

## County of Loudoun

### Department of Transportation and Capital Infrastructure

#### MEMORANDUM

**DATE:** August 24, 2015

**TO:** Evan Harlow, Project Manager  
Department of Planning and Zoning

**FROM:** Rory L. Toth, Senior Transportation Planner RLT  
DTCI, Transportation Planning & Operations Division

**SUBJECT: ZCPA 2015-0010 & SPEX 2015-0015  
Broadlands South Sections 204, 206 and 208  
First Referral**

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#### **Background**

This Zoning Concept Plan Amendment (ZCPA) application under the Revised 1993 Zoning Ordinance (Zoning Ordinance) seeks to amend the proffer statement and concept development plan (CDP) approved with Broadlands and Broadlands South, ZCPA 2011-0004 in order to 1) remove a child care center use on an approximately 3.5-acre site in Section 208 and develop the site with 45 age-restricted housing units (for a total of 123 units) approved in Section 208; and 2) amend the proffer statement of ZMAP 1995-0003 in order to move the existing 75 space commuter parking lot in Section 206 to Section 204 and amend the current lease agreement for the commuter lot in Section 204. In addition, the Applicant seeks approval of a Special Exception (SPEX) application under the Zoning Ordinance for an automobile service station limited to 14 gas pumps, canopy and service kiosk only in Section 206. The location of the 14 gas pumps in Broadlands Section 206 will be accessed via Wynridge Drive. The subject property is located on the east side of Mooreview Parkway (VA Route 2298), north and south side of Wynridge Drive (VA Route 2394) and north of Old Ryan Road (VA Route 772). It is important to note that Section 204 of Broadlands is located within the Route 772 Metro Station Service District. Section 204 is served via one full movement driveway on Old Ryan Road; the portion of Section 206 is served via one full access driveway on Wynridge Drive, one right-in/right-out access driveway on Mooreview Parkway and one full-movement driveway on Demott Drive (VA Route 2070); and the portion of Section 208 is served by one full access driveway on Wynridge Drive. A vicinity map is provided as **Attachment 1**, and the proposed concept layout is shown on **Attachment 2**.

Department of Transportation and Capital Infrastructure (DTCI) review of these applications is based on materials received from the Department of Planning and Zoning on June 10, 2015, including (1) an information sheet, dated June 9, 2015; (2) a Statement of Justification prepared by the Applicant, dated June 4, 2015; (3) a Traffic Impact Study (TIS) prepared by Wells & Associates, dated April 23, 2015 and May 22, 2015 for Section 208 and 206 respectively; (4) Draft Proffer Statement, including amended Exhibit B with changes noted in yellow and a

“strike-through” version dated June 4, 2015; and (5) a Zoning Concept Plan Amendment and Special Exception plat (plan set), prepared by J2 Engineers, dated March 2015, revised through May 12, 2015.

### **Compliance with the Countywide Transportation Plan**

The subject property is located within the Suburban Policy Area (Ashburn Community). The transportation network is specifically governed by the policies of Countywide Transportation Plan (2010 CTP) and the Bicycle & Pedestrian Mobility Master Plan (2003 Bike & Ped Plan). DTCI's assessment of the transportation network is based on review of existing, planned and programmed transportation facilities, review of the Applicant's traffic study, and applicable County policies.

### **Existing, Planned and Programmed Transportation Facilities**

Existing and planned roadways in the vicinity of the site are described below. Descriptions for planned conditions of CTP roads are taken from Appendix 1 of the 2010 CTP; descriptions of planned bicycle and pedestrian facilities on CTP roads are taken from Appendix 6 of the 2010 CTP and the 2003 Bike & Ped Plan.

**Mooreview Parkway (Formerly VA Route 772 Relocated) (VA Route 2298)** (segment from Dulles Greenway (VA Route 267) interchange west and south to Loudoun County Parkway (VA Route 607)) is classified as a major collector by the 2010 CTP as a four-lane (U4M) controlled access median divided urban collector roadway with grade separated interchange at the Dulles Greenway. Four-lane divided (U4M) segments of Mooreview Parkway are in place and open to traffic between the Dulles Greenway eastbound off-ramp / northern Old Ryan Road intersection and Croson Lane (VA Route 645), as well as between the southern Old Ryan Road intersection and Loudoun County Parkway. A two-lane section of Mooreview Parkway is currently in place and open to traffic from Croson Lane south to serve the Amberleigh development and Moorefield Station Elementary School. A project to construct the remaining missing segment of Mooreview Parkway is included in the County's Capital Improvement Program (CIP); this project will result in a complete four-lane divided (U4M) section of roadway between Croson Lane and the southern Old Ryan Road intersection, with a tentative schedule to start construction by October 2015, and a scheduled completion within a year after the start date. Left- and right-turn lanes are required at all intersections. It is noted that left- and right-turn lanes are in place at the intersection with Demott Drive. Shared-thru, left- and right-turn lanes are in place northbound and southbound at the intersection with Wynridge Drive. A right-turn lane into Southern Walk Plaza along southbound Mooreview Parkway is in place at the site entrance (Southern Walk Plaza) to Section 206. Right-in/right-out access only is in place at the intersection with Southern Walk Plaza and Mooreview Parkway. Striping for a northbound right-turn lane is in place at its northern intersection with Old Ryan Road. In addition, striping for a southbound right-turn lane is in place at the intersection with Wynridge Drive. In its ultimate condition, this segment of Mooreview Parkway is to be a six-lane (U6M) controlled access median divided urban collector roadway with left- and right-turn lanes are required at all intersections. However, it is important to note that per the 2010 CTP (Site Specific Note "H"), Old Ryan Road and the parallel segment of Mooreview Parkway to the west are to function in tandem to provide the equivalent of a U6M facility on this area. There are no recent VDOT

daily traffic volume estimates available for this section of Mooreview Parkway. Per 2014 VDOT published traffic data, Mooreview Parkway carries approximately 1,800 vehicles per day.

Per Appendix 6 of the 2010 CTP, all planned six-lane roadways are to have a 10-foot wide shared use path (within the ROW or a 14-foot wide public access easement) along each side of the roadway. A sidewalk is in place along the west side of Mooreview Parkway in the vicinity of the site on Section 206 (between the Greenway and Southern Walk Plaza) and a shared use path is in place on the west side of Mooreview Parkway from Croson Lane south to Moorefield Station Elementary School. A sidewalk is in place on the east side of Mooreview Parkway along its frontage with Broadlands Section 204. A Board Member Initiative (February 5, 2014) directed DTCI staff to research and provide cost estimates to construct missing segments of sidewalks and trails along Mooreview Parkway between Claude Moore Avenue / Wynridge Drive and Croson Lane; and on Claude Moore Drive between Old Ryan Road and Mooreview Parkway; and on Croson Lane between Quail Pond Place and Mooreview Parkway. At present, per subsequent BOS direction, 90% plans for these improvements have been completed and are being reviewed by the Department of Building and Development.

Old Ryan Road (VA Route 772) is a local secondary road currently constructed largely as a two-lane rural (R2) section. The road currently extends from Mooreview Parkway / Ashburn Village Boulevard intersection (opposite the eastbound Dulles Greenway off-ramp) south to Mooreview Parkway just north of Loudoun County Parkway (VA Route 607). As previously noted above, per the 2010 CTP (Site Specific Note "H"), Old Ryan Road and the parallel segment of Mooreview Parkway to the west are to function in tandem to provide the equivalent of a U6M facility on this area. Approved CPAP 2014-0041 will widen Old Ryan Road from Southland Street to Moorefield Boulevard as a three-lane section that drops the center turn lane at each intersecting street to provide for turning lanes. The northern end of the existing road is to be truncated and form a T-intersection with future Moorefield Boulevard, opposite a realigned entrance to the existing fire station, per approved ZCPA 2009-0006/SPEX 2008-0032 and FIDP 2010-0002. Claude Moore Charitable Foundation has proffered to construct the full section of Old Ryan Road (52 feet in width within a 70-foot ROW) where the road is completely on its property and the eastern half-section of this roadway where Old Ryan Road forms the western boundary of the Moorefield Station site. These Old Ryan Road improvements are required to be in place prior to the issuance of Moorefield Station's 1,176th residential zoning permit. Per 2014 VDOT daily traffic estimates, Old Ryan Road carries approximately 4,100 vehicles per day. DTCI notes that certain frontage improvements along the west side of Old Ryan Road, generally north of Claude Moore Drive, remain unfunded and are not part of the proffered improvements shown on CPAP 2014-0041.

The 2003 Bike & Ped Plan envisions bicycle and pedestrian facilities along all local secondary roadways. Sidewalks are in place along segments of the west side of Old Ryan Road south of Claude Moore Avenue. There are no existing sidewalks in Section 204 of Broadlands along Old Ryan Road. CPAP 2014-0041 includes the construction of an eight-foot wide trail on the east side of Old Ryan Road and completion of the five-foot wide sidewalk on the west side of the road where road improvements are being made by the Claude Moore Charitable Foundation.

**Moorefield Boulevard** is classified as a future minor collector roadway in the 2010 CTP that will run roughly parallel to the Dulles Greenway between Mooreview Parkway (at the existing Old Ryan Road / Mooreview Parkway intersection) and Loudoun County Parkway opposite existing Westwind Drive. It is noted that Section 204 of Broadlands has frontage along Moorefield Boulevard and this section of roadway along Broadland Section 204 still referred to as Old Ryan Road. Per approved ZCPA 2014-0002 and approved CPAP 2014-0041 the segment of Moorefield Boulevard between Mooreview Parkway and realigned Old Ryan Road (as described above) will be constructed as a five-lane section, forming a T-intersection with Old Ryan Road at a realigned entrance to the existing fire station. Improvements to Old Ryan Road / Moorefield Boulevard near the intersection of Mooreview Parkway are currently unfunded. Moorefield Boulevard between Old Ryan Road and Croson Lane is proffered with ZCPA 2014-0002 as a two-lane road within a 74-foot right-of-way. Improvements to this segment of Moorefield Boulevard are anticipated to be in place no later than the commencement of Metrorail operations to the Route 772 station. East of this intersection, Moorefield Boulevard will transition to an urban three- to four-lane (U3/U4) section and continue southeast through the Moorefield Station development to Loudoun County Parkway.

Per Appendix 6 of the 2010 CTP, all planned four-lane roadways are to have a 10-foot wide shared use path (within the ROW or a 14-foot wide public access easement) along one side of the roadway and a six-foot sidewalk on the other side. Bicycle and pedestrian facilities are planned to be constructed along Moorefield Boulevard consistent with the approved development applications noted above.

**Wynridge Drive (aka Greenway East-West Connector) (VA Route 2394)** (segment from Claiborne Parkway (VA Route 901) east to Mooreview Parkway) is classified as a minor collector per the 2010 CTP. Wynridge Drive is currently built to its ultimate condition as a four-lane (U4M) controlled access median divided urban collector roadway with left- and right-turn lanes required at all intersections. Left -and right-turn lanes are in place at its intersections with Southern Walk Plaza in Broadlands Section 206. Wynridge Drive is under stop-control and thru-left and thru-right turn lanes are built at its intersection with Mooreview Parkway. Striping is in place at the intersection with Mooreview Parkway for left- and right-turn lanes. In addition, left- and right-turn lanes are in place at the access point into Broadlands Section 208. There are no daily traffic volume estimates from VDOT available for Wynridge Drive.

Per Appendix 6 of the 2010 CTP, all planned four-lane roadways are to have a 10-foot wide shared use path (within the ROW or a 14-foot wide public access easement) along one side of the roadway and a six-foot sidewalk on the other side. It is noted that the area near Wynridge Drive is identified as a “Pedestrian Improvement Area.” There are sidewalks along the entire northern side of Wynridge Drive. There are sections of an asphalt path on the south side of Wynridge Drive just west of Stillwater Terrace traveling east past Millwick Terrace.

It is important to note that the TIS for Broadlands Section 208 includes language and a graphic which proposes a 10-foot wide trail on the south side of Wynridge Drive and five-foot wide sidewalks within the site will be provided and connect to the proffered trail along Wynridge Drive. See the Transportation Comments/Recommendations Section of this referral for additional discussion on this matter.

**Demott Drive (VA Route 2070)** is a local secondary road currently constructed as a four-lane undivided (U4) urban section and is not included as part of the 2010 CTP. Demott Drive is under stop-control at its intersection with Mooreview Parkway and left -and right-turn lanes are in place at this intersection. Left- and right-turn lanes are also in place at the existing access points into Southern Walk Plaza. Striping for an additional right-turn lane is in place at the Mooreview Parkway intersection. Per 2014 traffic data published by VDOT, Demott Drive carries approximately 2,600 vehicles per day in the vicinity of the site.

The 2003 Bike & Ped Plan envisions bicycle and pedestrian facilities along all local secondary roadways. A sidewalk is in place along the north side of Demott Drive from Mooreview Parkway traveling west past Southern Walk Plaza.

### **Review of Applicant's Traffic Impact Study**

The Applicant's traffic impact study (TIS) dated May 22, 2015 provided a trip generation analysis and site driveway capacity analysis for the 14 gas pumps proposed in Broadlands Section 206. The TIS dated April 23, 2015 provided a trip generation and site plan comparison of the 45 additional age-restricted dwelling units proposed in Broadlands Section 208. The TIS analyzed the proposed uses impact on surrounding roadway network during the weekday AM and PM peak hours. The TIS analyzed Existing (2015) Conditions, however, the TIS did not clearly state the future build-out year for both projects. See Transportation Comments/Recommendations Section for further discussion. Intersection capacity analyses at the study area intersections were performed using Synchro (Version 9) software based on the Highway Capacity Manual (HCM 2010) data and methodology.

The study area of the TIS included analysis of the following three existing intersections for Broadlands Section 206:

- Demott Drive / Site Driveway
- Mooreview Parkway / Site Driveway
- Wynridge Drive / Eastern Site Driveway

The study area of the TIS included analysis of the following existing intersection for Broadlands Section 208:

- Wynridge Drive / Future Site Driveway

### **Existing (2015) Traffic Volumes and Levels of Service (LOS)**

Existing lane usage configurations, traffic control devices, thru-volumes and LOS for Broadlands Sections 206 and 208 are shown on **Attachment 3** (TIS Tables 2 through 4). As indicated in Tables 2 through 4 of the TIS, all intersections (which are unsignalized) operate at an acceptable LOS (LOS D or better) during the AM and PM peak hour periods.

## Trip Generation

The TIS used *ITE's Trip Generation Report, 9th edition* to project the trips generated by the additional 14 gas pumps proposed in Broadlands Section 206 and 45 age-restricted dwelling units in Broadlands Section 208. **Table 1** below summarizes a trip generation for the additional 14 gas pumps proposed in Broadlands Section 206. In addition, **Table 2** below summarizes a trip generation and also provides a trip comparison of the approved childcare facility in Broadlands Section 208. As indicated in Table 1 below, the proposed development will generate 9 trips during the AM peak hour, 12 trips during the PM peak hour, and a total of 155 weekday daily trips. Compared to the approved use of child care facility on the site, the proposed development would generate 149 fewer trips in the AM peak hour, 133 fewer trips in the PM peak hour, and 817 fewer weekday daily trips. As indicated in Table 2 below, the proposed development of 14 gas pumps (including reductions for pass-by, internal capture and diverted-link trips) would generate 24 more trips in the AM peak hour, 31 more trips in the PM peak hour, and 602 more weekday daily trips.

**Table 1: Trip Generation (2016) Broadlands Section 206 - Proposed 14 Gas Pumps**

Land Use	ITE Code	Size	Units	Total Generated Trips						
				AM Peak Hour			PM Peak Hour			Weekday
				In	Out	Total	In	Out	Total	Total
<b><u>Gasoline/Service Station</u></b>	944	14	Fueling Position	81	77	158	97	97	194	2,360
Internal Capture	AM: 30%	PM: 30%		24	23	47	29	29	58	708
Total External Trips	AM: 70%	PM: 70%		57	54	111	68	68	136	1,652
<b>Sum (Total Trip Generation)</b>	<b>AM:100%</b>	<b>PM: 100%</b>		<b>81</b>	<b>77</b>	<b>158</b>	<b>97</b>	<b>97</b>	<b>194</b>	<b>2,360</b>
<b>External Trips: Primary versus Pass-By versus Diverted Link</b>										
Pass By External Trips	AM: 58%	PM: 42%		32	32	64	29	28	57	570
Diverted Link External Trips				12	11	23	24	24	48	480
Net New Primary External Trips	AM: 21%	PM: 35%		13	11	24	15	16	31	602
<b>Sum (Total External Trip Generation)</b>	<b>AM: 100%</b>	<b>PM: 100%</b>		<b>57</b>	<b>54</b>	<b>111</b>	<b>68</b>	<b>68</b>	<b>136</b>	<b>1,652</b>
<b>Net New Primary External Trips Added to Area Road Network by 14 Proposed Gas Pumps</b>				<b>+13</b>	<b>+11</b>	<b>+24</b>	<b>+15</b>	<b>+16</b>	<b>+31</b>	<b>+602</b>

Source: Traffic Impact Study – Broadlands-Section 208 ZCPA, Wells & Associates TIS, April 23, 2015 and DTCI Trip Generation based on ITE *Trip Generation, 9th Edition*

**Table 2: Trip Generation (2016) Broadlands Section 208 - Proposed 45 Senior Attached Dwelling Units**

Land Use	ITE Code	Size	Units	Total Generated Trips						
				AM Peak Hour			PM Peak Hour			Weekday
				In	Out	Total	In	Out	Total	Total
<b>Approved Conditions</b> Approved Section 208 Child Care Facility	565	210	Students	84	74	158	68	87	145	972
<b>Proposed Conditions</b> 45 Senior Attached Dwelling Units	252	45	DU	3	6	9	6	6	12	155
<b>Trip Comparison:</b> <b>(Proposed – Approved)</b>				<b>+81</b>	<b>+68</b>	<b>+149</b>	<b>+62</b>	<b>+71</b>	<b>+133</b>	<b>+817</b>

Source: Traffic Impact Study – Broadlands-Section 206 Gas Pump SPEX, Wells & Associates TIS, May 22, 2015 and DTCI Trip Generation based on ITE Trip Generation, 9<sup>th</sup> Edition

### Trip Assignment

The TIS provided a breakdown of primary versus pass-by versus diverted-link assignments for the 14 gas pumps proposed in Broadlands Section 206 and for the 45 age-restricted dwelling units in Broadlands Section 208. The TIS also provided a comparison of the approved child care center in Broadlands Section 208 versus the proposed 45 age-restricted dwelling units. The resulting assignment of trips and breakdown of these different assignments on the proposed development in Broadlands Sections 206 and 208 are shown in **Attachment 4**.

### Total Future Volumes and LOS Analysis

Total Future Volumes and LOS are shown in **Attachment 3** (TIS Tables 2 through 4 and Figure 6-3) respectively for Broadlands Sections 206 and 208. Under Future Conditions, the TIS indicates that all intersections (which are unsignalized) are forecast to operate at acceptable levels of service (LOS D or better) during both the AM and PM peak hours. See the Transportation Comments/Recommendations Section of this referral for additional discussion on the build-out year.

### Transportation Comments and Recommendations

DTCI staff has reviewed the Applicant’s submitted materials and has the following comments and recommendations:

1. DTCI notes that the build-out year for the proposed 14 gas pumps and age-restricted dwelling units in Broadlands Section 206 and 208, respectively, appears to be 2016. Please clarify if this is the case and revise the TIS as necessary. In addition, in future revisions to the TIS, DTCI recommends that all analyzed intersections be numbered in order to clearly identify each intersection.

2. DTCI notes that Line 2 of Proffer I.1.a.i and the CDP uses the term “multi-family” dwelling units while the TIS categorizes the units as “senior adult housing-attached units” (ITE Code 252). Clarify this discrepancy and revise the proffer statement, CDP and TIS as necessary.
3. Per Appendix 6 of the 2010 CTP, all planned four-lane roadways are to have a 10-foot wide shared use path (within the ROW or a 14-foot wide public access easement) along one side of the roadway and a six-foot sidewalk on the other side. It is noted that the area near Wynridge Drive is identified as a “Pedestrian Improvement Area” in the 2003 Bike & Ped Plan. DTCI notes that the TIS for Broadlands Section 208 includes language and a graphic which proposes a 10-foot wide trail on the south side of Wynridge Drive and five-foot wide sidewalks within the site will be provided and connect to the proffered trail along Wynridge Drive. DTCI recommends that the Applicant’s draft Proffer I.1.a.ii be revised to clarify that the Applicant will construct or bond for construction a 10-foot wide shared use path (within a 14-foot wide easement or in the ROW) and internal sidewalks in Section 208 and said trail and internal sidewalks shall be constructed or bonded for construction and shown on a record plat or site plan for the use, whichever is first in time, prior to its approval.
4. According to the TIS, approximately 33 off-street parking spaces in the Broadlands Section 206 shopping center will be displaced as a result of the proposed 14 gas pumps. However, it would result in 42 additional spaces as the 75-space commuter lot will be going away and these spaces would then be available for the shopping center users. DTCI defers additional comment on off-street parking spaces for the gas station and the shopping center to the Department of Planning & Zoning and the Department of Building and Development.
5. It is noted that at the time SPEX 2008-0032 was approved (September 8, 2009) for Broadlands Section 204, Moorefield Boulevard was not included as a CTP roadway. However, the CTP was subsequently updated in 2010 to include Moorefield Boulevard. Therefore, DTCI recommends that the Applicant commit to a proffer to dedicate ROW and construct the Moorefield Boulevard improvements as shown in approved SPEX 2008-0032 (**Attachment 5**), consistent with approved CPAP 2014-0041 immediately to the east, and revise the ZCPA/SPEX plat accordingly. In addition, per Appendix 6 of the 2010 CTP, all planned four-lane roadways are to have a 10-foot wide shared use path (within the ROW or a 14-foot wide public access easement) along one side of the roadway and a six-foot sidewalk on the other side. DTCI recommends that the Applicant commit to constructing a 10-foot wide trail along the frontage of Section 204 with Moorefield Boulevard/Old Ryan Road.
6. Regarding the timing in Proffer IX.F.64.a and the extension of the lease, DTCI recommends that the words “one of” be removed from Line 10. Also, DTCI notes that the proffer states approximately 150 parking spaces for a commuter lot in Section 204 with a commuter bus shelter, walkways, trails and lighting as required for safety. DTCI recommends clarification as to the exact number of spaces that the County is receiving in Section 204. DTCI recommends that Section 204 on the CDP be revised to reflect these proffered commitments. Lastly, it appears in the draft proffer that as soon as ZCPA 2015-0010 is approved by the Board of Supervisors, the existing 75 commuter spaces in Section 206 can no longer be reserved for commuter spaces, however the amended agreement for the 150

commuter spaces in Section 204 will not occur until 30 days following an appeal period of ZCPA 2015-0010. This leaves a period in time where there is no commuter parking spaces in this area. DTCI recommends that the timing of this proffer agreement be amended so there is no gap in time and the County will be able to have continuous use of commuter parking spaces.

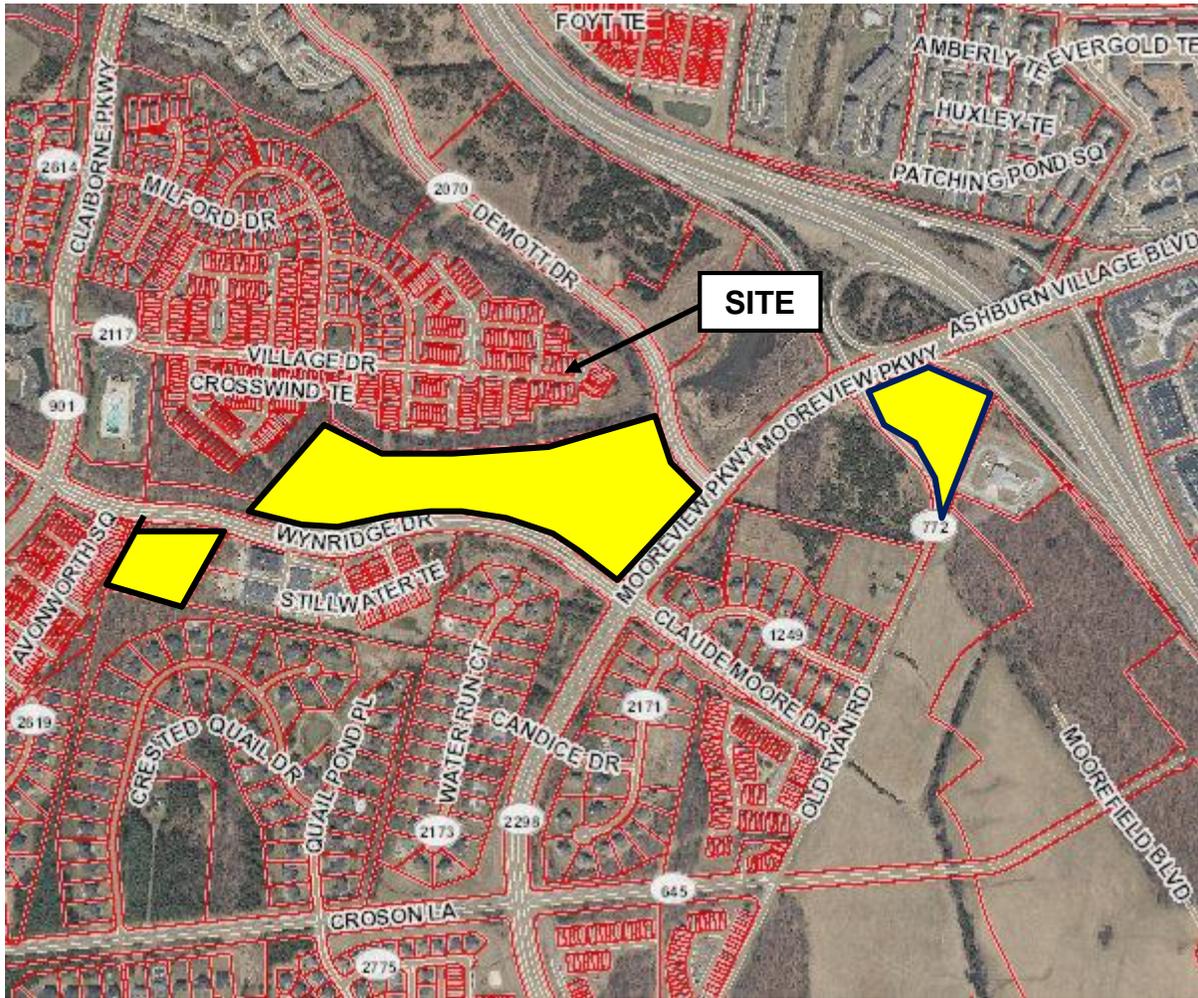
### **Conclusion**

**DTCI has no overall recommendation on these applications at this time. DTCI staff will provide a recommendation after it has reviewed the Applicant's responses to the comments noted in this referral. Depending on the Applicant's responses, DTCI may have additional comments. DTCI staff is available to meet with the Applicant and discuss the comments noted in this referral.**

### **ATTACHMENTS**

1. Site Vicinity Map
2. Proposed Concept Layout Broadlands Sections 206 and 208
3. Existing (2015) and (Future) Lane Use Traffic Control, Intersection Peak Hour Volumes and LOS (TIS Tables 2-4 and Figure 6-3)
4. Site-Generated Assignments for Broadlands Sections 206 and 208
5. Moorefield Boulevard Improvements per SPEX 2008-0032 Plan Set

cc: Kathleen Leidich, AICP, Assistant Director, DTCI  
Lou Mosurak, AICP, Senior Coordinator, DTCI  
Scott Gross, Transit Operations Manager, DTCI

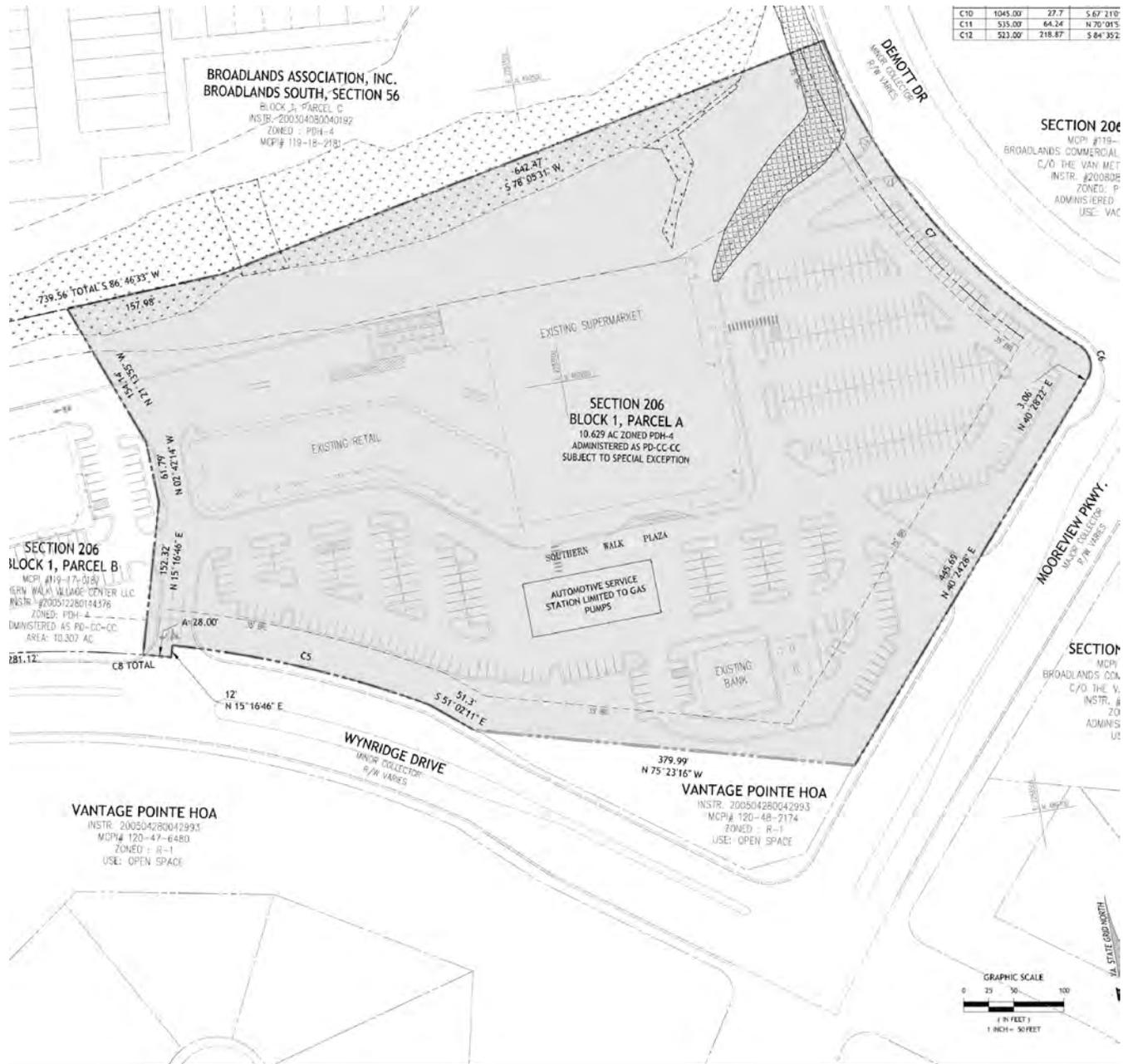


**ZCPA 2015-0010 and SPEX 2015-0015 – Broadlands Sections 204, 206 and 208**

**BROADLANDS SECTION 206 SPEX**  
**(Block 1, Parcel A)**

**PROPOSED PLAN (w/ SPEX)**  
**(Loudoun County, Virginia)**

C10	1045.00	27.7	5.67	210
C11	535.00	64.24	N 70° 01'S	
C12	523.00	218.87	S 64° 35'E	



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Attachment III  
 Proposed Plan  
 (Up to 14 Gas Pumps Provided as an Accessory to the Harris Teeter)

\* Plan Prepared By: J2 Engineers



**ATTACHMENT 2**



**SECTION 2**  
**DRIVEWAY ANALYSES FOR EXISTING CONDITIONS**

Wells + Associates collected vehicular traffic count data on Wednesday, April 22<sup>nd</sup>, 2015 at each of the three (3) site driveways servicing the eastern portion of the shopping center. Data was collected in 15-minute intervals during both the AM peak period (6:00 AM – 9:00 AM) and the PM peak period (4:00 PM – 7:00 PM), and the individual peak hours were utilized at each study area in the analyses for existing conditions. The vehicular traffic count data and a summary of the AM and PM peak hour volumes are provided in Attachment IV.

As requested by DTCI Staff, traffic analyses were prepared for the three (3) driveways servicing the eastern portion of the shopping center. The analyses utilize the AM and PM peak hour volumes described above, peak-hour factors (PHF) based on the traffic count data, and were prepared using the Synchro (Version 9) traffic analyses software based on the 2000 Highway Capacity Manual (HCM) methodology for two-way stop controlled intersections.

Detailed traffic analyses results are provided as Attachment V, and a summary of the capacity analyses for existing conditions is provided in Table. As shown in Table 2 below, all of the driveways currently operate with adequate Levels of Service (LOS “D” or Better) for all turning movements.

**Table 2**  
**Broadlands - Lot 206 (Block 1, Parcel A) Gas Pump SPEX**  
**2015 Existing Conditions HCM Capacity Analyses<sup>(1)</sup>**

Intersection	Operating Condition	Turning Movements	Level-of-Service and Delay <sup>(1)</sup>			
			AM		PM	
			LOS (HCM)	Delay (s/veh)	LOS (HCM)	Delay (s/veh)
<b><u>Demott Drive / Site Driveway</u></b> - Northbound: Driveway w/ Shared Left-Right Lane - Eastbound/Westbound: Demott Drive w/ EB Right Turn Lane - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	NB LR	A	9.1	A	9.6
		EB T	A	0.0	A	0.0
		EB R	A	0.0	A	0.0
		WB L	A	7.5	A	7.4
		WB T	A	0.0	A	0.1
<b><u>Mooreview Parkway / Site Driveway</u></b> - Eastbound: Right-In/Right-Out Driveway - Northbound/Southbound: Mooreview Parkway (Divided) - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	NB T	A	0.0	A	0.0
		EB R	A	8.9	B	12.3
		SB T	A	0.0	A	0.0
		SB R	A	0.0	A	0.0
<b><u>Wynridge Drive / Eastern Site Driveway</u></b> - Southbound: Driveway w/ Shared Left-Right Lane - Eastbound/Westbound: Wynridge Drive w/ EB Left & WB Right Turn Lanes - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	EB L	A	7.6	A	7.6
		EB T	A	0.0	A	0.0
		WB T	A	0.0	A	0.0
		WB R	A	0.0	A	0.0
		SB LR	B	12.9	B	12.6

Notes : (1) Synchro (Version 9) used to calculate 2010 HCM Level of Service (LOS) and delay (in sec/veh).

### SECTION 3

#### DRIVEWAY ANALYSES FOR CONDITIONS W/ THE PROPOSED SPEX AND COMPARISON TO EXISTING CONDITIONS

Traffic forecasts were prepared for the three (3) site driveways by taking the previously discussed existing peak hour traffic volumes and assigning the new external site trips to the area road network. A summary of the traffic assignments and the detailed traffic forecasts is provided in Attachment IV.

Traffic analyses were then prepared for the three (3) site driveways servicing the eastern portion of the shopping center based on the forecasted future traffic volumes that include the additional traffic that would be added as a result of the proposed gas pumps, peak-hour factors (PHF) based on the traffic count data, and were prepared using the Synchro (Version 9) traffic analyses software based on the 2010 Highway Capacity Manual (HCM) methodology for two-way stop controlled intersections.

Detailed traffic analyses results are provided as Attachment VI, and a summary of the capacity analyses with a comparison to existing conditions is provided in Table 3 below:

**Table 3**  
**Broadlands - Lot 206 (Block 1, Parcel A) Gas Pump SPEX**  
**Future Conditions With Proposed SPEX and Gas Pumps - HCM Capacity Analyses<sup>(1)</sup>**

Intersection	Operating Condition	Turning Movements	2015 Existing		Future With Proposed SPEX		Net Impact (Proposed vs. Existing)	
			AM	PM	AM	PM	AM	PM
			LOS (HCM)	Delay (s/veh)	LOS (HCM)	Delay (s/veh)	LOS (HCM)	Delay (s/veh)
<b>Demott Drive / Site Driveway</b> - Northbound: Driveway w/ Shared Left-Right Lane - Eastbound/Westbound: Demott Drive w/ EB Right Turn Lane - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	NB LR	A 9.1	A 9.6	A 9.2	A 9.9	+ 0.1	+ 0.3
		EB T	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		EB R	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		WB L	A 7.5	A 7.4	A 7.5	A 7.4	-	-
		WB T	A 0.0	A 0.1	A 0.0	A 0.1	-	-
<b>Mooreview Parkway / Site Driveway</b> - Eastbound: Right-In/Right-Out Driveway - Northbound/Southbound: Mooreview Parkway (Divided) - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	NB T	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		EB R	A 8.9	B 12.3	A 9.0	B 12.6	+ 0.1	+ 0.3
		SB T	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		SB R	A 0.0	A 0.0	A 0.0	A 0.0	-	-
<b>Wynridge Drive / Eastern Site Driveway</b> - Southbound: Driveway w/ Shared Left-Right Lane - Eastbound/Westbound: Wynridge Drive w/ EB Left & WB Right Turn Lanes - Side-Street Stop Control on Driveway Approach	Unsignalized TWSC	EB L	A 7.6	A 7.6	A 7.7	A 8.6	+ 0.1	+ 1.0
		EB T	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		WB T	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		WB R	A 0.0	A 0.0	A 0.0	A 0.0	-	-
		SB LR	B 12.9	B 12.6	B 13.2	C 19.6	+ 0.3	+ 7.0

Notes : (1) Synchro (Version 9) used to calculate 2010 HCM Level of Service (LOS) and delay (in sec/veh).

As shown in Table 3, all of the driveways are expected to continue to operate with adequate Levels of Service (LOS "D" or Better) for all turning movements. Further, the additional traffic at the site driveways would result in minimal increases in delay and queuing.

## SECTION 5

### HCM CAPACITY ANALYSES AT SITE DRIVEWAY ON WYNRIDGE DRIVE

As requested by DTCI Staff, traffic analyses were prepared for the future site driveway located along the northern site frontage on Wynridge Drive for both conditions with the approved daycare and conditions with the proposed age-restricted dwelling units. Baseline through traffic volumes along Wynridge Drive at the study intersection were extracted from the aforementioned July 7, 2011 traffic study prepared by Wells + Associates that included the adjacent portion of Broadlands Section 208. The through volumes were estimated from the peak hour forecasts for conditions in 2016 at the Broadlands Section 208 driveway located to the east of the study intersection, and indicate that this section of Wynridge Drive would carry approximately 962 vehicles during the AM peak hour (760 vehicles eastbound and 202 vehicles westbound) and 1,293 vehicles during the PM peak hour (456 vehicles eastbound and 837 vehicles westbound).

Traffic forecasts for conditions with the approved daycare facility were estimated by combining the baseline through traffic with traffic that would be generated by the daycare use per the site trip estimates shown on Table 1 and assuming distributions consistent with the baseline traffic patterns on Wynridge Drive.

Alternative traffic forecasts were prepared for conditions with the proposed ZCPA by combining the baseline through traffic with the site traffic that would be generated by the proposed 45 age-restricted dwelling units based on the site trip estimates shown on Table 2 and assuming distributions consistent with the baseline traffic patterns along Wynridge Drive.

The traffic capacity analyses were performed based on the 2010 Highway Capacity Manual (HCM) methodology utilizing the Synchro (Version 9) traffic analyses software and the traffic volume forecasts described above. Detailed traffic analyses results are provided as Attachment VI, and a summary of the capacity analyses with a comparison of the proposed versus approved scenarios is provided in Table 4 below:

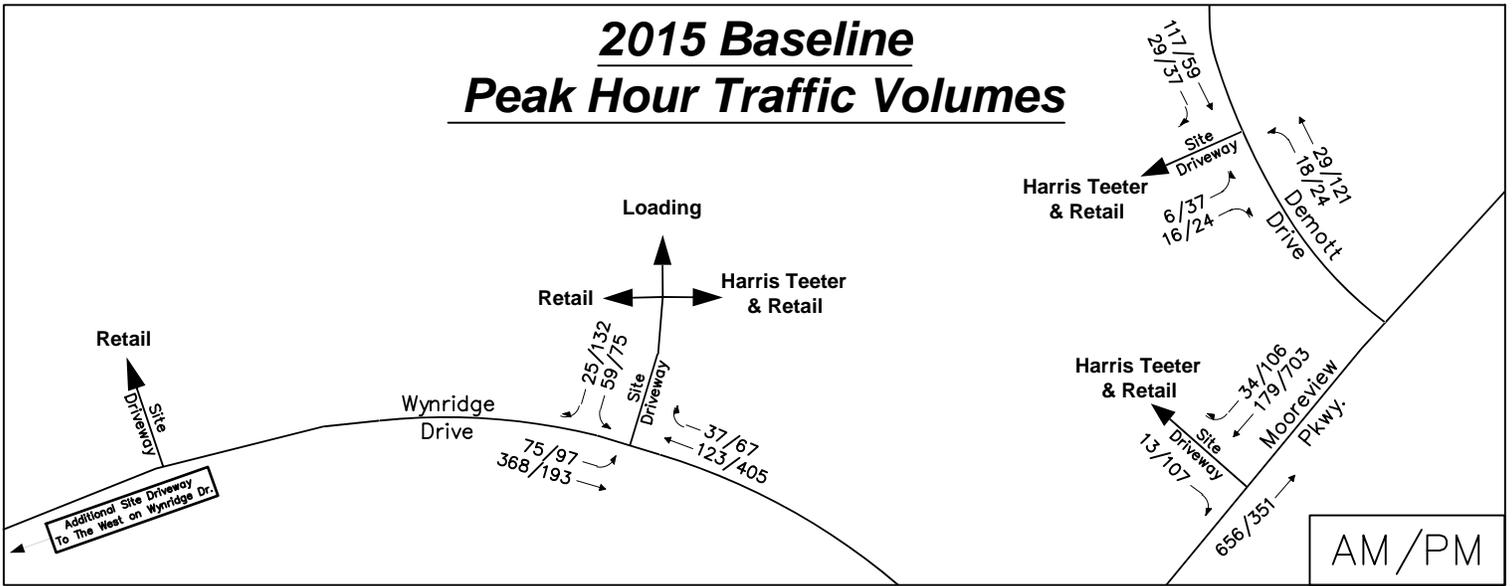
**Table 4**  
**Broadlands - Section 208 - ZCPA**  
**Wynridge Drive at Future Site Driveway - HCM Capacity Analyses Summary and Comparison <sup>(1)</sup>**

Scenario	Operating Condition	Lane Group	Level-of-Service and Delay <sup>(1)</sup>			
			AM		PM	
			LOS (HCM)	Delay (s/veh)	LOS (HCM)	Delay (s/veh)
<b>Approved Conditions</b> - 210 Student Child Daycare Facility - Separate Left and Right Turn Lanes on Wyridge Drive (Existing) - Side Street Stop Control on Northbound Driveway Approach - Single Shared Left-Right Lane on Northbound Driveway	Unsignalized TWSC	NB L-R	C	23.1	C	16.4
		EB T	A	0.0	A	0.0
		EB R	A	0.0	A	0.0
		WB L	A	9.6	A	8.5
		WB T	A	0.0	A	0.0
<b>Proposed Conditions (with ZCPA)</b> - 45 Age-Restricted (Attached) Dwelling Units - Separate Left and Right Turn Lanes on Wyridge Drive (Existing) - Side Street Stop Control on Northbound Driveway Approach - Single Shared Left-Right Lane on Northbound Driveway	Unsignalized TWSC	NB L-R	C	17.7	B	13.0
		EB T	A	0.0	A	0.0
		EB R	A	0.0	A	0.0
		WB L	A	9.5	A	8.4
		WB T	A	0.0	A	0.0
<b>Proposed vs. Approved</b> - Consistent Lane Use for Both Scenarios - Reduction in Average Vehicle Delay for the Northbound Shared Left-Right Turning Movement (AM & PM) - Slight Reduction in Average Vehicle Delay for the Westbound Left Turn Movement (AM & PM)	Unsignalized TWSC	NB L-R		-5.4		-3.4
		EB T		-		-
		EB R		-		-
		WB L		-0.1		-0.1
		WB T		-		-

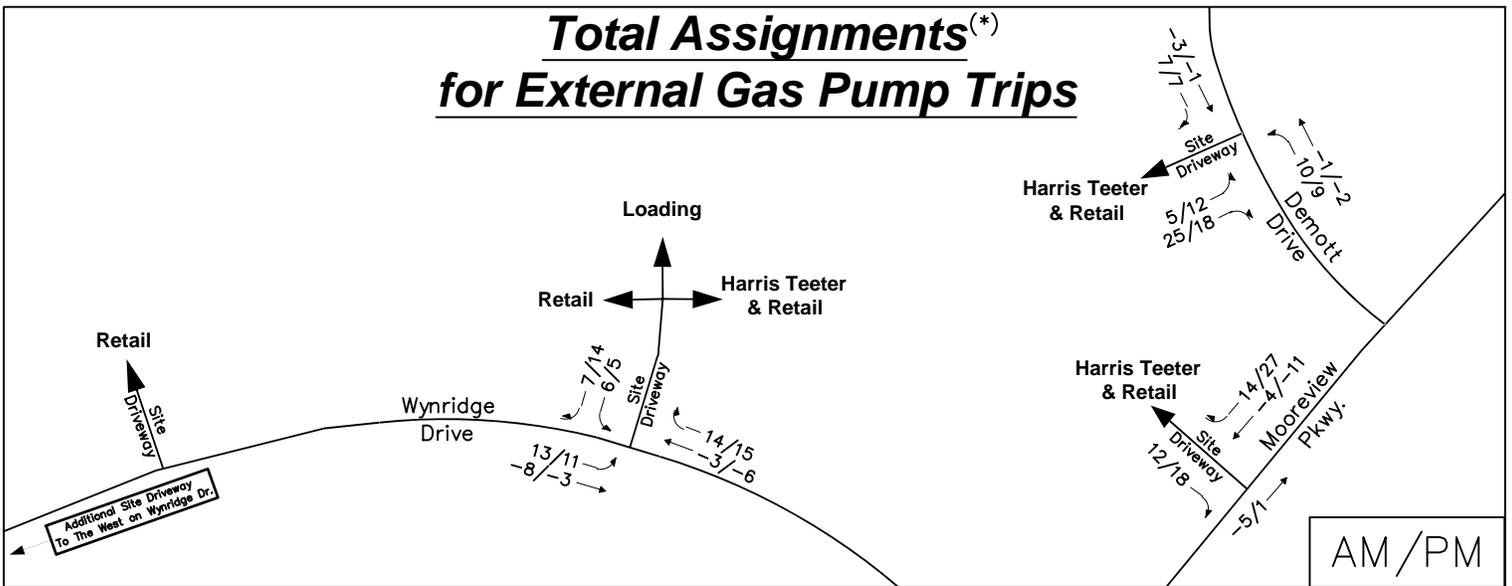
Notes : (1) Synchro (Version 9) used to calculate 2010 HCM Level of Service (LOS) and delay (in sec/veh).

**BROADLANDS SECTION 206 SPEX**  
**(Block 1, Parcel A)**

**2015 Baseline**  
**Peak Hour Traffic Volumes**

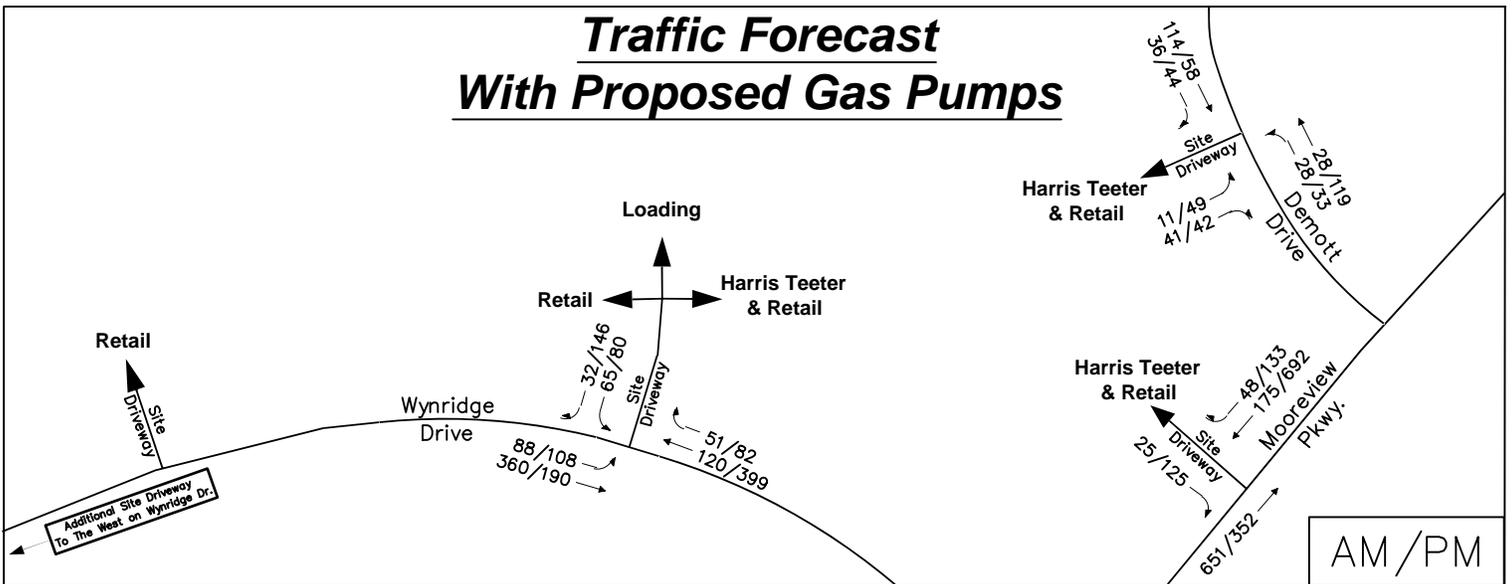


**Total Assignments<sup>(\*)</sup>**  
**for External Gas Pump Trips**



Note: (\*) A breakdown of Primary vs. Pass-By & Diverted Link assignments is provided on the following page.

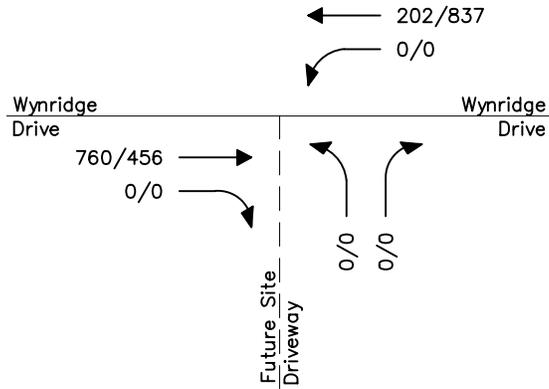
**Traffic Forecast**  
**With Proposed Gas Pumps**



**BROADLANDS SECTION 208**  
**(Block 1, Parcel A)**

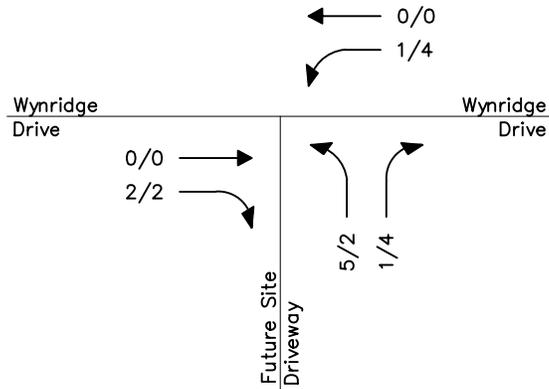
**PROPOSED PLAN (w/ ZCPA) - TRAFFIC FORECASTS**  
**(45 Age-Restricted Attached Dwelling Units)**  
 (Loudoun County, Virginia)

**Baseline Through Volumes on Wynridge Drive**



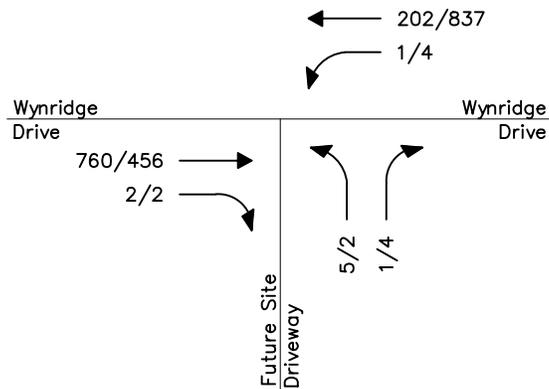
AM/PM

**Site Trip Assignment for 45 Age-Restricted Dwelling Units**

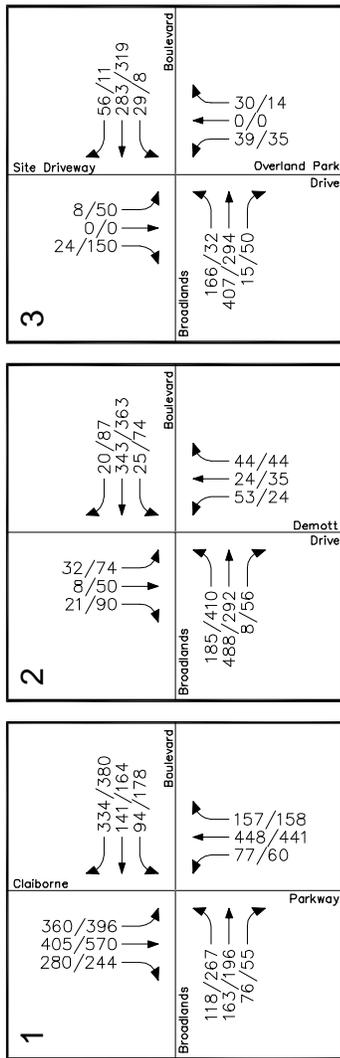


AM/PM

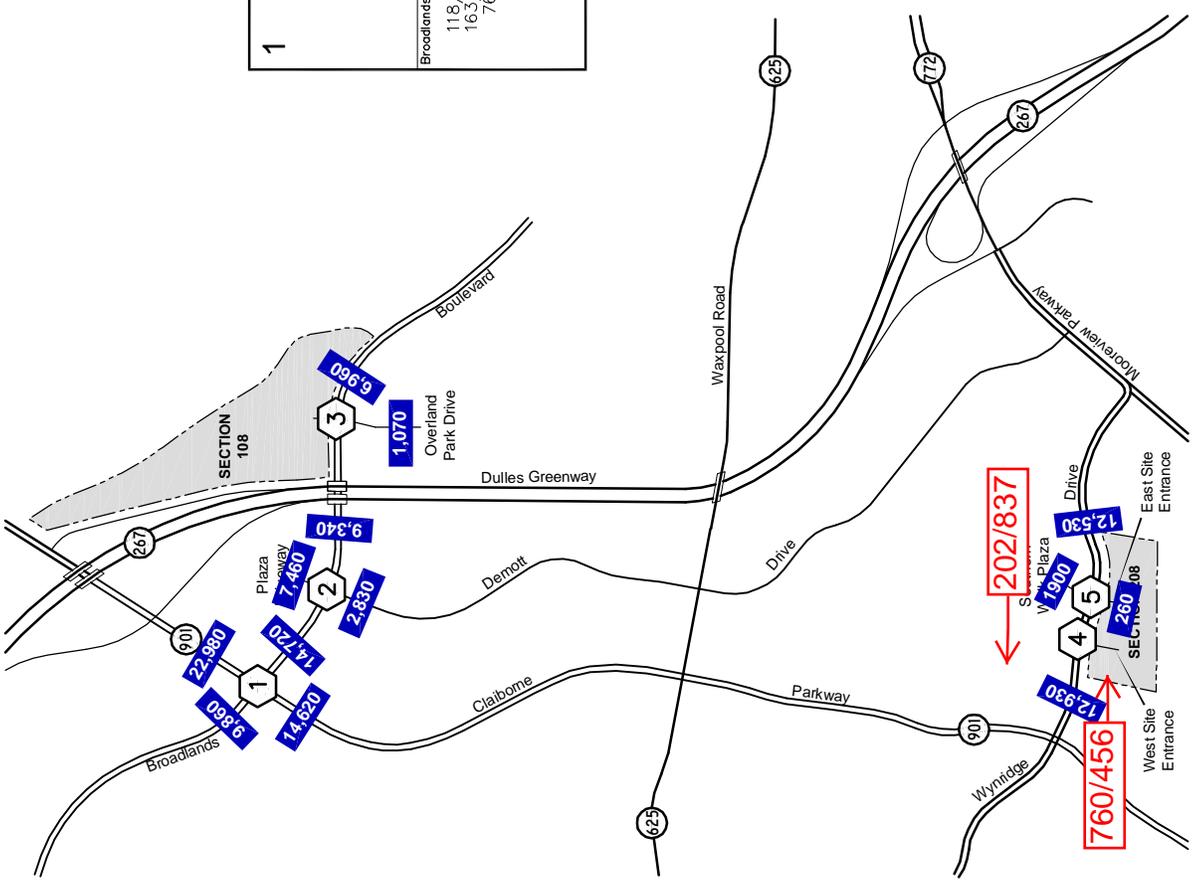
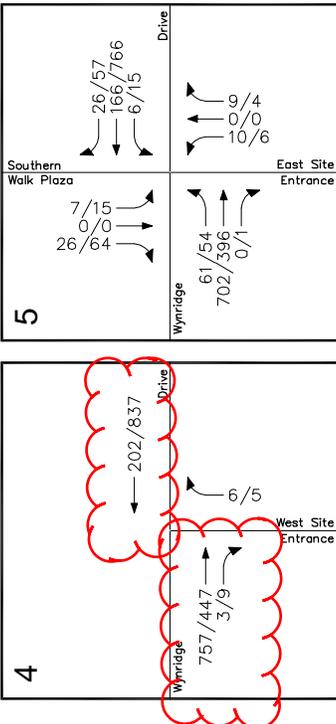
**Traffic Forecast for Site Driveway With Proposed Plan**



AM/PM



**\*\*\*2016 Baseline Traffic Volumes\*\*\***  
 Taken from the July 7, 2011  
 Broadlands Section 108 & 208 TIS.



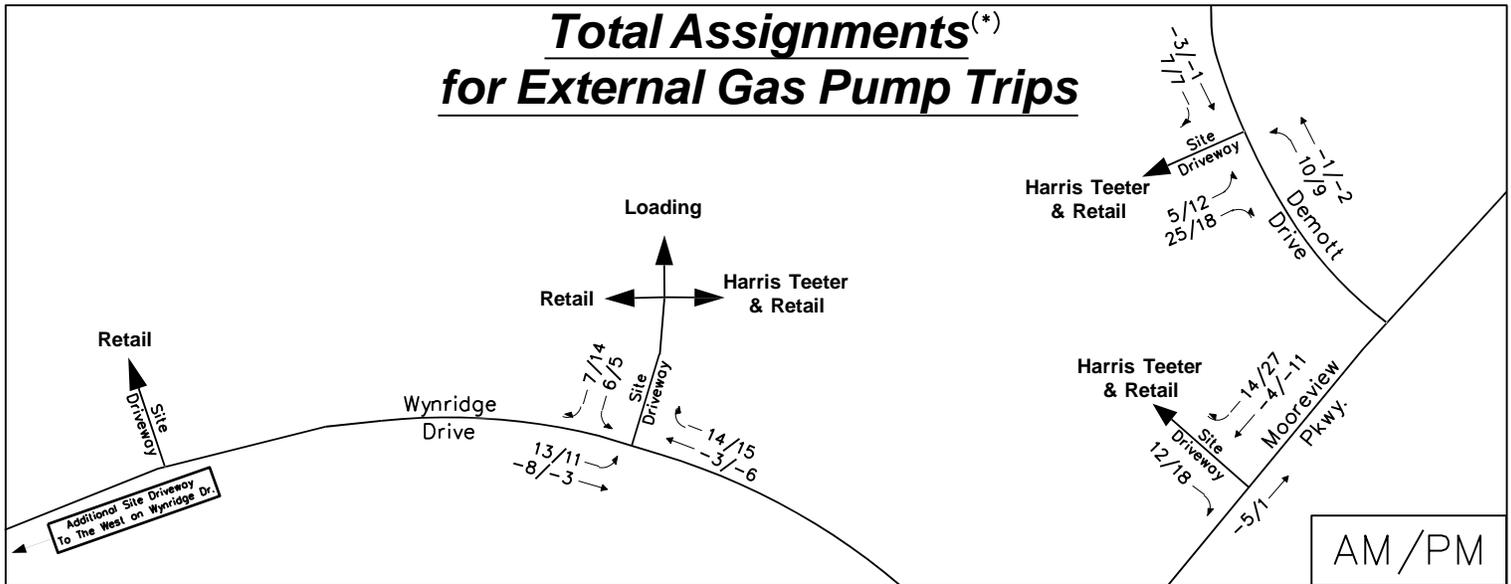
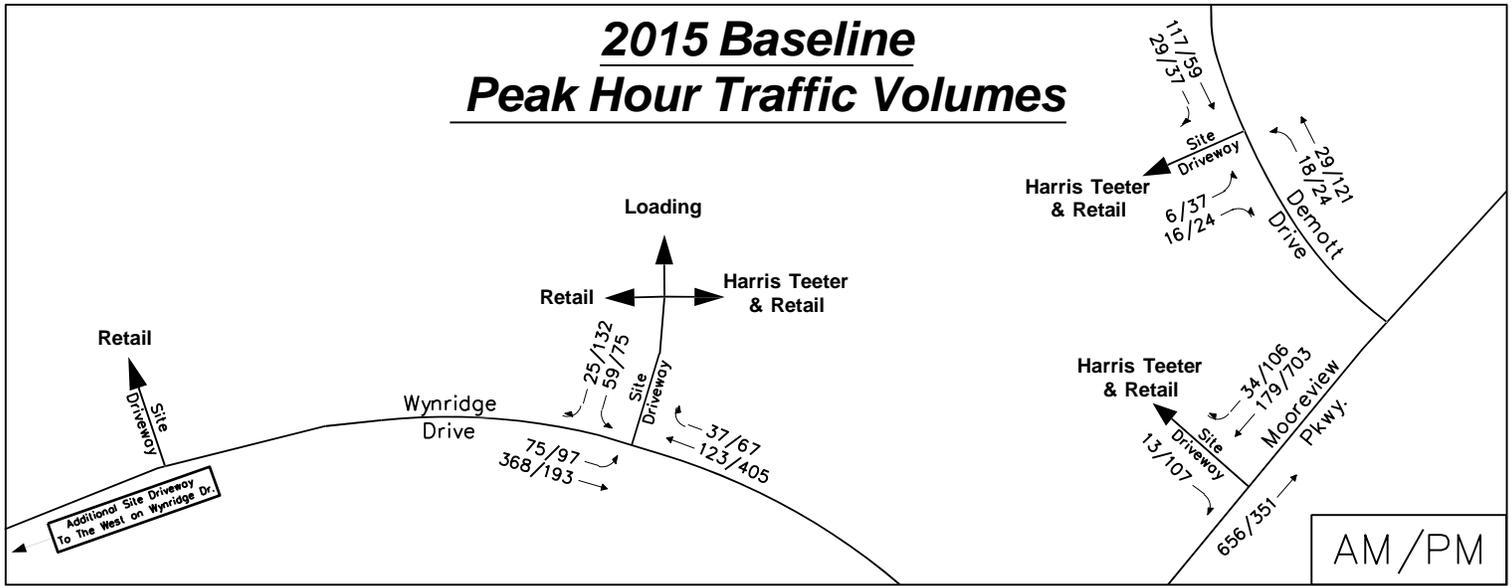
ADT **XX,XXX**  
 AM PEAK HOUR  
 PM PEAK HOUR  
 000/000  
 North

Figure 6-3  
 2016 Future Peak Hour Traffic Forecasts With Development (Proposed Program)

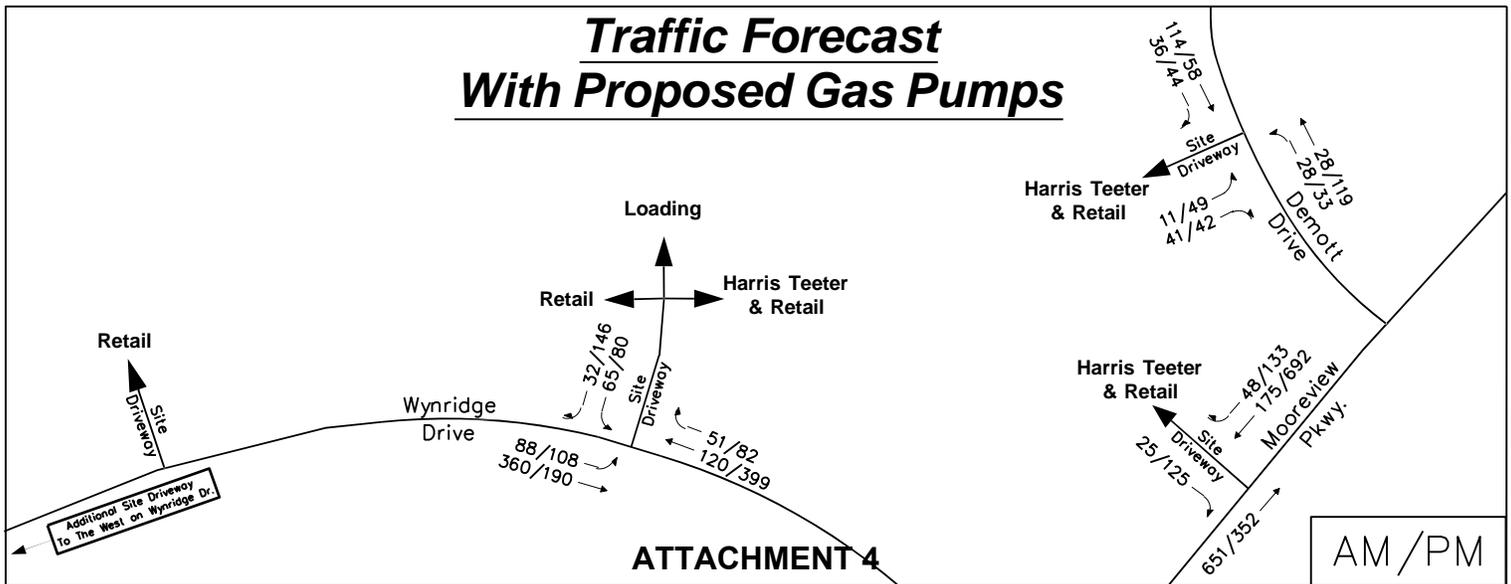
**BROADLANDS SECTION 206 SPEX**

Note:

**(Block 1, Parcel A)**

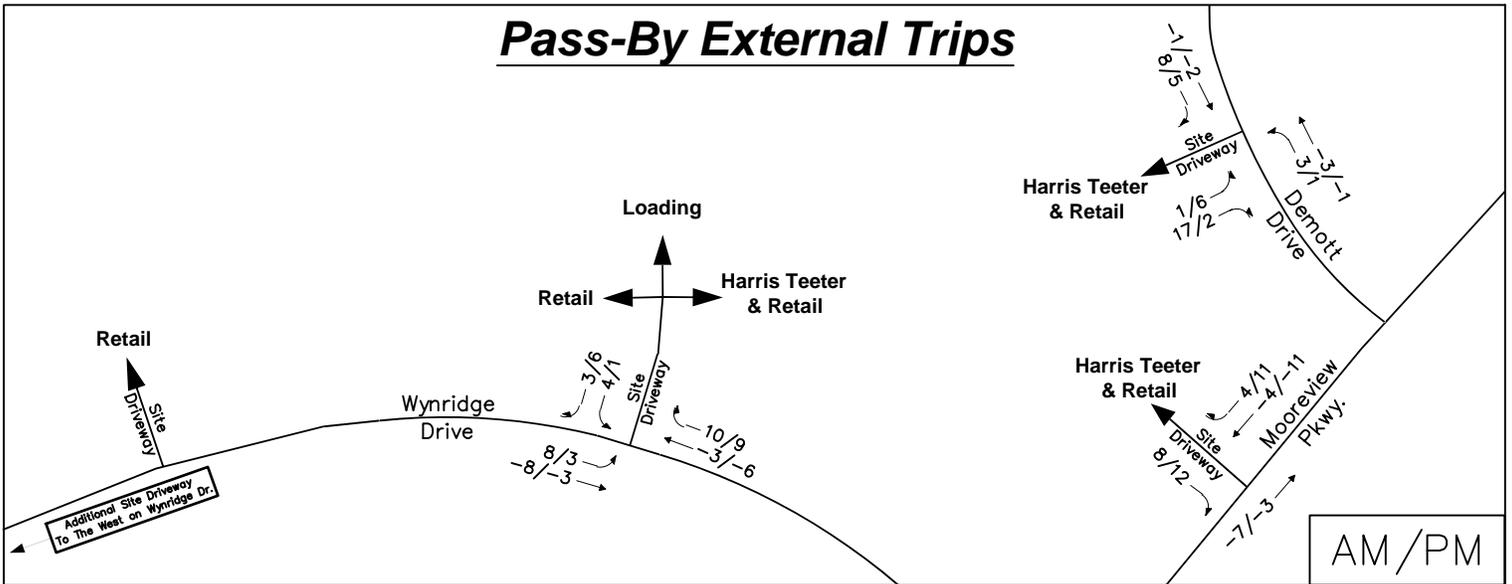


(\*) A breakdown of Primary vs. Pass-By & Diverted Link assignments is provided on the following page.

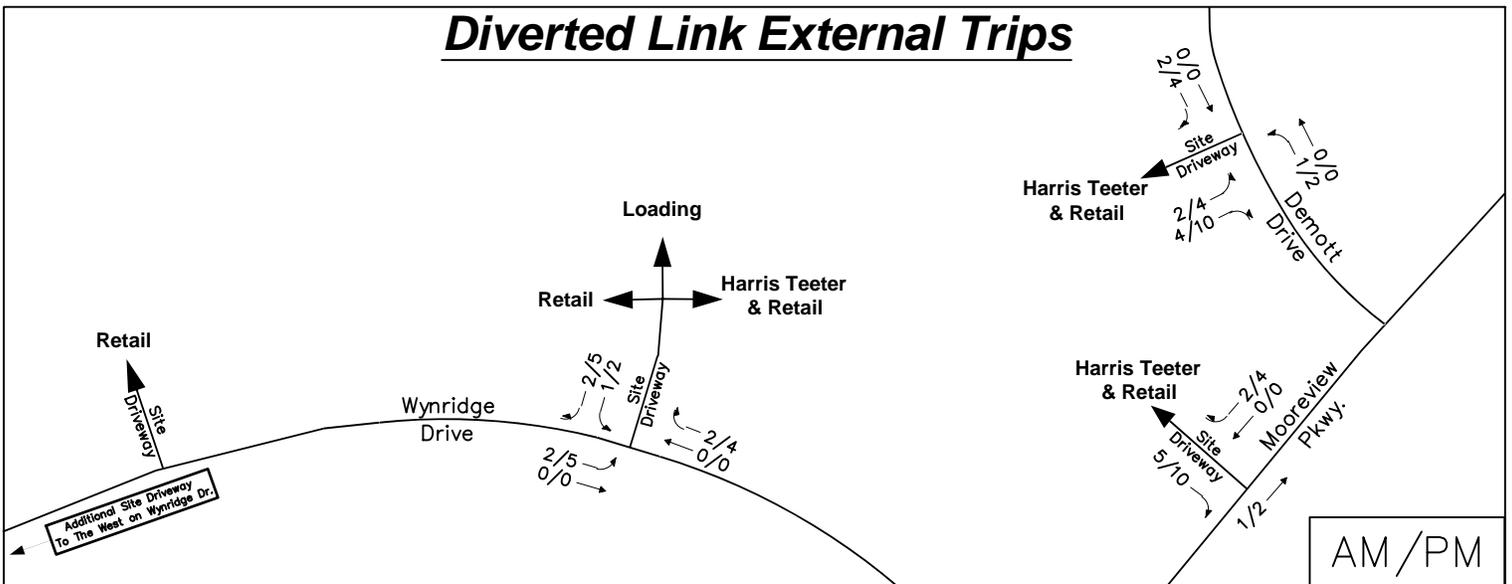


**BROADLANDS SECTION 206 SPEX**  
**(Block 1, Parcel A)**

**Pass-By External Trips**

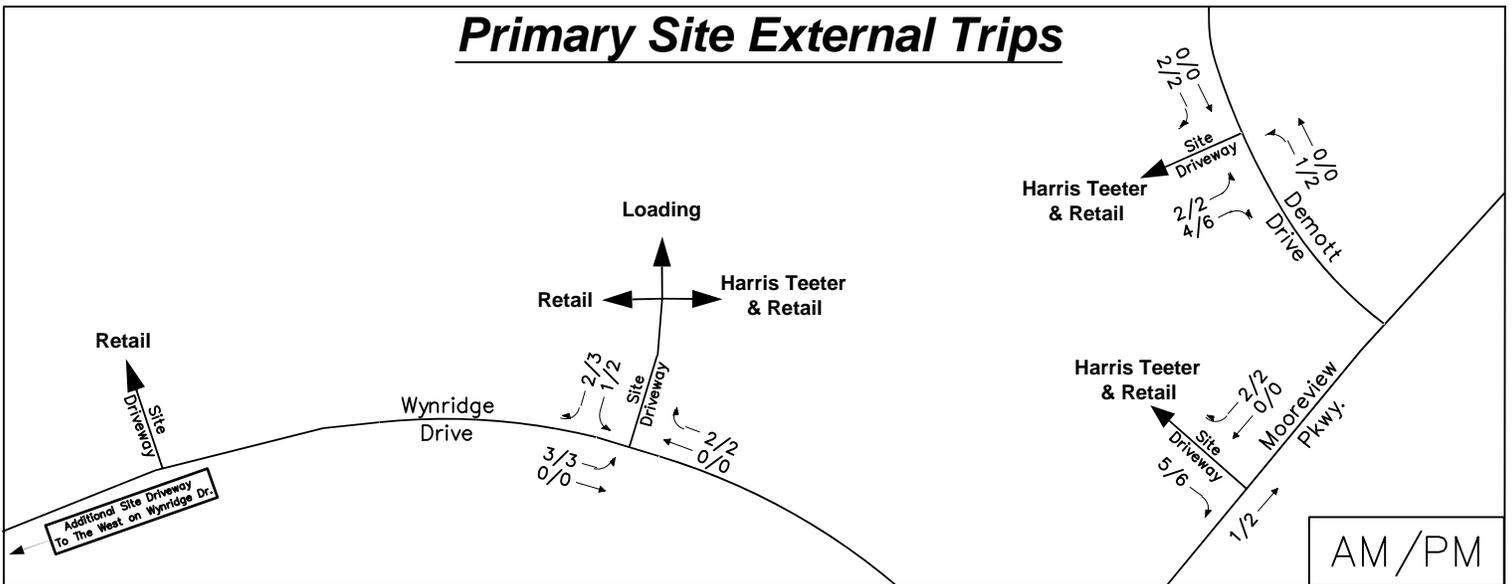


**Diverted Link External Trips**



Note: (\*) A breakdown of Primary vs. Pass-By & Diverted Link assignments is provided in Attachment VI.

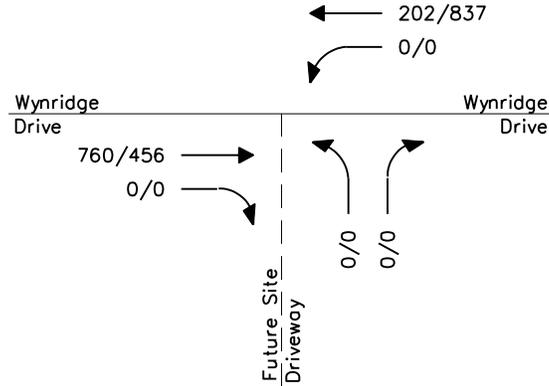
**Primary Site External Trips**



**BROADLANDS SECTION 208**  
**(Block 1, Parcel A)**

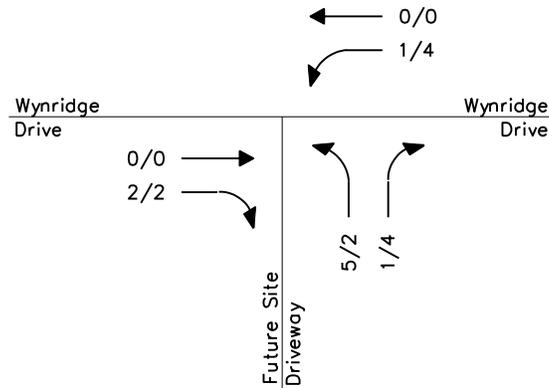
***PROPOSED PLAN (w/ ZCPA) - TRAFFIC FORECASTS***  
***(45 Age-Restricted Attached Dwelling Units)***  
*(Loudoun County, Virginia)*

**Baseline Through Volumes on Wynridge Drive**



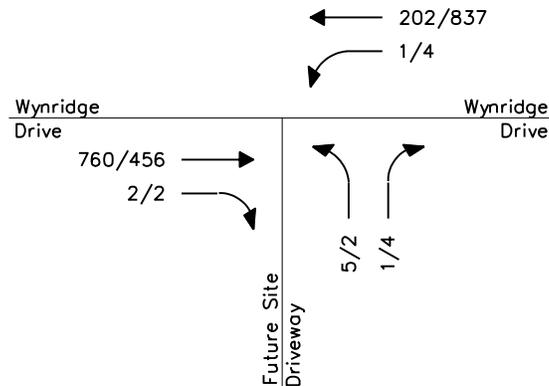
AM/PM

**Site Trip Assignment for 45 Age-Restricted Dwelling Units**



AM/PM

**Traffic Forecast for Site Driveway With Proposed Plan**



AM/PM

No.	DATE	DESCRIPTION
1	08-25-08	ADDED TRAIL, HATCHED EXISTING PAVEMENT AND REVISED NOTES
2	11-07-08	REVISED PER REVISIONS TO SBPR 2007-0011
3	01-12-09	SUBMITTAL
4	04-22-09	REVISED PER RYAN ROAD REVISION
5	05-01-09	ADDITIONAL RYAN ROAD REVISIONS
6	07-16-09	BUFFER AND TRAIL REVISIONS

**ZONING STANDARDS**

**CURRENT ZONE:** PH-4 (ADMINISTERED AS PD-OP)  
**PROPOSED USE:** HOTEL USE  
TOTAL SITE AREA = 271,307 SQ. FT. OR 6.27 ACRES  
TOTAL BUILDING AREA = 1,088,588 SQ. FT. OR 24.86 ACRES  
NET SITE AREA = 197,218 SQ. FT. OR 4.52 ACRES

**SECTION 4-300 PD-OP REQUIREMENTS**

**SPECIAL EXCEPTION USE:** HOTEL  
**MINIMUM LOT SIZE:** ONE (1) ACRE  
**MINIMUM YARDS:**  
BUILDING: 35' MIN. TO ROW  
PARKING: 25' MIN. TO ROW  
**MAXIMUM BUILDING LOT COVERAGE:** (197,218 SQ. FT. X 0.40) = 78,887 SQ. FT.  
**PROPOSED BUILDING LOT COVERAGE:** 20,564 SQ. FT. (0.10)  
**MAXIMUM BUILDING HEIGHT ALLOWED:** 45' PROVIDED THAT A BUILDING MAY BE CREATED TO A MAXIMUM BUILDING HEIGHT OF 65' PROVIDED THAT THE BUILDING SHALL BE CONFINED TO THE EXISTING CONTOUR OF THE GROUND SURFACE WITH LOWER MAXIMUM HEIGHT RESTRICTIONS. ADDITION TO EACH OF THE REQUIRED MINIMUM YARD DIMENSIONS, A DISTANCE OF NOT LESS THAN 1' FOR EACH 1' OF HEIGHT THAT IT EXCEEDS THE 45 FOOT LIMIT.  
**PROPOSED BUILDING HEIGHT:** 65' MAXIMUM, REQUIRED TO BE SET BACK 75' FROM RIGHT OF WAY  
**MAXIMUM FLOOR AREA RATIO:** 0.6, UP TO 2.0 MAX BY SP/EX  
**PROPOSED FLOOR AREA AND FLOOR AREA RATIO:** 1,115,000 S.F. (0.58)  
**MINIMUM LANDSCAPED OPEN SPACE:** 0.2 x BUILDABLE AREA OF LOT (116,971 S.F. X 0.2 = 23,396 S.F.)  
**LANDSCAPE OPEN SPACE PROVIDED:** 24,795 S.F. (0.21)

**BROADLANDS SECTION 204 F.A.R.**

**MAXIMUM FLOOR AREA AND FLOOR AREA RATIO PER ZOPA 1994-0005 & ZMAP 1995-0003**  
BROADLANDS SECTION 204 AREA: 17.82 ACRES OR 776,305 SQ. FT.  
**MAXIMUM FLOOR AREA RATIO:** (0.40)  
**MAXIMUM FLOOR AREA:** (776,305 SQ. FT. X 0.40) = 310,522 S.F.  
**FLOOR AREA BREAKDOWN FOR SECTION 204:**  
TOTAL FLOOR AREA: 310,522 SQ. FT.  
FLOOR AREA PROPOSED WITH STEEL 2007-0046: 144,000 SQ. FT.  
NET FLOOR AREA AVAILABLE FOR THIS APPLICATION: 166,522 SQ. FT.  
FLOOR AREA PROPOSED WITH THIS APPLICATION: 115,000 SQ. FT.

**SECTION 5-900 ACCESS & SETBACKS**

**SETBACK FROM MAJOR COLLECTOR (RTE. 772):**  
MINIMUM SETBACK: 80'  
BUILDING: 75'  
PARKING: 35'  
**SETBACK FROM MAJOR COLLECTOR (RTE. 267):**  
MINIMUM SETBACK: 1150'  
BUILDING: 150'  
PARKING: 100'  
**SETBACK FROM ALL OTHER ROADS IN NON-RESIDENTIAL DISTRICTS (OLD RYAN ROAD):**  
MINIMUM SETBACK: 80'  
BUILDING: AS PER DISTRICT (35')  
PARKING: 25', UNLESS IN DISTRICT (25')  
\* ALL PROPOSED SETBACKS SHALL MEET THE MINIMUMS EXCEPT FOR THE BUILDING SETBACK FROM RTE. 267 WHICH IS ESTABLISHED AS 125 FT. AS PER PROFFER# 65 FROM ZMAP 1995-0003.

**SECTION 5-611 HOTEL/MOTEL USES**

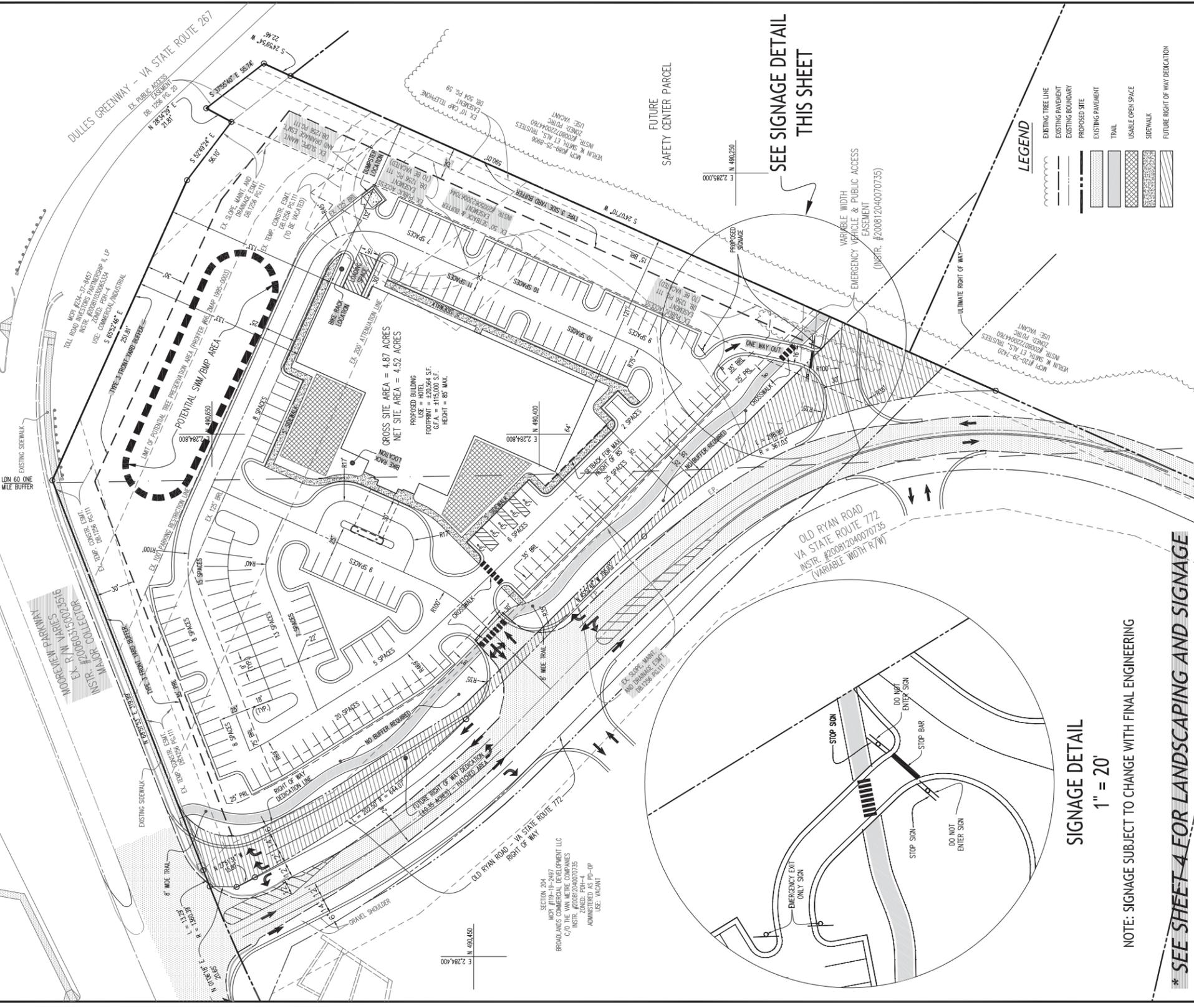
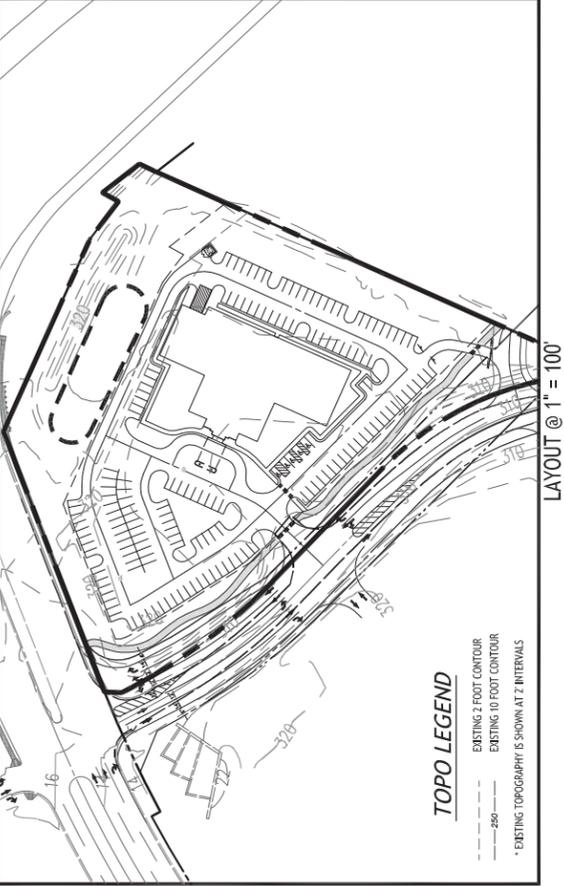
**5-611 HOTEL/MOTEL CRITERIA:**  
(A) LOCATION CRITERIA  
(1) HOTEL/MOTEL SHALL BE LOCATED ON OR WITH READY ACCESS TO COLLECTOR OR ARTERIAL ROADS.  
(2) HOTEL/MOTEL BUILDINGS AND USES SHALL NOT BE LOCATED IN ENVIRONMENTALLY CRITICAL OR SENSITIVE AREAS AS DEFINED BY THE COMPREHENSIVE PLAN.  
(B) SITE DEVELOPMENT CRITERIA.  
(1) HOTEL/MOTEL USES SHALL BE SERVED BY A PUBLIC WATER AND SEWERAGE DISPOSAL SYSTEM.  
(2) HOTEL/MOTEL USES SHALL BE SEPARATED FROM AGRICULTURAL, RESIDENTIAL OR INSTITUTIONAL USES BY A LANDSCAPE BUFFER WITH A MINIMUM WIDTH OF 100 FEET OR THE MINIMUM WIDTH REQUIRED BY SECTION 5-1400 OF THIS ORDINANCE, WHICHEVER IS GREATER.

**SECTION 5-1102 PARKING & LOADING**

**COMMERCIAL LOADING USE:**  
**PARKING REQUIRED:** 2 FOR OWNERS/MANAGERS PLUS 1 PER SLEEPING ROOMS PLUS ANY REQUIRED FOR RESTAURANT, RESTAURANT/PANDETT, OR MEETING ROOMS.  
**PARKING PROVIDED:** 173 TOTAL SPACES = (160 ROOMS PROPOSED) PLUS 2 SPACES FOR OWNER/MANAGER + 11 SPACES FOR MEETING ROOMS (40 X 0.25 = 10 SPACES) (OCCUPANCY 40 PLUS 1 EMPLOYEE ASSOCIATED WITH MEETING ROOM = 11 SPACES); 6 HANDICAP SPACES WILL BE PROVIDED INCLUSIVE OF OVERALL REQUIRED SPACES  
**LOADING REQUIRED:** MIN. ONE (1) FOR LOADING WITH 50 OR MORE ROOMS  
**LOADING PROVIDED:** 1 SPACE

**SECTION 5-1400 BUFFERING & SCREENING**

**TABLE 5-1414(A):**  
**USE:** HOTEL GROUP 7  
ALONG DULLES GREENWAY (NORTH): TYPE 3 FRONT YARD BUFFER, MIN. 20'-MAX. 30'  
ALONG MOOREVIEW PARKWAY (WEST): TYPE 3 FRONT YARD BUFFER, MIN. 20'-MAX. 30'  
ALONG OLD RYAN ROAD (SOUTH): NO BUFFER REQUIRED  
FUTURE USE - FIRE STATION (EAST): TYPE 3 SIDE YARD BUFFER, MIN. 25'-MAX. 30'





**J2 Engineers, Inc.**  
 7030 Infinity Ridge Road  
 Manassas, VA 20109  
 703.361.1550 (office)  
 703.361.1566 (fax)  
 www.j2engineers.com

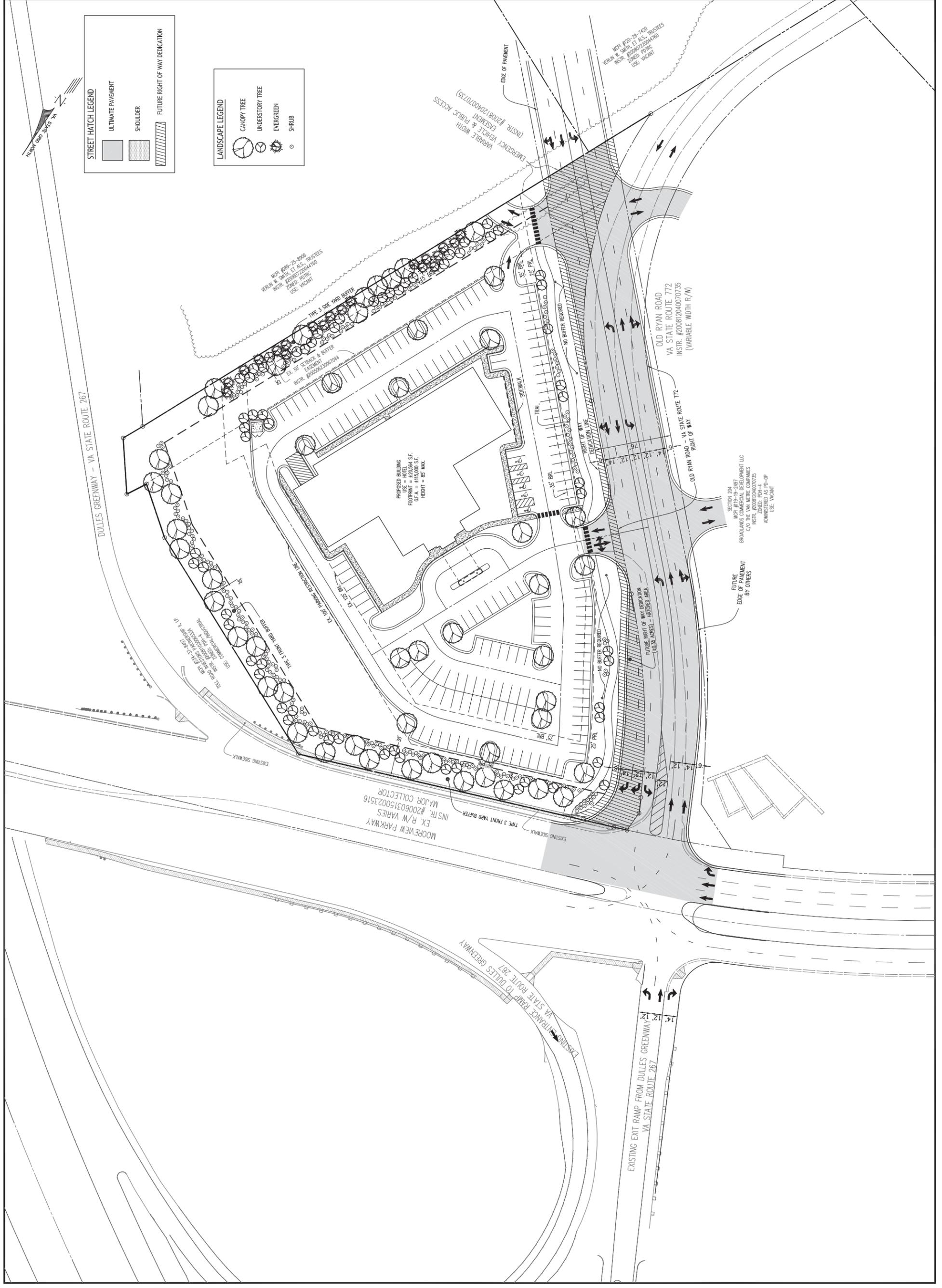
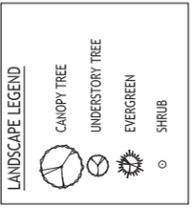
PLAN# IMCB10-SP2Y  
 DATE: AUGUST 25, 2008  
 CONTOUR INT. = 1'0"  
 SCALE: 1" = 40'

PLAN DATE  
 04-22-2008  
 09-25-2008  
 01-12-2009  
 07-16-2009  
 05-01-2009

**BROADLANDS SOUTH SECTION 204**  
 SPEX 2008-0032  
 ROAD IMPROVEMENT EXHIBIT/LANDSCAPE PLAN  
 LUDLOW COUNTY, VIRGINIA  
 DULLES ELECTION DISTRICT

No.	DATE	DESCRIPTION
1	08-25-08	ADDED LANDSCAPING, SIGNAGE DETAIL AND TRAIL
2	11-07-08	REVISED PER REVISIONS TO SBPR 2007-0011
3	01-12-09	3RD SUBMISSION
4	04-22-09	REVISED PER RYAN ROAD REVISION
5	05-01-09	ADDITIONAL RYAN ROAD REVISIONS
6	07-16-09	BUFFER AND TRAIL REVISIONS

SHEET **4** OF **4**



SECTION 204  
 MDT #19-19-2467  
 BROADLANDS SOUTH SECTION 204  
 C/O THE VAN METER COMPANIES  
 INST. #200812040070735  
 ZONED: PPH-4  
 ADMINISTERED AS PH-UP  
 USE: VACANT

FUTURE  
 EDGE OF PAVEMENT  
 BY OTHERS

EXISTING EXIT RAMP FROM DULLES GREENWAY  
 VA STATE ROUTE 267

EXISTING ENTRANCE RAMP TO DULLES GREENWAY  
 VA STATE ROUTE 267