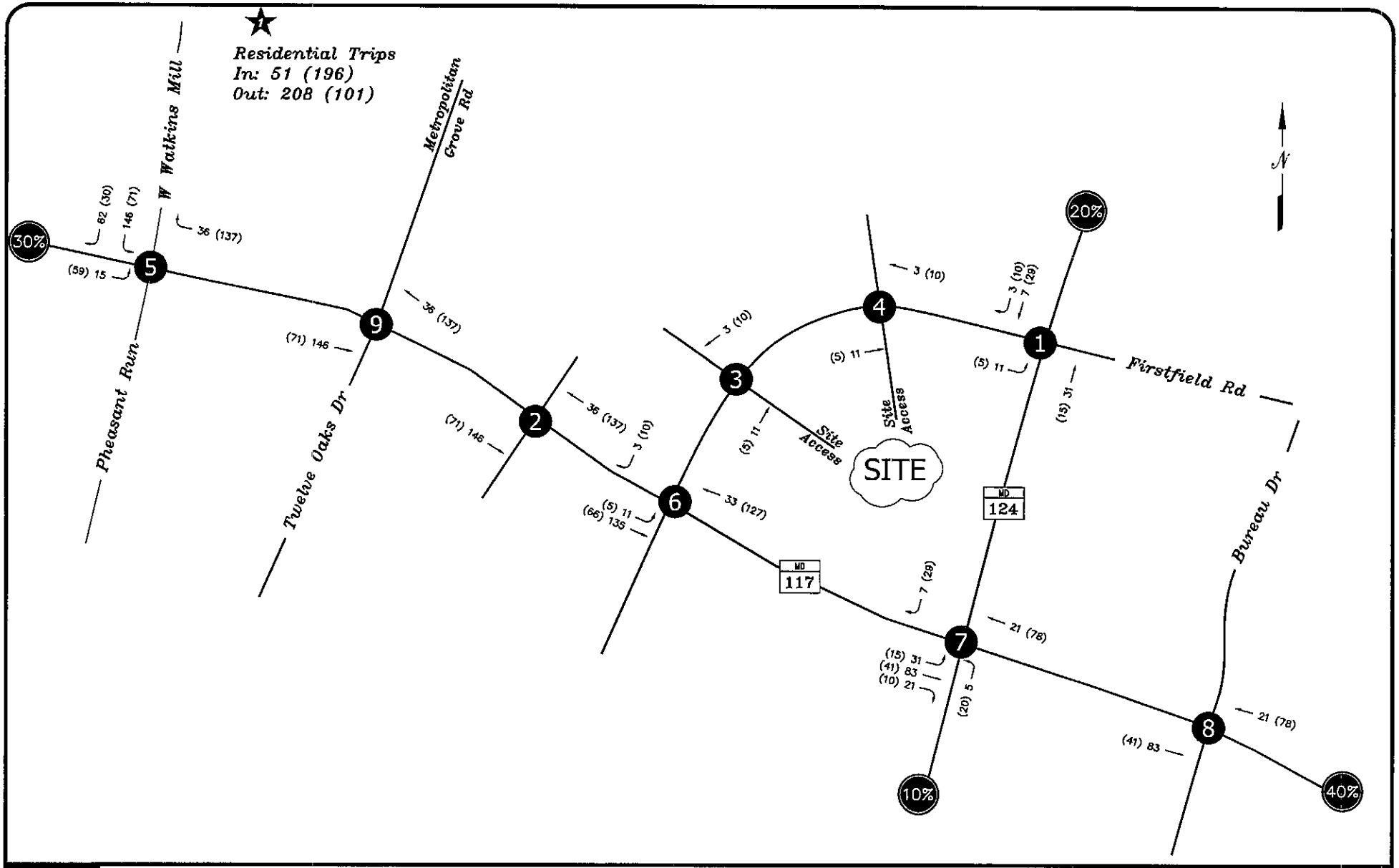


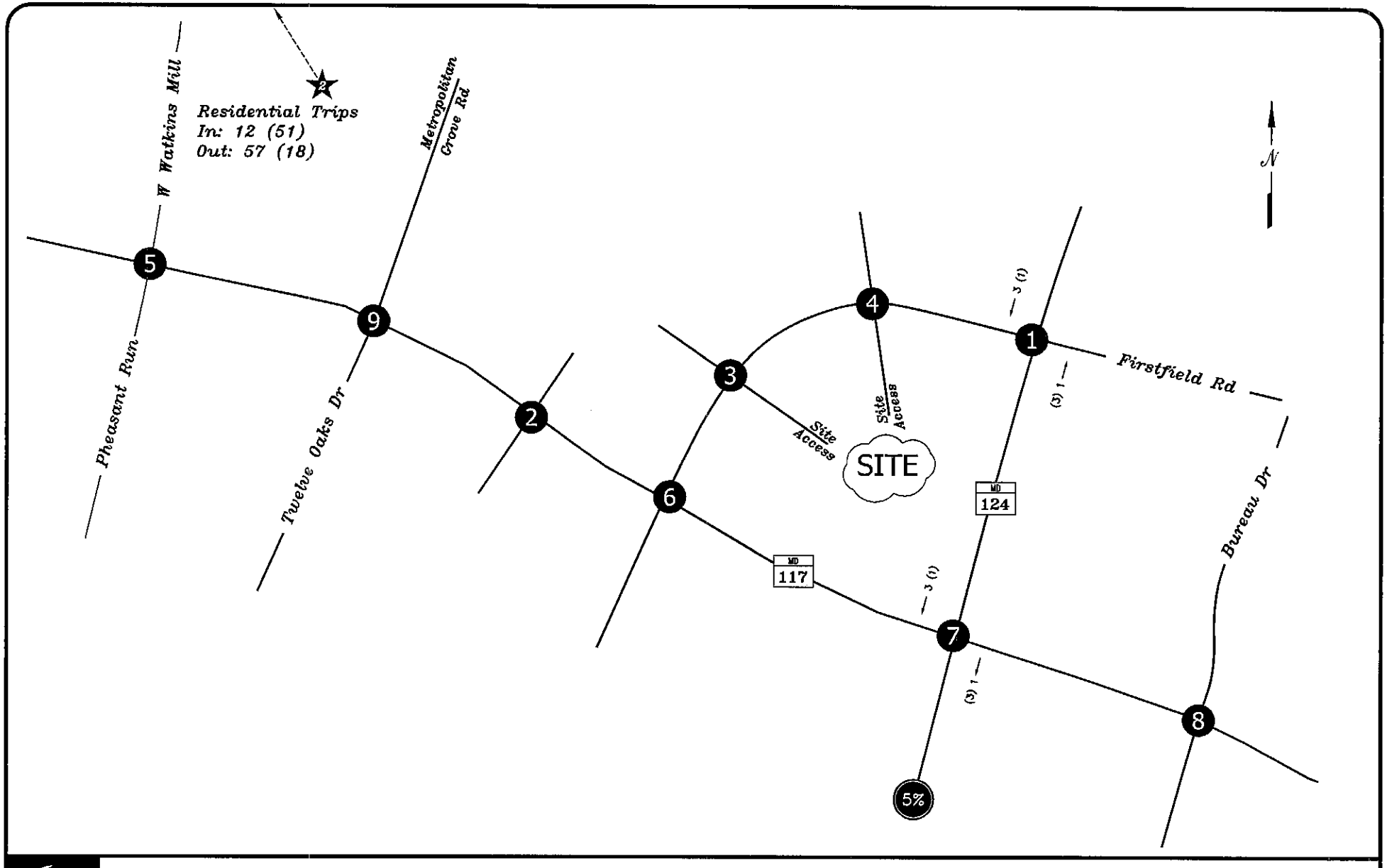
00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

The Traffic Group®

EXHIBIT C-1
NEW TRIP ASSIGNMENT FOR BACKGROUND DEVELOPMENT
WATKINS MILL TOWN CENTER PHASE I
WITHOUT INTERCHANGE (RESIDENTIAL)

rh, 080911\dec09\new.dwg-1, f12/15/09



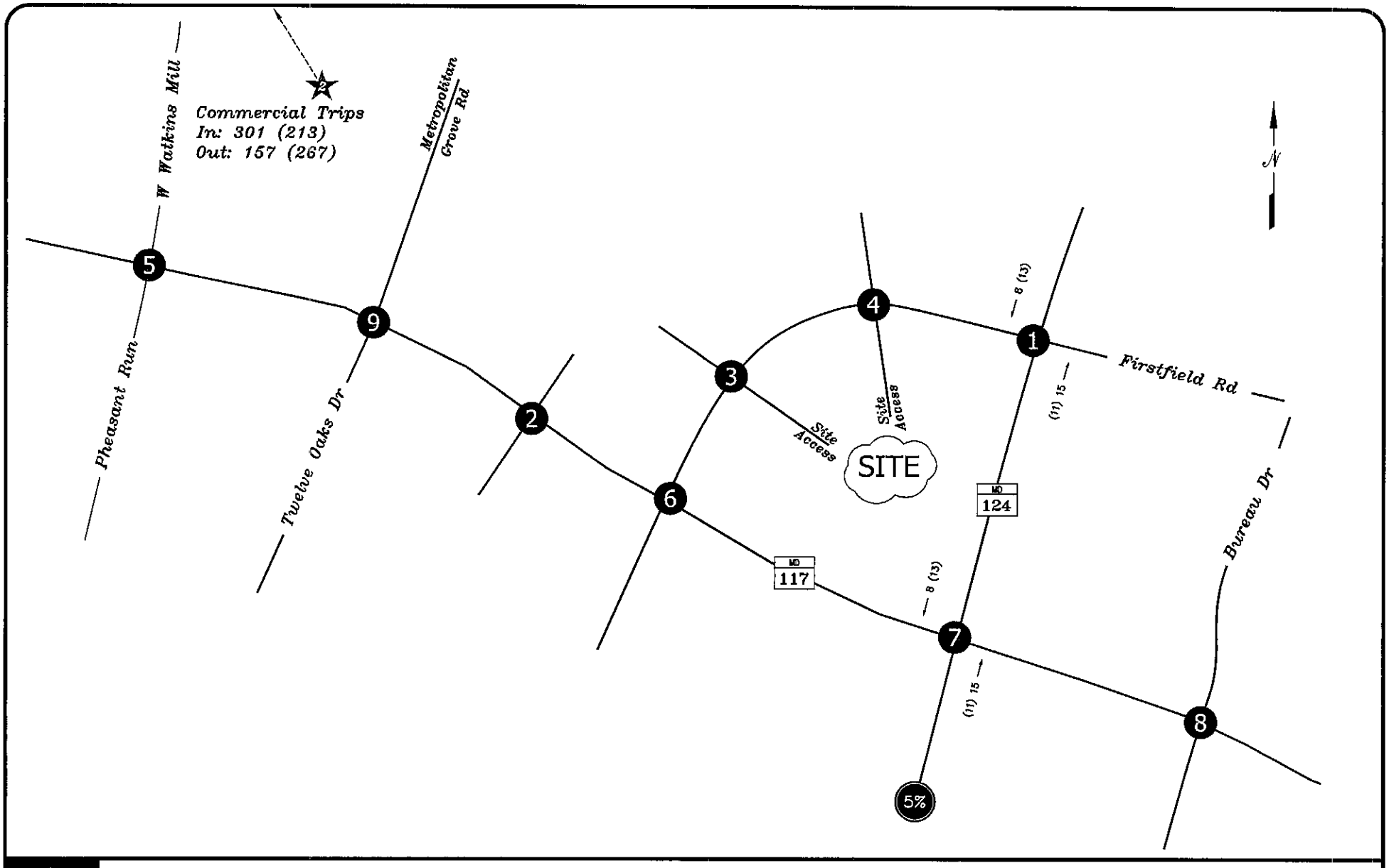
00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

The Traffic Group®

EXHIBIT C-2
NEW TRIP ASSIGNMENT FOR
BACKGROUND DEVELOPMENT
CASEY EAST - RESIDENTIAL

rh, 080911\dec09\new.dwg-3, f12/15/09



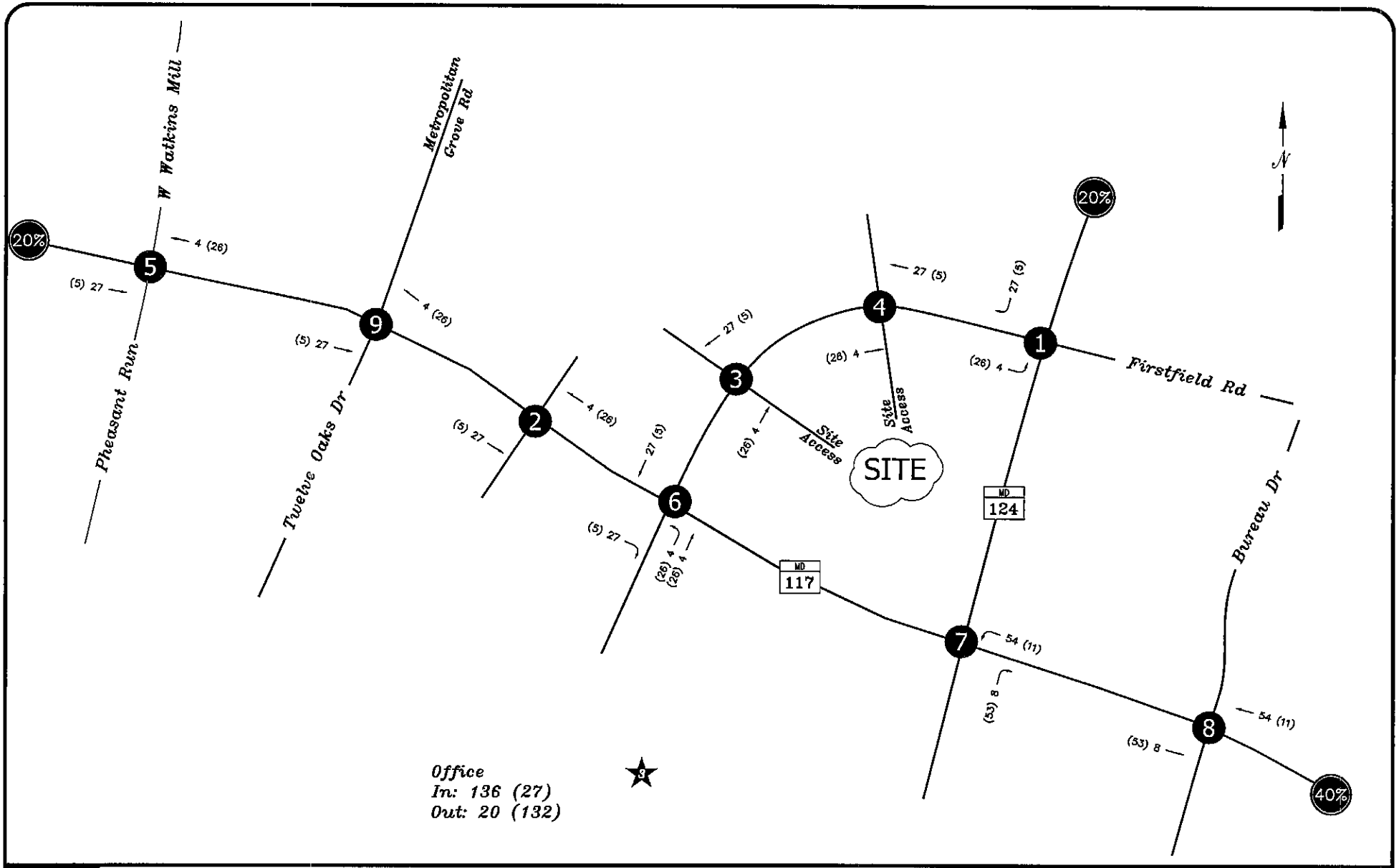
00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

The Traffic Group®

EXHIBIT C-3
NEW TRIP ASSIGNMENT FOR
BACKGROUND DEVELOPMENT
CASEY EAST - COMMERCIAL

rh, 080911\dec09\new.dwg-4, f12/15/09



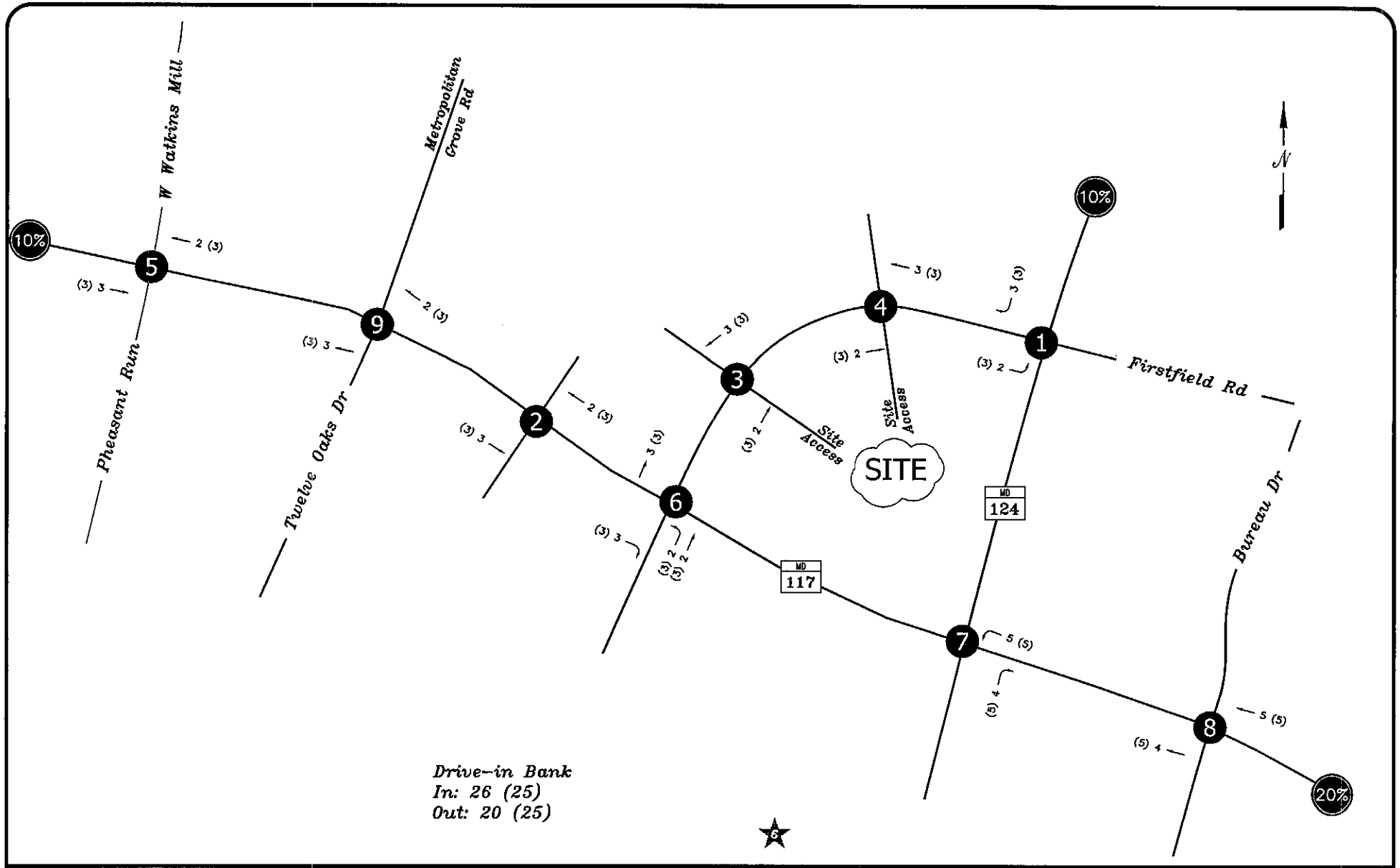
00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

The Traffic Group®

EXHIBIT C-4
NEW TRIP ASSIGNMENT FOR
BACKGROUND DEVELOPMENT
AREE BUILDING

rh, 080911\dec09\new.dwg-5, f12/15/09



00 – MORNING PEAK HOUR
(00) – EVENING PEAK HOUR

STUDY INTERSECTION

The Traffic Group®

EXHIBIT C-5
NEW TRIP ASSIGNMENT FOR
BACKGROUND DEVELOPMENT
BANK AT BANK STREET

rh, 080911\dec09\new.dwg-6, f12/15/09

RENTAL AGREEMENT
ORCHARD POND APARTMENTS

This Rental Agreement (the "Rental Agreement") is made as of the 22nd day of April 2008, to be effective as of the Closing Date (as hereinafter defined), by JPI DEVELOPMENT SERVICES, L.P., a Delaware limited partnership (hereinafter referred to, together with its successors and assigns, as "JPI"), and MONTGOMERY COUNTY, MARYLAND, a public body, corporate and politic, with a charter home rule form of local municipal government organized under the provisions of Article XI-A of the Maryland Constitution (hereinafter referred to as "County"), with regard to the multifamily residential property located in Gaithersburg, County of Montgomery, State of Maryland, commonly known as Orchard Pond Apartments and legally described on Exhibit "A" attached to this Rental Agreement and incorporated herein by reference (the "Property").

WHEREAS, JPI has entered into a certain Purchase and Sale and Escrow Agreement dated November 9, 2007 (as amended, the "Contract") to purchase 100% of the membership interests of 893 Clopper Road Investors LLC, the owner of Property (the "Membership Interests");

WHEREAS, the County, acting through the Montgomery County Department of Housing and Community Affairs, is authorized by Chapters 11A and 53A of the Montgomery County Code of 1984 (as amended, the "Code"), to enter into rental agreements providing for the retention of properties in the County as rental housing; and

WHEREAS, JPI has agreed to retain the Property as rental housing as herein provided, and the County has agreed to enter into this Rental Agreement, thereby voluntarily foregoing any and all rights of first refusal afforded under Chapters 11A, 11C, and 53A of the Code in favor of the County, the Housing Opportunities Commission of Montgomery County and any tenants association in connection with the Contract.

THEREFORE, in consideration of the above recitals and the mutual covenants, promises and obligations herein contained, the parties agree as follows:

1. The recitals set forth above are incorporated into and made a substantive part of this Rental Agreement.

2. JPI hereby agrees for the purposes of this Rental Agreement to operate the Property as rental housing for a period of seven (7) years (the "Seven Year Period") commencing on the date the Membership Interests are purchased by JPI or its Designated Assignee (as hereinafter defined) pursuant to the Contract (the "Closing Date") and expiring on the 7th anniversary of the Closing Date. JPI will notify the County of the Closing Date upon the occurrence thereof. The parties hereby acknowledge that JPI may assign, without obtaining the consent or approval of the County, its rights under the Contract prior to the closing on the purchase of the Membership Interests (hereinafter the assignee of such assignment shall be referred to as the "Designated Assignee"). Upon expiration of the Seven Year Period, JPI may

cause a written instrument to be recorded among the Land Records of Montgomery County, Maryland confirming the termination of Paragraphs 2, 3, 4 and 5 of this Rental Agreement.

3. Unless otherwise agreed to by the County and JPI, and subject to Paragraph 8 below, for the first five (5) years of the Seven Year Period (the "Controlled Rent Period"), for all tenants (other than on site employees) who reside in the Property as of the Closing Date under signed leases and who are and who remain current in all payments due to landlord under their lease, including, but not limited to, monthly rent, utility payments, and pet fees (i.e., are not more than one month in arrears in the payment obligations), who continue to abide by all terms of their lease throughout its term, and who have not prior to the Closing Date indicated an intent not to renew their lease and who do desire to renew their leases (the "Existing Tenants"), JPI agrees that rent increases in any twelve (12) month period will not exceed: (a) a base rate increase not exceeding the recommended percentage amount as established in the Voluntary Rent Increase Guidelines published annually by Montgomery County (the "Montgomery County Guidelines") over current stated rents (exclusive of any rent concessions or similar type lease promotions offered by landlord), plus (b) a capital improvement rate increase which equates to a twelve percent (12%) annualized return on the dollars spent each year by JPI to renovate or improve the Property (the sum of (a) and (b) above are referred to as the "Capital Improvement Rate"). By way of example only, if JPI spends a total of $1,000,000 in year 1 of the Controlled Rent Period and Montgomery County Guidelines allow a 3.1% increase and assuming the average current rent is $1,100.00/month, JPI would be entitled in year 1 to a total rent increase of 4.32% (3.1% + ($1,000,000.00 x 12% /12 months /747 units / $1,100.00 average monthly rent per unit)). Upon the request of the County and not more than quarterly, JPI will provide reasonably necessary documentation to the County in order to document JPI's capital improvement expenditures.

4. Unless otherwise agreed to by the County, the City of Gaithersburg, Maryland (the "City"), and JPI, during the Seven Year Period, JPI shall make available ten percent (10%) of the rental units at the Property to tenants who are at or below 60% of the area median income as established annually by the Department of Housing and Urban Development for the "Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area", or such other calculation subsequently used by the County in lieu of the "Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area" ("AMI") at rents not greater than 30% of 60% of AMI, which amount shall include the utility allowance established pursuant to the Department of Housing and Urban Development guidelines ("Utility Allowance"). For purposes of calculating the allowable rent, the applicable AMI per number of bedrooms per apartment shall be determined as follows: 1 bedroom rent calculated using AMI of 1.5 person household (i.e., average AMI of 1 person household and 2 person household), 2 bedroom rent calculated using AMI of 3 person household, and 3 bedroom rent calculated using AMI of 4.5 person household (i.e., average AMI of 4 person household and 5 person household). By way of example only, if the AMI for a family of 3 is $89,100, rent for a 2 bedroom apartment would be $1,336.50 per month, including the Utility Allowance (i.e., $89,100 x 60% x 30% / 12), it being expressly understood that AMI and the related rent calculation are subject to annual adjustments The County agrees that during the Seven Year Period a maximum of thirty-five (35) units within the Property occupied by a tenant receiving Section 8 Housing Assistance Payments vouchers, or any other similar type housing assistance voucher, may count towards satisfying the ten percent (10%) set-aside requirement set forth in this Paragraph 4.

5. Unless otherwise agreed to by the County, City, and JPI, during the Seven Year Period, JPI shall make available seven and one-half percent (7.5%) of the rental units at the Property to tenants who are at or below 80% of the AMI at rents not greater than 30% of 80% of AMI, which amount shall include the Utility Allowance. For purposes of calculating the allowable rent, the applicable AMI per number of bedrooms per apartment shall be determined as follows: 1 bedroom rent calculated using AMI of 1.5 person household (i.e., average AMI of 1 person household and 2 person household), 2 bedroom rent calculated using AMI of 3 person household, and 3 bedroom rent calculated using AMI of 4.5 person household (i.e., average AMI of 4 person household and 5 person household). By way of example only, if the AMI for a family of 3 is $89,100, rent for a 2 bedroom apartment would be $1,782.00 per month, including the Utility Allowance (i.e., $89,100 x 80% x 30% / 12), it being expressly understood that AMI and the related rent calculation are subject to annual adjustments.

6. Unless otherwise agreed to by the City and JPI, commencing upon the expiration of the Seven Year Period, and for a period of twenty-three (23) years following the expiration of the Seven Year Period (the "Twenty Three Year Period"), JPI shall make available ten percent (10%) of the rental units at the Property to tenants who are at or below 65% of the AMI at rents not greater than 25% of 65% of AMI, which amount shall not include utilities. For purposes of calculating the allowable rent, the applicable AMI per number of bedrooms per apartment shall be determined as follows: 1 bedroom rent calculated using AMI of 1.5 person household (i.e., average AMI of 1 person household and 2 person household), 2 bedroom rent calculated using AMI of 2.5 person household (i.e., average AMI of 2 person household and 3 person household), and 3 bedroom rent calculated using AMI of 3.5 person household (i.e., average AMI of 3 person household and 4 person household). By way of example only, if the AMI for a family of 3 is $89,100 and AMI for a family of 4 is $99,000, rent for a 3 bedroom apartment would be $1,273.59 per month, excluding utilities (i.e., ($89,100 + $99,000)/2 x 65% x 25% / 12), it being expressly understood that AMI and the related rent calculation are subject to annual adjustments.

7. Unless otherwise agreed to by the City and JPI, during the Twenty Three Year Period, JPI shall make available seven and one-half percent (7.5%) of the rental units at the Property to tenants who are at or below 80% of the AMI at rents not greater than 25% of 80% of AMI, which amount shall not include utilities. For purposes of calculating the allowable rent, the applicable AMI per number of bedrooms per apartment shall be determined as follows: 1 bedroom rent calculated using AMI of 1.5 person household (i.e., average AMI of 1 person household and 2 person household), 2 bedroom rent calculated using AMI of 2.5 person household (i.e., average AMI of 2 person household and 3 person household), and 3 bedroom rent calculated using AMI of 3.5 person household (i.e., average AMI of 3 person household and 4 person household). By way of example only, if the AMI for a family of 3 is $89,100 and for a family of 4 is $99,000, rent for a 3 bedroom apartment would be $1,567.50 per month, excluding utilities (i.e., ($89,100 + $99,000)/2 x 80% x 25% / 12), it being expressly understood that AMI and the related rent calculation are subject to annual adjustments.

8. JPI will be entitled to seek to recover possession of any rental unit covered by the Rental Agreement if JPI shows the existence of one of the following grounds: 1) the tenant has failed to pay rent to which JPI is legally entitled pursuant to the lease; and/or 2) the tenant has continued, after written notice to cease, to substantially violate any material terms of the lease.

In the event that JPI issues notices to recover possession of the rental units leased to tenants covered by this Rental Agreement, copies of such notices shall be sent to the County.

9. In connection with any renovation or redevelopment of the Property, JPI may relocate tenants covered by this Rental Agreement into other units and shall pay the reasonable moving costs of such tenant. In the event such tenant refuses to relocate, JPI shall have the right to refuse to renew the then current lease or to terminate the existing month-to-month tenancy, as applicable. If a tenant covered by this Rental Agreement is relocated to a non-renovated unit, then upon completion of the renovations to tenant's former unit, such tenant shall have the right to move back to the former unit and the rent for the renovated unit shall be subject to the limitations of this Rental Agreement. However, if any tenant covered by this Rental Agreement elects on their own to relocate to a renovated unit, the rent for the renovated unit shall not be subject to the limitations contained in this Rental Agreement.

10. The County acknowledges that, during the term of this Rental Agreement, JPI has the right, but not the obligation, to redevelop a portion of the Property located between Firstfield Road, Quince Orchard Road, and Clopper Road ("Proposed Redevelopment Area") and nothing in this Rental Agreement shall restrict JPI's ability to develop the Proposed Redevelopment Area. The Proposed Redevelopment Area currently contain 156 rental units and it is intended that those rental units will be demolished in connection with the development of the Proposed Redevelopment Area. At such time the units within the Proposed Redevelopment Area are demolished, the County and JPI shall execute an amendment to this Rental Agreement modifying Exhibit "A" so that the Proposed Redevelopment Area is no longer subject to the terms and provisions of this Rental Agreement. Upon recordation of such amendment, the terms and provisions of this Rental Agreement shall no longer apply to the Proposed Redevelopment Area. Since there are currently 747 rental units within the Property, upon and after recordation of the amendment, the set-aside requirements in Paragraphs 4, 5, 6, and 7 above shall be calculated based on 591 rental units, which does not include the 156 units within the Proposed Redevelopment Area. In addition to JPI's right to develop the Proposed Redevelopment Area, the County further acknowledges that, during the term of this Rental Agreement, JPI has the right, but not the obligation, to redevelop all or any other portion of the Property provided the City consents to such redevelopment. At such time that units are demolished in connection with any redevelopment, the County and JPI shall execute an amendment to this Rental Agreement modifying Exhibit "A" so that the area being redeveloped is no longer subject to the terms and provisions of this Rental Agreement. Similar to the adjustment to the set-aside requirement set forth above in this Paragraph 10, upon and after recordation of any amendment, the set-aside requirements in Paragraphs 4, 5, 6, and 7 above shall be calculated based on the number of rental units that remain subject to the terms and provisions of this Rental Agreement. The County acknowledges that any redevelopment of the Property in accordance with this Paragraph 10 during the term of this Rental Agreement, including, but not limited to, development of the Proposed Redevelopment Area, shall not be a violation of the terms of this Rental Agreement.

11. This Rental Agreement shall not be effective until the Closing Date. This Rental Agreement shall terminate and all of the parties hereto shall be released of all obligations hereunder in the event that the Contract is terminated prior to the Closing Date or in the event the Closing Date does not occur for any reason whatsoever. This Rental Agreement shall not be

amended or modified except by an instrument duly executed by the County and JPI or its affiliates or assigns.

12. The County agrees that this Rental Agreement shall be a valid and binding Agreement by JPI not to convert (as such term is defined in Chapter 53A of the Code) the Property during the Seven Year Period. Provided JPI does not increase rents for Existing Tenants more than the Capital Improvement Rate during the Controlled Rent Period in accordance with Paragraph 3 of this Rental Agreement, JPI shall be relieved of all obligations under Chapter 53A of the Code which otherwise are applicable to the displacement of tenants resulting from rent increases, including any obligation to provide tenant relocation assistance. The County agrees to issue a Certificate of Compliance upon execution of this Rental Agreement.

13. Subject to Paragraph 11 above, it is further agreed that this Rental Agreement will be recorded among the Land Records of Montgomery County, Maryland and apply to the Property described on Exhibit "A" in accordance with its terms for the benefit of the County for the Seven Year Period, which is specifically given the right to enforce it through any proceedings, at law or in equity, against any person or persons threatening to violate this Rental Agreement during the Seven Year Period. During the Twenty Three Year Period, this Rental Agreement shall apply to the Property described on Exhibit "A" in accordance with its terms for the benefit of the City, which is specifically given the right to enforce it through any proceedings, at law or in equity, against any person or persons threatening to violate this Rental Agreement during the Twenty Three Year Period. The terms of this Rental Agreement shall not terminate upon any bona fide sale of the Property or Membership Interests to a third party. Upon expiration of the Seven Year Period, JPI may cause a written instrument to be recorded among the Land Records of Montgomery County, Maryland confirming the termination of Paragraphs 2, 3, 4, and 5 of this Rental Agreement.

14. The affordable housing requirements set forth in Paragraphs 6 and 7 above shall comply with the applicable affordable housing regulations of the City ("Affordable Housing Regulations"). It is anticipated that a separate covenant will be recorded among the Land Records of Montgomery County, Maryland regarding the Affordable Housing Regulations.

15. This Rental Agreement may be executed in one or more counterparts, each of which will be deemed an original and all of which taken together will constitute the same instrument.

[SIGNATURE PAGES FOLLOW]

COUNTY:

MONTGOMERY COUNTY, MARYLAND
Department of Housing and Community Affairs

By: Richard Y. Nelson, Jr.
Title: Director of the Montgomery County Department of Housing and Community Affairs
Date: 4/23/08

COUNTY OF MONTGOMERY

STATE OF MARYLAND

On this 23rd day of April, 2008, before me personally appeared Richard Y. Nelson, Jr. known to me to be the person whose name is subscribed to the foregoing and annexed instrument as the Director of the Montgomery County Department of Housing and Community Affairs and Montgomery County as his voluntary act.

Subscribed and sworn to before me this 23rd day of April, 2008.

Notary Public

[NOTARY SEAL]

My commission Expires: SCOTT W. SHILLY
Notary Public - State of Maryland
My Commission Expires August 1, 2010

DMEAST #10018933 v8

JPI:

JPI DEVELOPMENT SERVICES, L.P., a Delaware limited partnership

By: Greg Lamb
Title: Executive Vice President
Date: April 23, 2008

COUNTY OF Fairfax
STATE OF Virginia

I HEREBY CERTIFY that on this 23 day of April, 2008, before me, a Notary Public in and for the jurisdiction aforesaid, personally appeared Executive VP, Greg Lamb, known to me (or satisfactorily proven) to be the Exec. VP of JPI Development, and that such person, in such capacity and being authorized so to do, executed the foregoing and annexed instrument for the purposes therein contained.

Subscribed and sworn to before me this 23 day of April, 2008.

Diane Ferree
Notary Public

[NOTARIAL SEAL]

COMMONWEALTH OF VIRGINIA NOTARY PUBLIC

My commission Expires: March 31, 2009

Diane Ferree
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 367759
My Commission Expires 3/31/2009

DMEAST #10018933 v8

EXHIBIT "A"

All of those parcels of land located in Montgomery County, Maryland, which are described as follows:

Section numbered One (1) in the subdivision known as "ORCHARD POND, SECTIONS 1, 2, &3", as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-820363

Section numbered Two (2) in the subdivision known as "ORCHARD POND, SECTIONS 1, 2, &3", as per plat thereof recorded in Plat Book 92 at Plat No. 10018 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-1483581

Parcel A containing 7.2766 acres, more or less, and Parcel B containing 3.8654 acres, more or less, in the subdivision known as "SECTION 3, ORCHARD POND", as per plat thereof recorded in Plat Book 159 at Plat No. 18048 among the Land Records of Montgomery County, Maryland.

Tax I.D. No. 9-201-2899812 (Parcel A)
Tax I.D. No. 9-201-2899823 (Parcel B)

Together with and subject to the perpetual non-exclusive easements and rights-of-way established by a Cross-Easement Agreement dated August 24, 1973 and recorded in Liber 4429 at folio 14.

MILLER, BEAM & PAGANELLI, INC.
CONSULTANTS IN ACOUSTICS, VIBRATION & AUDIOVISUAL SYSTEM DESIGN

ORCHARD POND DEVELOPMENT

GAITHERSBURG, MARYLAND

Environmental Noise Measurement, Analysis, and Noise Preliminary Impact Assessment

Project Number 09-079

Douglas P. Koehn, M.S.
Senior Consultant

October 5, 2009

Joint Hearing - MCC & PC
SDP 09 001
19

12040 SOUTH LAKES DRIVE, SUITE 104, RESTON, VIRGINIA 22091 (703) 506-0005 FAX (703) 506-0009 www.millerbp.com

INTRODUCTION

Miller, Beam, & Paganelli, Inc. has conducted an environmental noise assessment for the Orchard Pond site in the City of Gaithersburg, Maryland. The site is bordered by Clopper Road (Rt. 117) to the south and Quince Orchard Road (Rt. 124) to the east. The northern property line is about 550 feet from a railroad right-of-way. The northeast corner of the property is about 1,700 feet from I-270. An on-site acoustical survey was conducted to measure the noise from these sources and the site's current noise exposure. Presented below are the noise criteria, survey procedures, results, analysis, and preliminary noise mitigation recommendations.

CRITERIA

The day-night average level (DNL or L_{dn}) is the most commonly used sound level descriptor which relates the degree of environmental noise (aircraft, roadway, and railway) to its subjective annoyance. It is an A-weighted (simulating human hearing and denoted dBA) 24-hour average level with noise levels during the nighttime hours (10 p.m. through 7 a.m.) mathematically increased by 10 dBA to account for increased sensitivity to noise at night.

The City of Gaithersburg follows the Montgomery County Noise criteria, as described in their Environmental Planning Divisions's *"Staff Guidelines for the Consideration of Transportation Noise Impacts in Land Use Planning and Development."* The guidelines provide recommended maximum allowable exterior noise levels for noise sensitive land uses, which include residential applications. The guidelines recommend maximum levels of 55 dBA L_{dn} for rural areas, 60 dBA L_{dn} for basic residential, and 65 dBA L_{dn} near major transportation corridors which, based on past experiences, we would expect the Orchard Pond site to be considered. If mitigating the exterior noise levels to the guideline levels is deemed unfeasible, then a wavier can be granted, so long as

interior noise levels can be controlled so not to exceed 45 dBA L_{dn}.

The Montgomery County standards are consistent with those of HUD and many other governing and lending agencies. Based on numerous tests and studies, HUD guidelines assume that a normal building's exterior construction will provide 20 dBA of noise reduction. Thus, residential buildings exposed to noise levels less than 65 dBA L_{dn} are considered "acceptable" and should result in interior noise levels less than 45 dBA L_{dn}. Residential sites exposed to noise levels between 65 and 75 dBA L_{dn} are considered "normally unacceptable" and may require upgraded constructions to achieve noise levels less than 45 dBA L_{dn}. Sites exposed to noise level exceeding 75 dBA L_{dn} are considered "unacceptable" and building within these regions is strongly discouraged and requires special approval procedures.

The Montgomery County noise standards also provide guidelines for office, commercial, and industrial land usage. In general, these spaces are exempt from restrictions due to noise unless so heavily impacted that (1) workers may be subjected to noise levels in excess of 75 dBA L_{eq} for an 8-hour period or (2) noise impacts would significantly inhibit proper function of these spaces for their intended purposes. The HUD land use guidelines for commercial or office buildings are 5 dBA higher than for residential spaces. Norms are that exterior noise levels should not exceed 70 dBA L_{dn} and interior levels should not exceed 50 dBA L_{dn}.

SURVEY PROCEDURE

An on-site acoustical survey was conducted to assess the existing noise exposures at the Orchard Pond development site. As noted above, the site is adjacent to state highways Rt. 117 and Rt. 124 to the south and east, respectively, and about 550 feet from a railway line on the north side. Interstate highway I-270 is about 1,700 feet from the northeast corner of the property. The site is

currently developed, containing approximately 40, three-story, six unit apartment buildings along with associated parking and facilities.

Full 24-hour measurements were made at three locations, one each on the north, south, and east sides of the property. The noise assessment locations (NALs) are shown in Figure 1. In order to best measure transportation noise, and not noise from tenant activity, at NALs 1 and 3, the sound monitoring equipment was placed on top floor balconies facing the noise sources of interest. NAL 2 was made at ground floor level without concern of tenant activity since only a short lawn separated the measurement location and the road. The locations selected were the best from the available unoccupied building units. Sound pressure measurements were made using two Norsonic 140s and one Rion NA-27 integrating sound level meter. The instruments comply with the ANSI requirements for a Type 1 (Precision) accuracy, are under current calibration traceable to NIST, and were field calibrated prior to making the measurements.

SURVEY RESULTS

The loudest noise events are the horns of the passing trains. These are audible throughout the property and beyond. Trains passed an estimated 1-2 per hour, including several at night. Both diesel freight and commuter trains were witnessed, with nine scheduled of inbound MARC trains between 5:30 and 8:30 a.m. and nine scheduled outbound between 4 and 8 p.m. The location and duration that the horns are blown are not consistent, but they appear to be blown when approaching the Metropolitan Grove MARC station, which is less than 1000 feet west of the site, and again east of the site, closer to central Gaithersburg. At NAL 1, approximately 625 feet from the tracks, maximum train horn levels were consistently in the 85-90 dBA range. Approximately 1100 feet

from the tracks and partially shielded from some horn events, at NAL 2 the horns were closer to 75 dBA, or less than half as loud. At NAL 3, nearly 1500 feet from the tracks and fully shielded by other building, the train horns were audible, but their contribution to the overall noise level was small relative to traffic on Clopper Road.

Because of the size of the site and the multiple noise source, the noise distribution across the site is complicated and varies significancy depending on one's location. At NAL 1, the measured day-night average noise level was 69.5 dBA L_{dn}, with train events being the dominant noise source. Nighttime train events, which as described above are "penalized" by 10 dBA, significantly adding to the DNL level. Thus, the north side of the property, is technically noise impacted, since the noise level exceeds 65 dBA L_{dn}. In general, noise levels in the 65-70 dBA L_{dn} range are considered moderately impacted, while in the 70-75 dBA L_{dn} range is more severely impacted. The noise levels are less than 75 dBA L_{dn}, and therefore not in the "unacceptable" range.

NAL 2 was roughly 60 feet from the edge and 80 feet from the centerline of Clopper Road. At this location the measured noise level was 68.5 dBA L_{dn}, which is above 65 dBA L_{dn} and therefore technically noise impacted. However, noise levels will diminish with increased distance from the road. Using standard acoustical interpretation that the road acts as a line source, the noise levels will diminish 3 dB with doubling of distance. Calculations indicate that beyond approximately 175 feet from the edge of the road, traffic noise will diminish to less than 65 dBA L_{dn}.

The results of the measurements at NAL 3 were complicated by the presence of significant noise from insects, especially in the evening and night. However, since insect noise is mostly high

frequency (pitch) noise, and train and distant traffic noise much lower in frequency, the highest frequencies were mathematically filtered from the noise calculation. The building where the microphone was located was partially shielded of the view of Quince Orchard Road, lowering the full noise exposure. The resulting calculated levels was 62 dBA L_{dn}. Extrapolating from available traffic counts suggests that traffic volumes for Quince Orchard Road adjacent to the site are similar to Clopper Road volumes at NAL 2, therefore the potential noise levels should be about the same. Thus, locations closer than roughly 175 feet from the edge of Quince Orchard Road will be exposed to noise levels exceeding 65 dBA, and therefore noise impacted.

At some locations at the east side of the property, traffic noise from I-270 was occasionally audible. At lower elevations, the noise is well shielded and clearly is not loud enough to reach impact level. However, should a building be significancy taller than the existing three story units, the I-270 noise could contribute to the overall noise levels. The region where the noise is loudest is at the northeast corner since this closest to the highway. This area is also closest to the train tracks, and any measures taken to mitigate train noise would also reduce highway noise.

EXTRAPOLATION OF MEASUREMENT RESULTS ACROSS THE SITE

As noted above, the noise distribution across the site is complicated due to the multiple noise sources and size of the site. As indicated by the measurement results, a person or building's noise exposure depends on one's location, since noise levels diminish as distances from the sources increase and shielding of the noise source occurs.

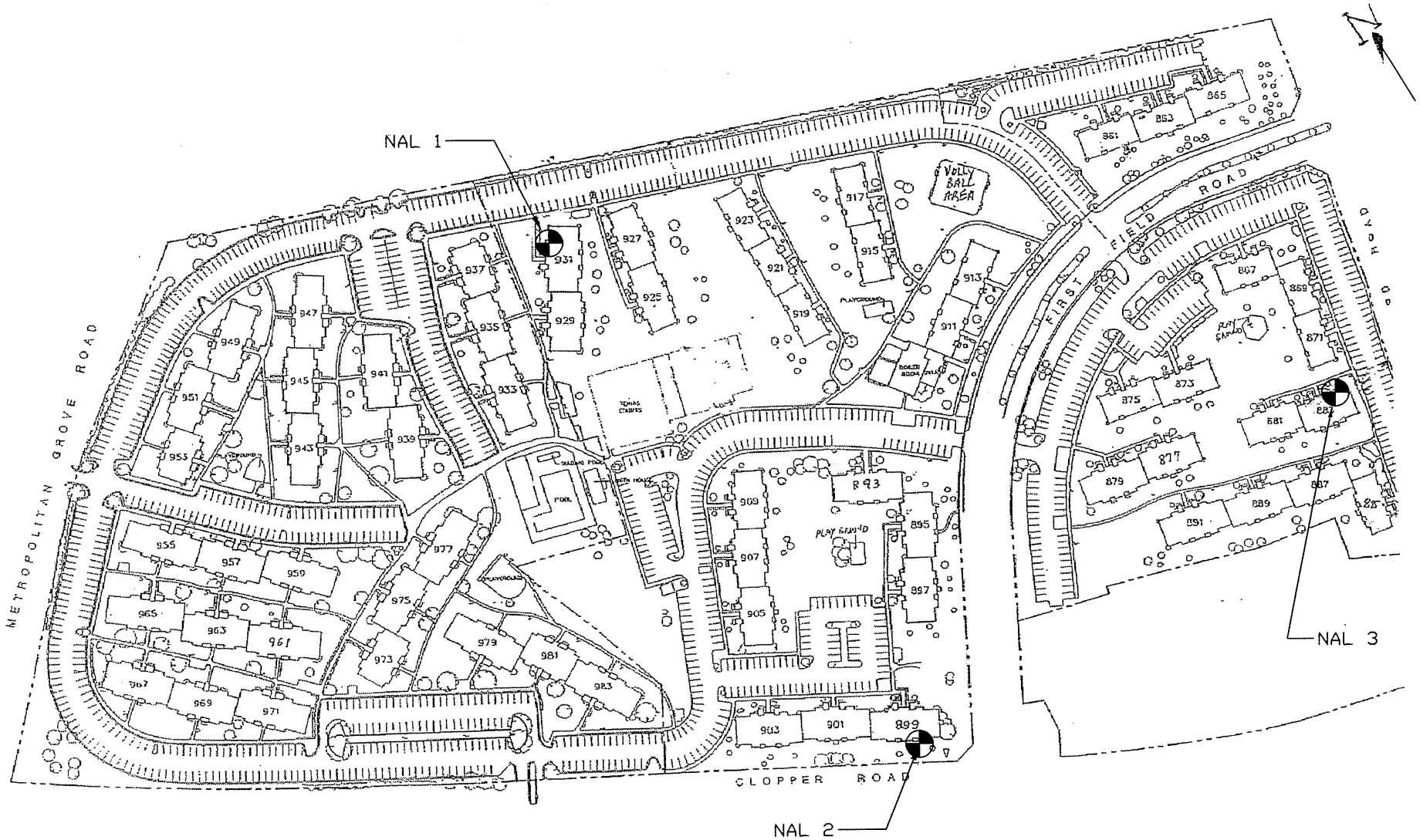
It is our understanding that this project is in the early stages of development, and the

locations, heights, and uses of buildings are currently uncertain. Because shielding, mostly by the project's buildings themselves, is such an important component in predicting the noise exposure, it is difficult to currently estimate potential noise levels toward the interior of the project without knowing more about the planned building's arrangements.

However, as the results of this preliminary noise analysis indicate, locations near the north, east, and south property boundaries will be exposed to noise levels above 65 dBA L_{dn}, meaning they will be noise impacted. Interior locations will be more distant and shielded and less than 65 dBA L_{dn}, and not impacted.

INTERIOR NOISE LEVELS

The criteria require that interior noise levels due to exterior environment noise sources are mitigated so not to exceed 45 dBA L_{dn}. Because some locations are noise impacted, those buildings may require upgrade construction methods and/or materials to achieve acceptable interior noise levels. As the project develops, we can work with the design team to assure, where necessary, proper noise mitigation is incorporated. When the noise levels vary so greatly, as is the case here, often there can be a multilevel solution where one level of noise attention is applied to the most impacted areas, and a lower level used elsewhere. Noise mitigation options would likely include an upgrade to the windows and/or walls to reduce noise transmission to the interior spaces.



MILLER, BEAM & PAGANELLI, INC.			PROJECT: ORCHARD POND	SHEET:
FIGURE: 1	DATE: 10/05/09	SCALE:	TITLE: NOISE ASSESSMRENT LOCATIONS	OF:

LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name: Orchard Pond
Project Address: City of Gaithersburg, MD

Yes	?	No			
20		6	**SUSTAINABLE SITES**		**26 Points**
Y			Prereq 1	**Construction Activity Pollution Prevention**	**Required**
1			Credit 1	**Site Selection**	**1**
5			Credit 2	**Development Density and Community Connectivity**	**5**
		1	Credit 3	**Brownfield Redevelopment**	**1**
6			Credit 4.1	**Alternative Transportation -** Public Transportation Access	**6**
		1	Credit 4.2	**Alternative Transportation -** Bicycle Storage and Changing Rooms	**1**
3			Credit 4.3	**Alternative Transportation -** Low-Emitting and Fuel-Efficient Vehicles	**3**
2			Credit 4.4	**Alternative Transportation -** Parking Capacity	**2**
1			Credit 5.1	**Site Development -** Protect or Restore Habitat	**1**
1			Credit 5.2	**Site Development -** Maximize Open Space	**1**
		1	Credit 6.1	**Stormwater Design -** Quantity Control	**1**
		1	Credit 6.2	**Stormwater Design -** Quality Control	**1**
1			Credit 7.1	**Heat Island Effect -** Nonroof	**1**
		1	Credit 7.2	**Heat Island Effect -** Roof	**1**
		1	Credit 8	**Light Pollution Reduction**	**1**

Yes	?	No			
4		6	**WATER EFFICIENCY**		**10 Points**
					4
Y			Prereq 1	**Water Use Reduction**	**Required**
2		2	Credit 1	**Water Efficient Landscaping**	**2 to 4**
				2 Reduce by 50%	2
				No Potable Water Use or Irrigation	4
		2	Credit 2	**Innovative Wastewater Technologies**	2
2		2	Credit 3	**Water Use Reduction**	**2 to 4**
				2 Reduce by 30%	2
				Reduce by 35%	3
				Reduce by 40%	4

2		33	**ENERGY & ATMOSPHERE**		**35 Points**
Y			Prereq 1	**Fundamental Commissioning of Building Energy Systems**	**Required**
Y			Prereq 2	**Minimum Energy Performance**	**Required**
Y			Prereq 3	**Fundamental Refrigerant Management**	**Required**
2		17	Credit 1	**Optimize Energy Performance**	**1 to 19**
				Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
				Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
				Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
				Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
				Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
				Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
				Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
				Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
				Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
				Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
				Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
				Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
				Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
				Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
				Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
				Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
				Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
				Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
				Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
		7	Credit 2	**On-Site Renewable Energy**	**1 to 7**
				1% Renewable Energy	1
				3% Renewable Energy	2
				5% Renewable Energy	3
				7% Renewable Energy	4
				9% Renewable Energy	5
				11% Renewable Energy	6
				13% Renewable Energy	7
		2	Credit 3	**Enhanced Commissioning**	**2**
		2	Credit 4	**Enhanced Refrigerant Management**	**2**
		3	Credit 5	**Measurement and Verification**	**3**
		2	Credit 6	**Green Power**	**2**

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SDP 09 001
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LEED 2009 for New Construction and Major Renovation
Project Scorecard

Project Name: Orchard Pond
Project Address: City of Gaithersburg, MD

Yes	?	No			
MATERIALS & RESOURCES					**14 Points**
Y			Prereq 1	**Storage and Collection of Recyclables**	**Required**
		3	Credit 1.1	**Building Reuse** - Maintain Existing Walls, Floors and Roof	**1 to 3**
				Reuse 55%	1
				Reuse 75%	2
				Reuse 95%	3
		1	Credit 1.2	**Building Reuse -** Maintain Interior Nonstructural Elements	**1**
2			Credit 2	**Construction Waste Management**	**1 to 2**
				50% Recycled or Salvaged	1
				75% Recycled or Salvaged	2
		2	Credit 3	**Materials Reuse**	**1 to 2**
				Reuse 5%	1
				Reuse 10%	2
1		1	Credit 4	**Recycled Content**	**1 to 2**
				10% of Content	1
				20% of Content	2
1		1	Credit 5	**Regional Materials**	**1 to 2**
				10% of Materials	1
				20% of Materials	2
		1	Credit 6	**Rapidly Renewable Materials**	**1**
		1	Credit 7	**Certified Wood**	**1**
INDOOR ENVIRONMENTAL QUALITY					**15 Points**
Y			Prereq 1	**Minimum Indoor Air Quality Performance**	**Required**
Y			Prereq 2	**Environmental Tobacco Smoke (ETS) Control**	**Required**
		1	Credit 1	**Outdoor Air Delivery Monitoring**	**1**
		1	Credit 2	**Increased Ventilation**	**1**
1			Credit 3.1	**Construction Indoor Air Quality Management Plan -** During Construction	**1**
		1	Credit 3.2	**Construction Indoor Air Quality Management Plan -** Before Occupancy	**1**
1			Credit 4.1	**Low-Emitting Materials -** Adhesives and Sealants	**1**
1			Credit 4.2	**Low-Emitting Materials -** Paints and Coatings	**1**
1			Credit 4.3	**Low-Emitting Materials -** Flooring Systems	**1**
		1	Credit 4.4	**Low-Emitting Materials -** Composite Wood and Agrifiber Products	**1**
		1	Credit 5	**Indoor Chemical and Pollutant Source Control**	**1**
1			Credit 6.1	**Controllability of Systems -** Lighting	**1**
1			Credit 6.2	**Controllability of Systems -** Thermal Comfort	**1**
1			Credit 7.1	**Thermal Comfort -** Design	**1**
1			Credit 7.2	**Thermal Comfort -** Verification	**1**
1			Credit 8.1	**Daylight and Views -** Daylight	**1**
1			Credit 8.2	**Daylight and Views -** Views	**1**
INNOVATION IN DESIGN					**6 Points**
3		2	Credit 1	**Innovation in Design**	**1 to 5**
				Innovation or Exemplary Performance	1
				Innovation or Exemplary Performance	1
				Innovation or Exemplary Performance	1
				Innovation	1
				Innovation	1
1			Credit 2	**LEED® Accredited Professional**	**1**
REGIONAL PRIORITY					**4 Points**
1		3	Credit 1	**Regional Priority**	**1 to 4**
				Materials & Resources Credit 2 - Construction Waste Management (50%)	1
				Sustainable Site Credit 6.1 - Stormwater Design - Quantity Control (Maybe)	1
				Regionally Defined Credit Achieved	1
				Regionally Defined Credit Achieved	1
PROJECT TOTALS (Certification Estimates)					**110 Points**
45		65			

Certified: 40-49 points Silver: 50-59 points Gold: 60-79 points Platinum: 80+ points

DEPARTMENT OF TRANSPORTATION

Isiah Leggett
County Executive

Arthur Holmes, Jr.
Director

November 24, 2009

RECEIVED
DEC 3 2009
PLANNING & CODE ADMINISTRATION

Ms. Eliza Voigt, Planner
Planning and Code Administration
City Of Gaithersburg
31 South Summit Avenue
Gaithersburg, Maryland 20877

RE: Schematic Development Plan #SDP-09-011 and
Rezoning # Z312
Orchard Pond

Dear Ms. Voigt:

Thank you for the opportunity to the May 20, 2009 updated schematic Development Plan for this project. We received that print on October 30, 2009. The following comments are set forth:

1. We note this project will not have access on any existing or proposed County maintained streets.

2. Access and improvements along Quince Orchard Road (MD 121) and Clopper Road (MD 117) as required by the Maryland State Highway Administration.

3. Access and improvements along Firstfield Road and Metropolitan Grove Road as required by the City of Gaithersburg.

4. Please submit two (2) copies of the Traffic Impact Study for our review and comment regarding the project's impact on the nearby signalized intersections (Clopper Road/Metropolitan Grove Road and Quince Orchard Road/Firstfield Road).

Thank you for the opportunity to review this site plan. If you have any questions or comments regarding this letter, please contact Mr. Sam Farhadi at (240) 777-2197.

Sincerely,

Gregory M. Leck, P.E., Manager
Development Review Team

Joint Hearing - MCC & PC
SDP 09 001
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m:/subdivision/farhas01/gaithersburg/Z312 & SDP-09-001, Orchard Pond, gml revs.doc

RECEIVED
DEC 3 2009
PLANNING & CODE ADMINISTRATION

cc: Ollie Mumpower; City of Gaithersburg
Corren Giles; MSHA EAPD
Bruce Mangum; DOT DTEO
Sam Farhadi; DOT DTEO

Division of Traffic Engineering and Operations
101 Orchard Ridge Drive, 2nd Floor • Gaithersburg, Maryland 20878
Customer Service 240-777-6000 • Main Office 240-777-2190 • 240-777-6013 TTY • 240-777-2080 FAX
trafficops@montgomerycountymd.gov

WASHINGTON SUBURBAN SANITARY COMMISSION

DEVELOPMENT PROPOSAL REVIEW
FOR A
REZONING APPLICATION

APPLICATION NO.: SDP-09-011 DATE: NOVEMBER 16, 2009

APPLICANT: JEFFERSON APARTMENT GROUP

LOCATION: CLOPPER ROAD / QUINCE ORCHARD RD, GAITHERSBURG

COUNTY: MONTGOMERY 200' SHEET NO.: 224NW11

PRESENT ZONING: R-20 (156 EXISTING APT UNITS)

PROPOSED ZONING: MXD SIZE OF PARCEL: 43.36 ACRES

DWELLING UNITS: 420 APT UNITS (PHASE 1); 700-1,000 (FUTURE)

OTHER: COMMERCIAL / RETAIL / HOTEL

okay

WATER INFORMATION

1. Water pressure zone: 660A
2. There are two phases to this project.
   a. For phase 1, a 10-inch and 24-inch water lines abut the property.
   b. For Phase 2, a 12-inch and 24-inch water lines abut the property.
3. Local service is adequate.
4. Program-sized water main extensions (16 inches in diameter or greater) are not required to serve the property.
5. The impact from rezoning this property may be negligible.

Joint Hearing - MCC & PC
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Note recd via email 12/2/09

SEWER INFORMATION

1. Basin: Seneca

2. A 12-inch, 8-inch, and an 18-inch sewer lines abut the property. A non-CIP-sized sewer extension can serve phase 1 and a CIP sized sewer extension is required to serve the phase 2 of this property. If flow from both phases is directed into one sewer, a CIP size sewer extension is needed to serve both phases of this property.
3. Average Wastewater Flow from the present zoning: 29,203 GPD
   Average Wastewater Flow from the requested zoning: 487,020 GPD
   Average Wastewater Flow from the proposed development:
   1. Average Wastewater Flow from Phase1: 78,990 GPD
   2. Average Wastewater Flow from Phase2: 496,123 GPD

4. Program-sized sewer mains are not required to serve the phase 1 of the development. However, phase 2 of this property has a base sanitary flow over 100,000 GPD, it will require special review per ENG 09-01 by the WSSC Planning Group. This special review is performed during a 'Hydraulic Planning Analysis' process and will determine if downstream improvements are required.

5. Interceptor capacity is adequate.

6. The impacts from rezoning phase 2 of this property may result in a capacity augmentation for the 12-inch and 8-inch in Clopper Road. If all wastewater flow from phase 2 is diverted to sewers along Metropolitan Grove Road, 2900 feet of 8-inch sewers will require augmentation.

Statements of adequacy/inadequacy are made exclusively for this application at this time. Further analysis of adequacy will be part of the review at the time of application for water/sewer service.

Reviewed by sDjours (301)206-8812.

From: Corren Giles
To: Eliza Voigt
Subject: FW: Orchard Pond Re-Development
Date: Wednesday, December 16, 2009 11:20:30 AM
Importance: High

Hello Eliza,

Below are our comments regarding the Orchard Pond Re-Development:

- Transit Issues: Future Corridor Cities Transitway* travels along MD 124 crosses MD 117 and runs along the Westside of MD 124 along the eastside of this property. We request that the developer donate the ROW for this. Reference the following link for the CCT.

  http://www.i270multimodalstudy.com/images/stories/documents/Final_CCT_Alternative_Alignments11-05-09-last.pdf
- Change of Zoning: SHA supports the change in zoning from residential to mixed use since a future CCT station is planned at the corner of MD 117 and MD 124 (by 2030). In addition, it is also near the MARC transit station as well as an another CCT station (more near term) .
- Highway Concerns/Traffic Generation: When doing the Traffic Impact Study , the developer should take into consideration the Draft Gaithersburg Master Plan and the proposed land use south of this development if there are other developments in the planning process that would affect this TIS.
- Access Management: Too minimize conflicts with the CCT along MD 124, SHA prefers the site only have access via MD 117 and/or Firstfield Road.

Let me know if you have any questions!

Corren

Please consider the environment before printing this email

LEGAL DISCLAIMER - The information contained in this communication (including any attachments) may be confidential and legally privileged. This email may not serve as a contractual agreement unless explicit written agreement for this purpose has been made. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication or any of its contents is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender indicating that it was received in error and delete the original message and any copy of it from your computer system.

Joint Hearing - MCC & PC
SDP 09 001
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Gaithersburg
A CHARACTER COUNTS! CITY

December 8, 2009

Bonnie Geiger
Law Section
The Gazette Newspaper
2-A North Market Street
Frederick, Maryland 21701

Dear Ms. Geiger:

Please publish the following legal advertisement in the **December 16 and December 23, 2009,** issues of the *Gaithersburg Gazette*.

Sincerely,

Eliza Voigt

Eliza Voigt, Planner
Planning and Code Administration

ASSIGN CODE: **SDP-09-001** **Acct# 133649**

NOTICE OF PUBLIC HEARING

The Mayor and Council and Planning Commission of the City of Gaithersburg will conduct a joint public hearing on SDP-09-001, filed by Jody S. Kline, for 893 Clopper Road Investors Corporation c/o JPI, on

MONDAY
JANUARY 4, 2010
AT 7:30 P.M.

or as soon thereafter as this matter can be heard in the Gaithersburg Upcounty Senior Center at 80A Bureau Drive, Gaithersburg, Maryland.

The application requests approval of Schematic Development Plan **SDP-09-001.** This application involves the redevelopment of 11.14 acres of land located at the property bound by Firstfield, Clopper and Quince Orchard Roads and includes Parcels A (N781) & B (N888), and is commonly known as Orchard Pond Apartments. The plan proposes a 420-unit multiple-family building with structured parking.

Further information may be obtained from the Department of Planning and Code Administration at City Hall, 31 South Summit Avenue, between the hours of 8 a.m. and 5 p.m., Monday through Friday, or visit the City's website at www.gaithersburgmd.gov.

Eliza Voigt, Planner
Planning and Code Administration

City of Gaithersburg • 31 South Summit Avenue, Gaithersburg, Maryland 20877-2098
301-258-6300 • FAX 301-258-6149 • TTY 301-258-6430 • cityhall@gaithersburgmd.gov • www.gaithersburgmd.gov

MAYOR
Sidney A. Katz

CITY COUNCIL MEMBERS
Jud Ashman
Cathy C. Drzyzgula
Henry F. Marraffa, Jr.
Michael A. Sesma
Ryan Spiegel

CITY MANAGER
Angel L. Jones

Joint Hearing - MCC & PC
SDP 09 001
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Gaithersburg
A CHARACTER COUNTS! CITY

CITY OF GAITHERSBURG
31 South Summit Avenue
Gaithersburg, Maryland 20877
Telephone: 301-258-6330

NOTICE OF JOINT PUBLIC HEARING

The City of Gaithersburg Mayor and Council and Planning Commission will conduct a public hearing at the time and place noted below.

Meeting:	**MAYOR AND CITY COUNCIL**
Application Type:	**SCHEMATIC DEVELOPMENT PLAN**
File Number:	**SDP-09-001**
Location:	**FIRSTFIELD, CLOPPER AND QUINCE ORCHARD ROADS, PARCELS A (N781) & B (N888)**
Applicant:	**JODY KLINE, FOR 893 CLOPPER ROAD INVESTORS CORP.**
Development:	**RESIDENTIAL DEVELOPMENT**
Day/ Date/Time:	**MONDAY**, **JANUARY 4, 2010; 7:30 PM**
Place:	**GAITHERSBURG UPCOUNTY SENIOR CENTER 80A BUREAU DRIVE, GAITHERSBURG, MARYLAND**

*****IMPORTANT *****

This application requests approval of Schematic Development plan **SDP-09-001**. This application involves the redevelopment of 11.14 acres of land located at Firstfield, Clopper and Quince Orchard Roads, includes Parcels A (N781) & B (N888), and is commonly known as Orchard Pond Apartments. The plan proposes a 420-unit multiple-family building with structured parking. This is a joint public hearing, which allows the public an opportunity to participate and comment on this request. Contact the Planning and Code Administration City Planner listed below at (301) 258-6330 if you should have any questions and/or to learn more about this process and your ability to offer testimony and input.

Joint Mayor and City Council & Planning Commission meetings can be viewed live on Gaithersburg Cable Television Channel 13, and at anytime (on demand) two weeks after the public hearing via the Internet and Web TV at http://www.gaithersburgmd.gov

CITY OF GAITHERSBURG

Eliza Voigt

By: _____
Eliza Voigt, Planner
Planning and Code Administration

SEE LOCATION MAP ON REVERSE SIDE

Joint Hearing - MCC & PC
SDP 09 001
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NOTICES SENT THIS 11th DAY OF DECEMBER, 2009, TO:

APPLICANT AND INTERESTED PARTIES

(A list of interested parties and agencies is available in the file in the Planning and Code Administration.)

MAYOR AND COUNCIL

PLANNING COMMISSION

CITY STAFF
Angel Jones, City Manager
Tony Tomasello, Assistant City Manager
Lynn Board, City Attorney
Britta Monaco, Public Information Director
Doris Stokes, Administrative Assistant
Jeff Baldwin, City Web Administrator (via email)

LOCATION MAP

CRISWELL FAMILY LLC
503 QUINCE ORCHARD RD
GAITHERSBURG MD 20878

FEDERAL REALTY INVESTMENTTRUST
C/O DIR PROPERTY ANALYSIS
1626 E JEFFERSON ST
ROCKVILLE MD 20852

FAIRFIELD QUINCE ORCHARD 2 LLC
C/O DONALDSON GROUP
15245 SHADY GROVE RD #160
ROCKVILLE MD 20850

MOTEL 6 OPERATING LP
4001 INTERNATIONAL PKWY
CARROLLTON TX 75007

FORESEES LLC
503 QUINCE ORCHARD RD
GAITHERSBURG MD 20878

POTOMAC ENERGY HOLDINGS LLC
12700 NORTHBOROUGH DR
HOUSTON TX 77067

USRP I LLC
C/O PROPERTY TAX DEPT
PO BOX 790830
SAN ANTONIO TX 78279

SHELL OIL CO
C/O MKTG PROP TAX
PO BOX 2099
HOUSTON TX 77252

893 CLOPPER ROAD INVESTORS CORP
200 E RANDOLPH ST
CHICAGO IL 60601

893 CLOPPER ROAD INVESTORS CORP
PO BOX 130156
CARLSBAD CA 92013

MALCOLM VAN DE REIT
JEFFERSON APARTMENT GROUP
8300 GREENSBORO DR #400
MCLEAN VA 22102

JODY KLINE
MILLER, MILLER & CANBY
200B MONROE STREET
ROCKVILLE MD 20850

STEPHEN TAWES
LOIDERMAN SOLTESZ ASSOC
2 RESEARCH PLACE #100
ROCKVILLE MD 20850

JOESEPH SCHNEIDER
LESSARD GROUP
8521 LEESBURG PIKE #700
VIENNA VA 22182

QUINCE DIAMOND LTD PTNSHP
24012 FREDERICK RD #200
CLARKSBURG MD 20871

DISTRICT 3 SHA
900 KENILWORTH AVE
GREENBELT MD 20770

NEA'S MEMBER BENEFIT CORP
900 CLOPPER RD FL 3
GAITHERSBURG MD 20878

METROGROVE LLC
% MCKELVIE
800 17TH ST NW # 1100
WASHINGTON DC 20006

STATE OF MARYLAND MVA
PLAN & FACILITIES DEVEL DIV
6601 RITCHIE HWY NE # 224
GLEN BURNIE MD 21062

BALAMAR INC
% FEDERAL REALTY INV TR
1626 E JEFFERSON ST
ROCKVILLE MD 20852

SENECA MEWS HOA INC
% THE MANAGEMENT GROUP ASSOC INC
20440 CENTURY BLVD # 100
GERMANTOWN MD 20874

Joint Hearing - MCC & PC
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GREYSTAR
Management Services

December 10, 2009

(Residents of Buildings 867 thru 891 only)

Dear Resident:

As you may have noticed from signs posted on the Orchard Pond property, the owner has applied to the City of Gaithersburg to redevelop some time in the future this existing garden apartment community. Initial plans involve redevelopment of the area located within the section of the community bounded by Clopper Road, Quince Orchard Road and Firstfield Road. A joint public hearing will be conducted by the Mayor, City Council and Planning Commission of Gaithersburg on the evening of Monday, January 4, 2010, at 7:30 p.m. at Gaithersburg City Hall to discuss those plans.

The plans to redevelop the Phase I section of Orchard Pond are preliminary at this time and will not be implemented for some time, certainly not earlier than 2011. As the plans for redevelopment of Phase I of Orchard Pond become more refined, and answers to specific questions about timing can be provided to residents, management will be corresponding with you to explain the redevelopment schedule and rights to which you would be entitled as a result of relocation.

In the meantime, should you have any questions about this matter, please contact the management office at 301.948.2580 or orchardpondmgr@greystar.com.

As always, we thank you for choosing Jefferson at Orchard Pond!

Sincere Regards,

Kia M. Crooms, ARM®
Community Manager
Jefferson at Orchard Pond

CC: File, Door

Joint Hearing - MCC & PC
SDP 09 001
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From:	Ollie Mumpower
To:	Eliza Voigt
Cc:	Lauren Pruss; Greg Ossont; Jim Arnoult
Subject:	Orchard Pond TIS
Date:	Thursday, December 17, 2009 3:49:26 PM

In accordance with the City s Adequate Public Facilities Ordinance the applicant has submitted a required Traffic Impact Study (TIS) indicating that all intersections in the study area will continue to operate within the City's acceptable standards for Critical Lane Volumes in both the AM and PM peak hours.

Engineering Services Director Ollie Mumpower has reviewed the TIS and agrees with the findings detailed in these documents. As such approval of the TIS for this project is granted.

Ollie K. Mumpower
Engineering Services Director
Department of Public Works
800 Rabbitt Road Gaithersburg, Maryland 20878-1600
301-258-6370 Ext. 106
301-258-6375 FAX
301-258-6430 TTY
omumpower@gaithersburgmd.gov
www.gaithersburgmd.gov

15 December 2009

STATEMENT IN SUPPORT OF FIXED PARKING RATE REQUEST

ORCHARD POND REDEVELOPMENT

APPLICATION OF 893 CLOPPER ROAD INVESTORS CORP.

ZONING APPLICATION NO. SDP-09-01

The Applicant in the above-referenced request for schematic development plan approval seeks permission of the City Council to establish a fixed parking rate for the proposed "Orchard Pond" regarding development, Phase I, and, as a basis therefor, provides the following information and justification.

Section 24-160D.8 ("MXD Zone: Parking Requirements") states that:

> "(a) The Council, at the time of schematic development plan review, shall determine the appropriate approximate number of [parking] spaces…"

Generally, this section of the City Zoning Ordinance is used to allow a reduction in the number of parking spaces required by Code to support a development proposal. In this instance, the applicant may not actually need a waiver of the number of required parking spaces. The Applicant proposes to construct a four story building containing 410 apartment dwelling units. Under Section 24-219(b) of the City Zoning Ordinance, the following number of units are required per apartment unit type:

Efficiency	1 parking space per unit
One Bedroom	1.7 parking spaces per unit
Two Bedrooms	2 parking spaces per unit
Three Bedrooms and Larger	2.5 parking spaces per unit

In its schematic development plan, the Applicant proposes to provide 670 parking spaces for residents and guests (not including adjacent on-street parking). Unfortunately, the Applicant cannot say unequivocally at this time what will be the mix of unit types to be provided in the project (which may not be delivered for occupancy for approximately two years from today's date). Accordingly, the Applicant cannot report at this time the number of parking spaces that are required by the City Zoning Ordinance and, hence, whether that number is lesser than, equal to or greater than the number of parking spaces required for the contemplated 410 residential units to be constructed.

On the other hand, the Applicant can confidently state, based on its substantial experience in developing, owning and managing apartment projects in the Washington Metropolitan Area, that providing parking at a rate of 1.6 spaces per dwelling unit will deliver more than adequate parking for the proposed project for the following reasons:

1. The City Zoning Ordinance does not take into account the benefits that are achieved by locating multi-family residential uses in close proximity to shopping and employment centers. In the case of Orchard Pond, retail centers are located immediately across

Quince Orchard Road and Clopper Road from the proposed development and the ease with which these centers can be accessed discourages of the use of automobiles. Similarly, employment centers (NIST Bennington Corporate Center) are also located close to and easily accessible from the Orchard Pond project again reducing reliance on personal automobiles.

2. The Orchard Pond project is located along major public transportation routes, including routes that carry bus riders to the Shady Grove Metro Station.

3. The proposed Orchard Pond project will be located adjacent to an important stop on the Corridor City's Transit (CCT) line which, when constructed and operational, will provide ready accessibility throughout mid-Montgomery County as well as to points where connections can be made to the Metro and MARC rail system.

4. Attached is information provided by the Applicant based on its substantial experience at other apartment communities similarly situated to Orchard Pond.

Projects developed, owned and/or managed by JPI and Jefferson Apartment Group (JAG) include the following with effecting parking ratios listed:

Sullivan Place (Alexandria)	1.6 parking spaces per DU
Inigo's Crossing (North Bethesda)	1.6 parking spaces per DU
Halstead at the Metro (Fairfax)	1.6 parking spaces per DU

These examples demonstrate that 1.6 parking spaces per dwelling unit is more than adequate to support the parking demands contemplated for this project.

5. The City has previously heard presentations explaining how well designed multi-family communities, located and readily accessible to shopping, employment and public transportation, need less parking than the otherwise conservative City Zoning Ordinance would require, an observation that is borne out by the examples provided by paragraph 4 above.

The Applicant requests that the City Council determine, at the stage of review of the schematic development plan, that parking of 1.6 spaces per dwelling unit is "appropriate" for the proposed project. Then, at the time of final site plan review, when the actual unit mix has been determined, the Planning Commission can determine the final number of spaces that should be produced based upon considerations of safety, convenience, pedestrian vehicular circulation, and added landscaping within parking lot areas, as required under Section 24-160D.8 of the City Zoning Ordinance.

For the reasons set forth above, this Applicant requests that the Mayor and City Council determine that a parking ratio of 1.6 spaces per apartment dwelling unit be determined to be appropriate and that a final determination of the actual number of spaces that should be provided, and any variance that might be required, be granted at the time of the Planning Commission's review of the final site plan application.