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The Shops at Meridian Ranch Lot 4
PPR18033
Transportation Memorandum
(LSC #184510)
July 3, 2018

Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.



7/11/18
Date



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July 3, 2018

Mr. Raul Guzman
Tech Contractors
P.O. Box 80036
San Diego, CA 92138

RE: The Shops at Meridian Ranch Lot 4
PPR18033
El Paso County, CO
Traffic Technical Memorandum
LSC #184510

Dear Mr. Guzman:

LSC Transportation Consultants, Inc. has prepared this traffic technical memorandum comparing the currently proposed land use and estimated vehicle-trip generation for Lot 4 of the Shops at Meridian Ranch to the land use and trip generation assumed in the *Meridian Ranch Commercial Residential Filing 4B Traffic Technical Memorandum* by LSC dated July 22, 2014. The site is located north of Stapleton Drive and east of Meridian Road in El Paso County, Colorado. The site location is shown in Figure 1.

LAND USE AND ACCESS

The site plan used in the July 22, 2014 traffic impact study for the buildout of the Meridian Ranch Commercial site showed 58,005 square feet of retail floor space, plus a gas station with a 5,000-square-foot convenience store. However, as at the time most of the site plan was conceptual only, it was decided that the trip generation estimate and analysis of traffic impacts should be studied for a maximum potential land use of up to 90,000 square feet of retail floor space in addition to the gas station.

Since completion of that report, two buildings with 9,481 square feet of floor space each and one building with 10,532 square feet of floor space have been constructed on Lot 3 for a total square footage of 29,494.

The currently proposed plan for Lot 4 of the Shops at Meridian Ranch includes two buildings with a total of 29,494 square feet of floor space. The site plan is shown in Figure 2. Full-movement access for this lot is proposed to Fleece Flower Way. An additional full-movement access to

Tourmaline Drive is proposed midway between Meridian Road and Tourmaline Drive. The July 2014 study assumed a right-in/right-out only access at this location. A deviation to the El Paso County *Engineering Criteria Manual (ECM)* request is being submitted for the proposed spacing of the access.

If the remaining Shops at Meridian Ranch site area is developed as shown on the July 22, 2014 site plan, the resulting buildout land use would total about 80,700 square feet of retail floor space plus a potential future gas station. This would be 9,300 square feet below the maximum potential land use of 90,000 square feet used in the July 2014 trip generation estimate and traffic analysis.

ACCESS SIGHT DISTANCE

Figure 3 shows the required *El Paso County Engineer Criteria Manual (ECM)* lines-of-sight at the proposed access to Tourmaline Drive. The sight distance analysis to the east is based on a travel speed of 25 miles per hour (the posted limit) on Tourmaline Drive. The sight distance analysis to the west is based on a travel speed of 15 mph as vehicles approaching the access from this direction will be traveling at a slower speed as they maneuver through the right-in/right-out (future three-quarter movement) Tourmaline Drive/Meridian Road intersection. As the ECM does not provide required sight distances for travel speeds lower than 25 mph the required distances to the west were calculated using the American Association of State Highway and Transportation Officials (AASHTO) standard. These standards are generally consistent with the ECM criteria. Areas along and north of these lines would need to have low-level landscaping and be free of other obstructions (such as monument signs and parking areas) that would restrict the drivers' line of sight. Landscaping should be low—about 18 inches or lower in height to the east of the passenger vehicle lines of sight shown.

This sight distance analysis should be based on the speed limit of 25 mph.

TRIP GENERATION

Estimates of the traffic volumes expected to be generated by the site have been made using the nationally published trip generation rates found in *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 1 shows the results of the trip generation estimates. Also shown in the table for comparison are the original buildout trip generation estimates as presented in the July 22, 2014 traffic study.

As shown in Table 1, the proposed buildings for Lot 4 are projected to generate about 1,273 new vehicle-trips on the average weekday, with about one-half of the vehicles entering and one-half of the vehicles exiting in a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 43 vehicles would enter and 26 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:30 and 6:30 p.m., about 83 vehicles would enter and 90 vehicles would exit the site.

Assuming Lots 1 and 2 are developed with a gas station with 20 vehicle fueling positions and 19,800 additional square feet of retail floor space, the entire Shops at Meridian Ranch development is projected to generate about 4,989 vehicle-trips on the average weekday. This is about 443 fewer vehicle trips per day than was estimated in the July 2014 study. During the morning peak hour about 231 would enter and 184 vehicles would exit the entire Shops at Meridian Ranch development. This is about 49 more entering vehicles and 32 more exiting vehicles than was estimated in the July 2014 study. During the afternoon peak hour about 349 would enter and 361 vehicles would exit the entire Shops at Meridian Ranch development. This is about 62 fewer entering vehicles and 61 fewer exiting vehicles than was estimated in the July 2014 study.

The increase in the projected morning peak-hour trip generation despite the decrease in total floor area is due to a change in the trip generation rates for ITE Land Use 820 Shopping Center from the 9th edition of *Trip Generation* which were used in the 2014 report and the rates shown in the 10th edition which were used for the current trip generation estimate.

The increase in trip generation estimate during the average morning peak hour should not present a problem, however, as the access points and adjacent intersections will be designed for the afternoon peak-hour traffic, which is significantly higher than the morning peak hour.

TOTAL TRAFFIC

Please refer to the *Meridian Ranch Commercial Residential Filing 4B Traffic Technical Memorandum* by LSC dated July 22, 2014 for the projected long-term total traffic volumes and level of service analysis.

SITE AND ACCESS TRUCK TURNING ANALYSIS

Figures 4 through 6 present the results of a preliminary truck turning analysis using AutoTurn. The figures show turning paths for WB-50 and SU (Single Unit) trucks. These are intended to assist with the planning of the site with respect to delivery truck access and to identify potential truck turning paths in County right-of-way.

RECOMMENDATIONS

- Based on the criteria contained in the ECM and the projected turning volumes shown in Figure 11a of the *Meridian Ranch Commercial Residential Filing 4B Traffic Technical Memorandum* by LSC dated July 22, 2014 an eastbound right-turn deceleration lane would **not** be required on Tourmaline Drive approaching the proposed access point.

- This property is within the Woodmen Road Metropolitan District and applicable fees would apply.

* * * * *

Please contact me if you have any questions

Respectfully submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E., PTOE
Principal

JCH:KDF:bjwb

Enclosures: Table 1
Figures 1-6
Site Plan

Explain in the narrative why you are using a weekday trip generation rates greater than the average rate in the ITE 10th edition book.

Table 1
Trip Generation Estimate
The Shops at Meridian Ranch

Lot	Use Code	Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾				Total Trips Generated					Internal Trips	Total External Trips Generated					Pass-By Trips ⁽²⁾	New External Trips Generated Average Weekday Traffic	
				Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In		Afternoon Peak Hour Out	Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In			Afternoon Peak Hour Out
Currently Proposed Land Use																					
4D	820	Shopping Center	17,450 KSF ⁽³⁾	63.16	1.41	0.86	2.72	2.94	1,102	25	15	47	51	2.75%	1,072	24	15	46	50	34%	707
4E	820	Shopping Center	13,956 KSF	63.16	1.41	0.86	2.72	2.94	882	20	12	38	41	2.75%	857	19	12	37	40	34%	566
			31,406 KSF						1,984	44	27	85	92		1,929	43	26	83	90		1,273
Existing Land Use																					
3	820	Shopping Center	29,494 KSF	63.16	1.41	0.86	2.72	2.94	1,863	42	25	80	87	2.75%	1,812	40	25	78	84	34%	1,196
Existing Plus Currently Proposed			60,900 KSF												3,741	83	51	161	174		2,469
Future Land Use																					
1	820	Shopping Center	13 KSF	63.16	1.41	0.86	2.72	2.94	821	18	11	35	38	2.75%	799	18	11	34	37	34%	527
2	945	Gasoline/Service Station with Convenience Market	20 VFP	205.36	6.36	6.11	7.13	6.86	4,107	127	122	143	137	5%	3,902	121	116	136	130	56%	1,717
	820	Shopping Center	6.8 KSF	63.16	1.41	0.86	2.72	2.94	430	10	6	18	20	2.75%	418	9	6	18	19	34%	276
Buildout Total ⁽⁴⁾			85,700 KSF												5,118	148	133	188	187		2,520
															8,859	231	184	349	361		4,989
Trip Generation Estimate Shown in the Meridian Ranch Commercial and Residential Filing 4B Traffic Technical Memorandum by LSC, July 11, 2014																					
---	820	Shopping Center	90 KSF	70.46	0.98	0.63	3.23	3.36	6,342	88	56	290	302	2.75%	6,167	86	55	282	294	34%	4,070
	945	Gasoline/Service Station with Convenience Market	20 VFP	162.78	5.08	5.08	6.76	6.76	3,256	102	102	135	135	5%	3,093	97	97	128	128	56%	1,361
									9,597	190	158	426	437		9,260	182	151	411	422		5,431
Change in Trip Generation Estimate															-401	49	32	-62	-61		-443

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017" by ITE
(3) KSF = thousand square feet
(4) Assumes a 5,000 square foot convenience store



Approximate Scale
Scale: 1" = 1,200'

Figure 1
**Vicinity
Map**

The Shops at Meridian Ranch Lot 4 (LSC #184510)

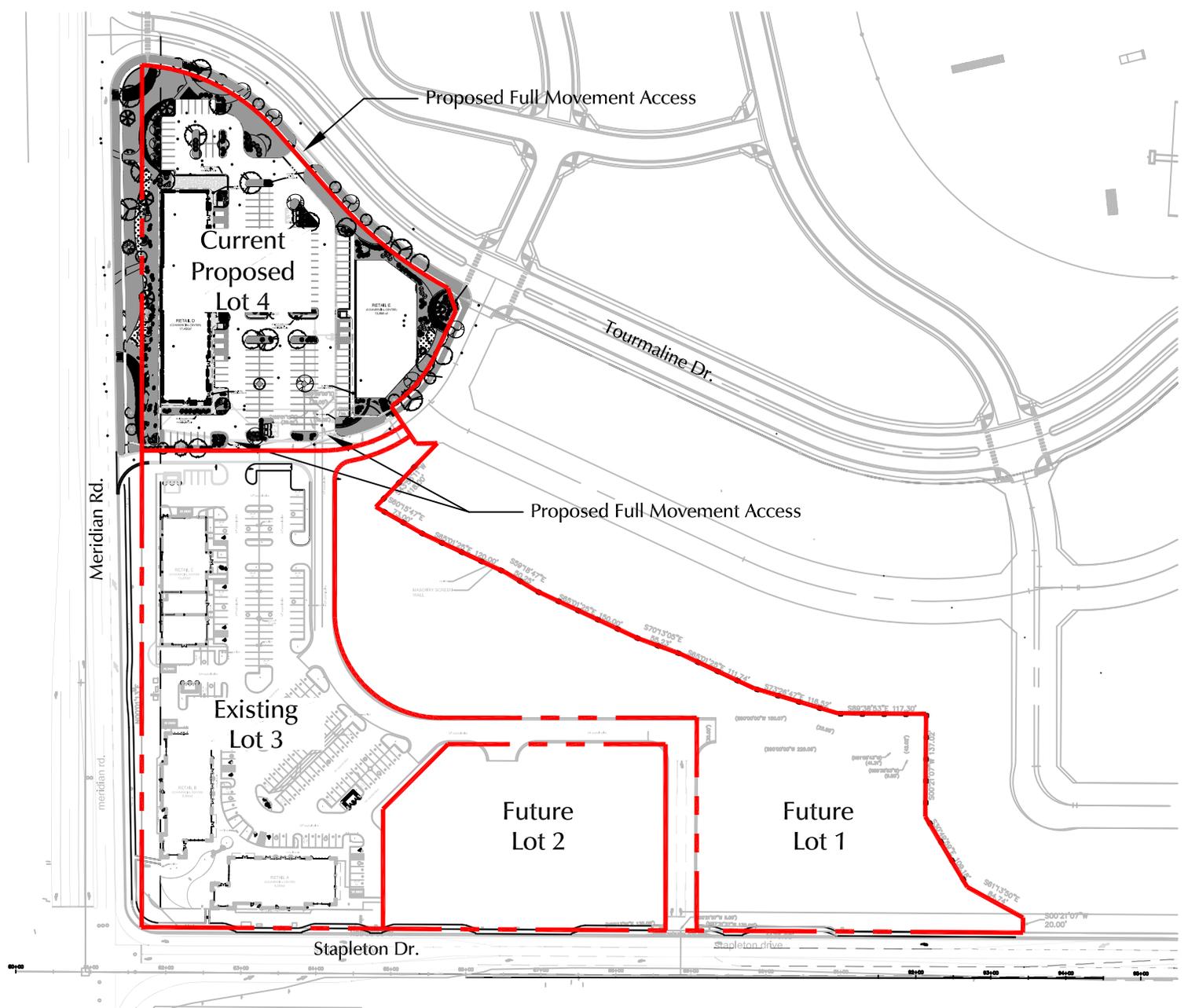
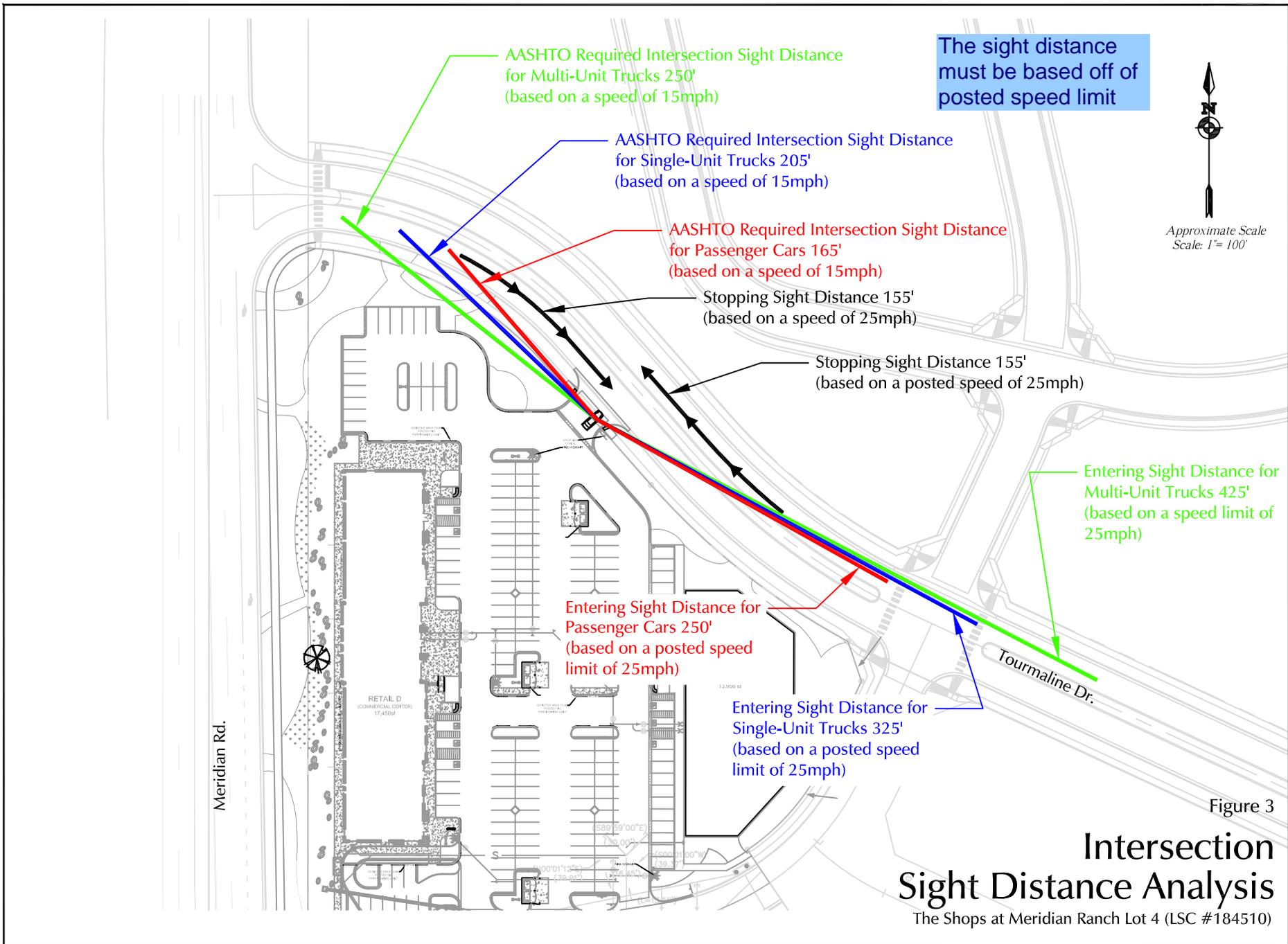
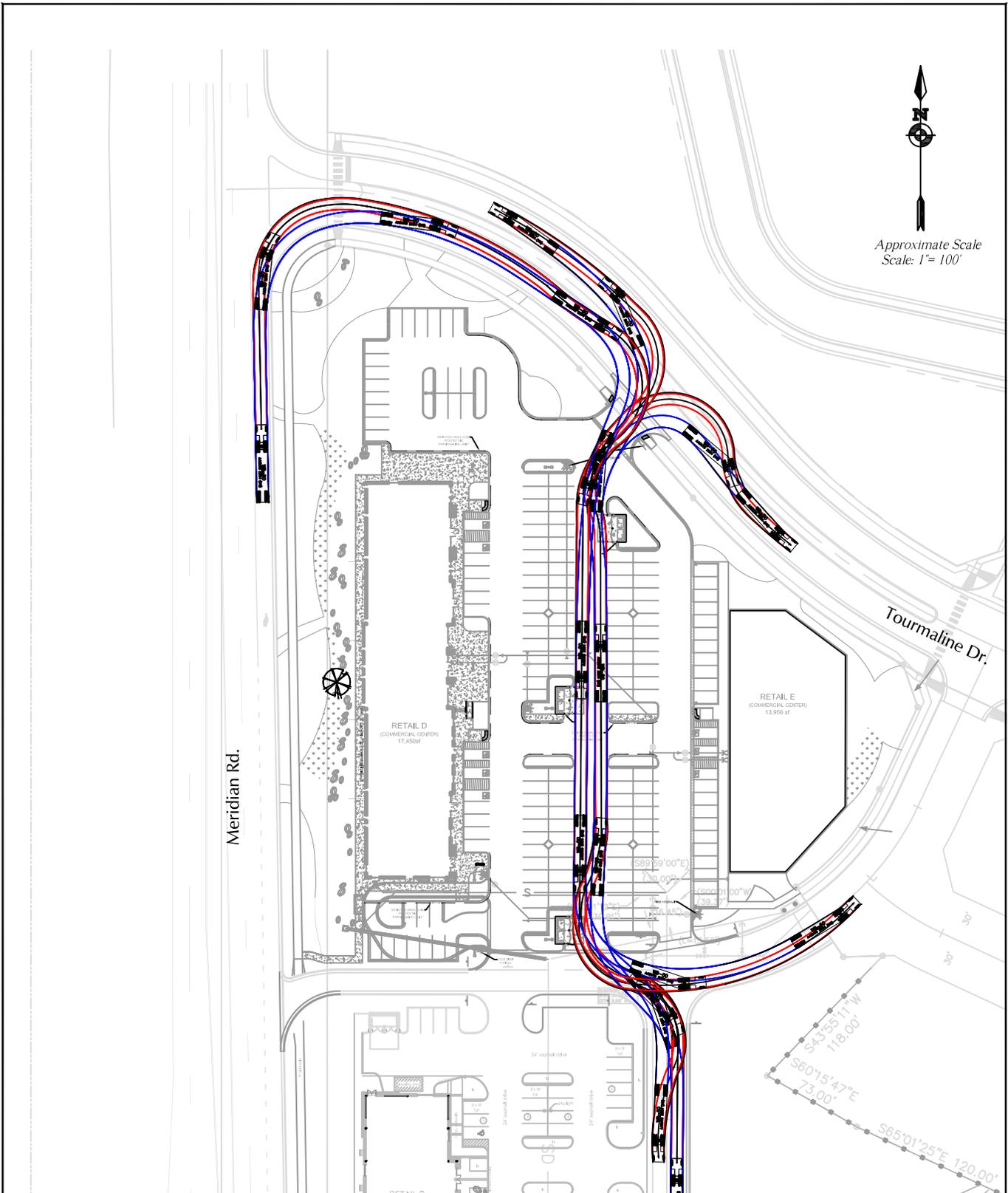


Figure 2
Site Plan

The Shops at Meridian Ranch Lot 4 (LSC #184510)



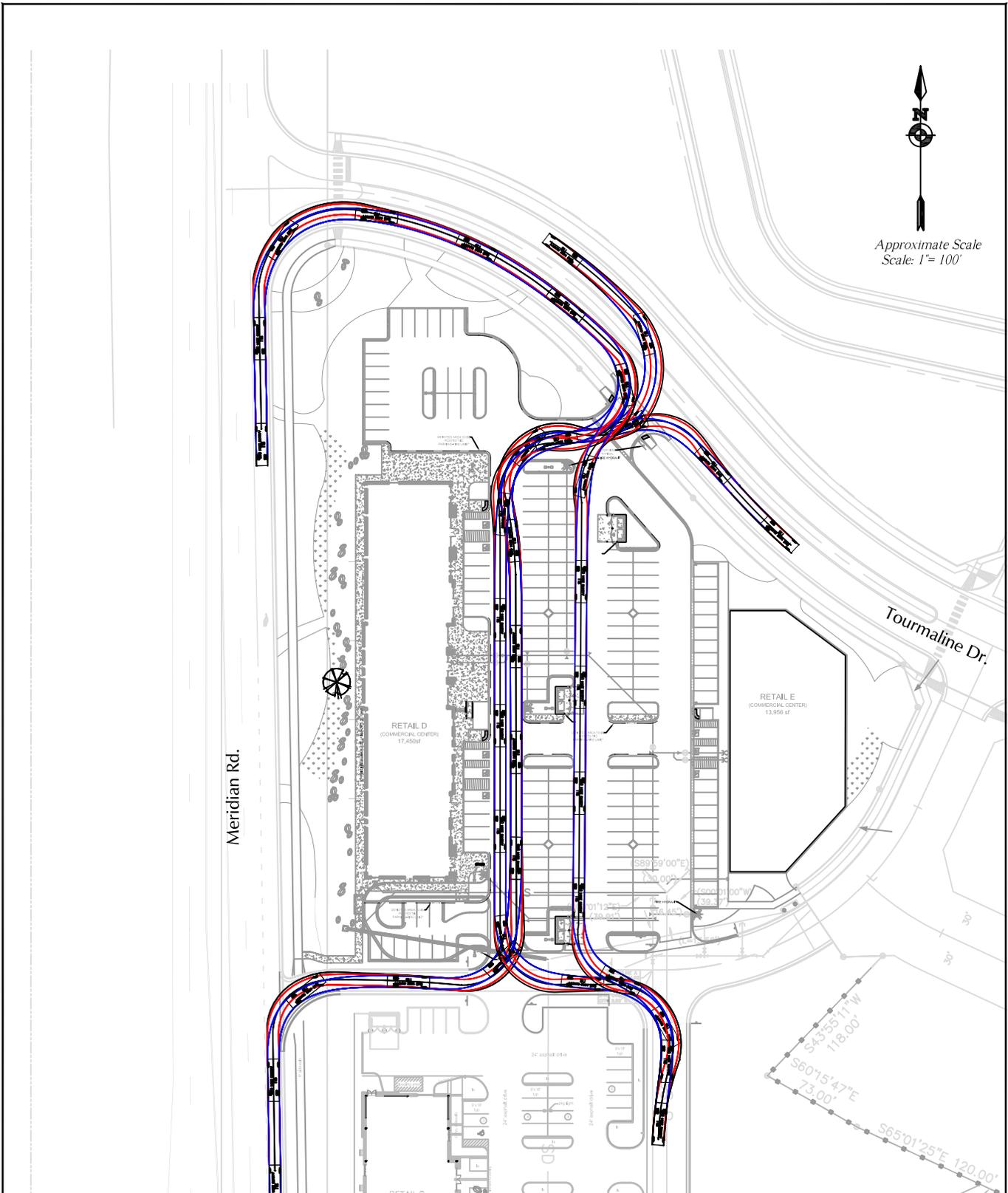



 Approximate Scale
 Scale: 1"= 100'

Figure 4

WB-50 AutoTurn Analysis

The Shops at Meridian Ranch Lot 4 (LSC #184510)

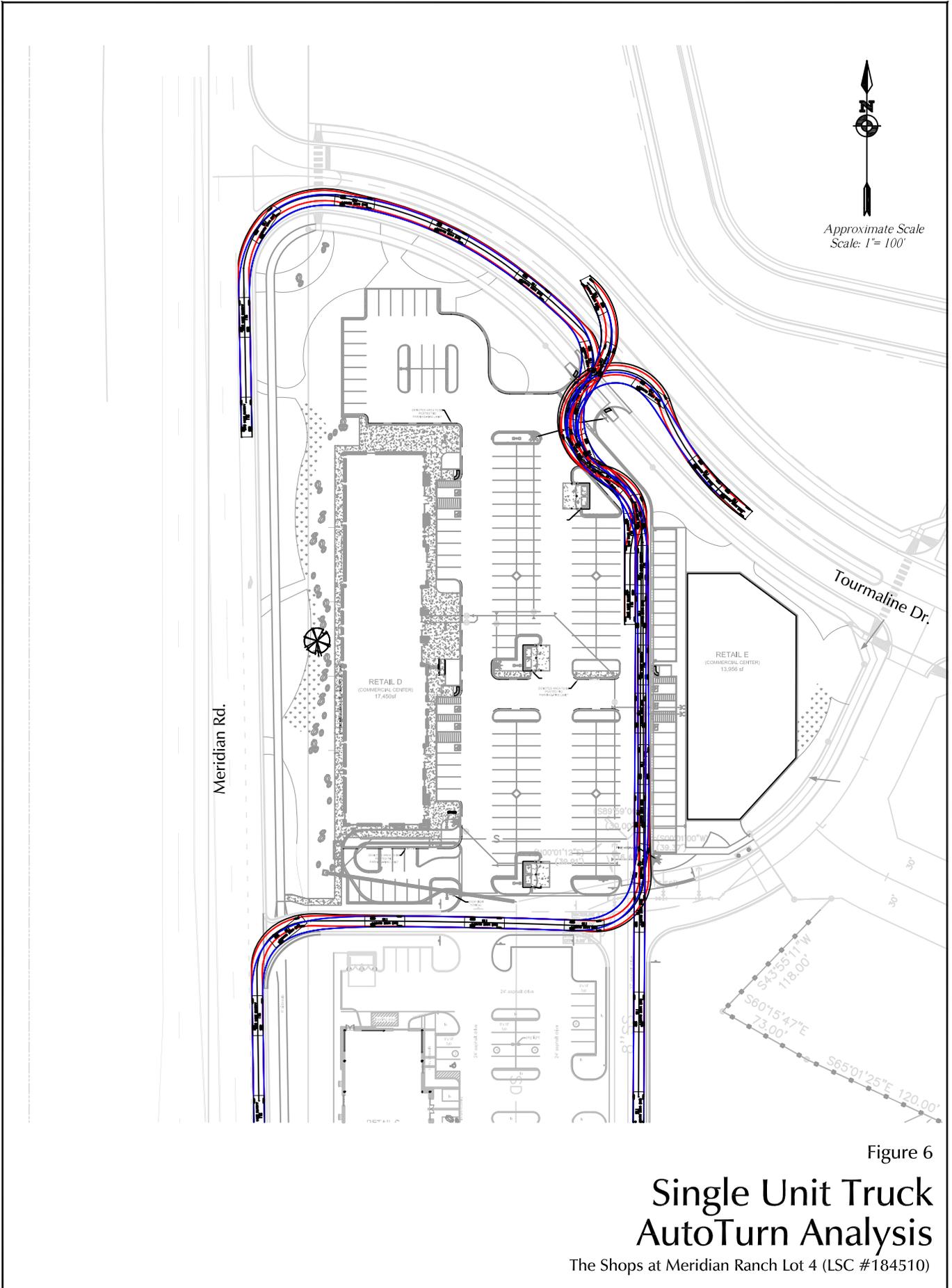


Approximate Scale
Scale: 1"= 100'

Figure 5

Single Unit Truck AutoTurn Analysis

The Shops at Meridian Ranch Lot 4 (LSC #184510)



Approximate Scale
Scale: 1" = 100'

Figure 6

Single Unit Truck AutoTurn Analysis

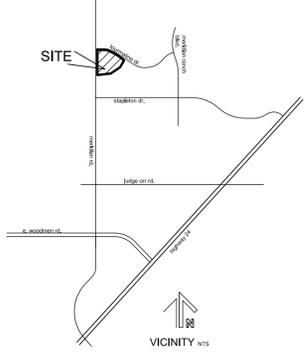
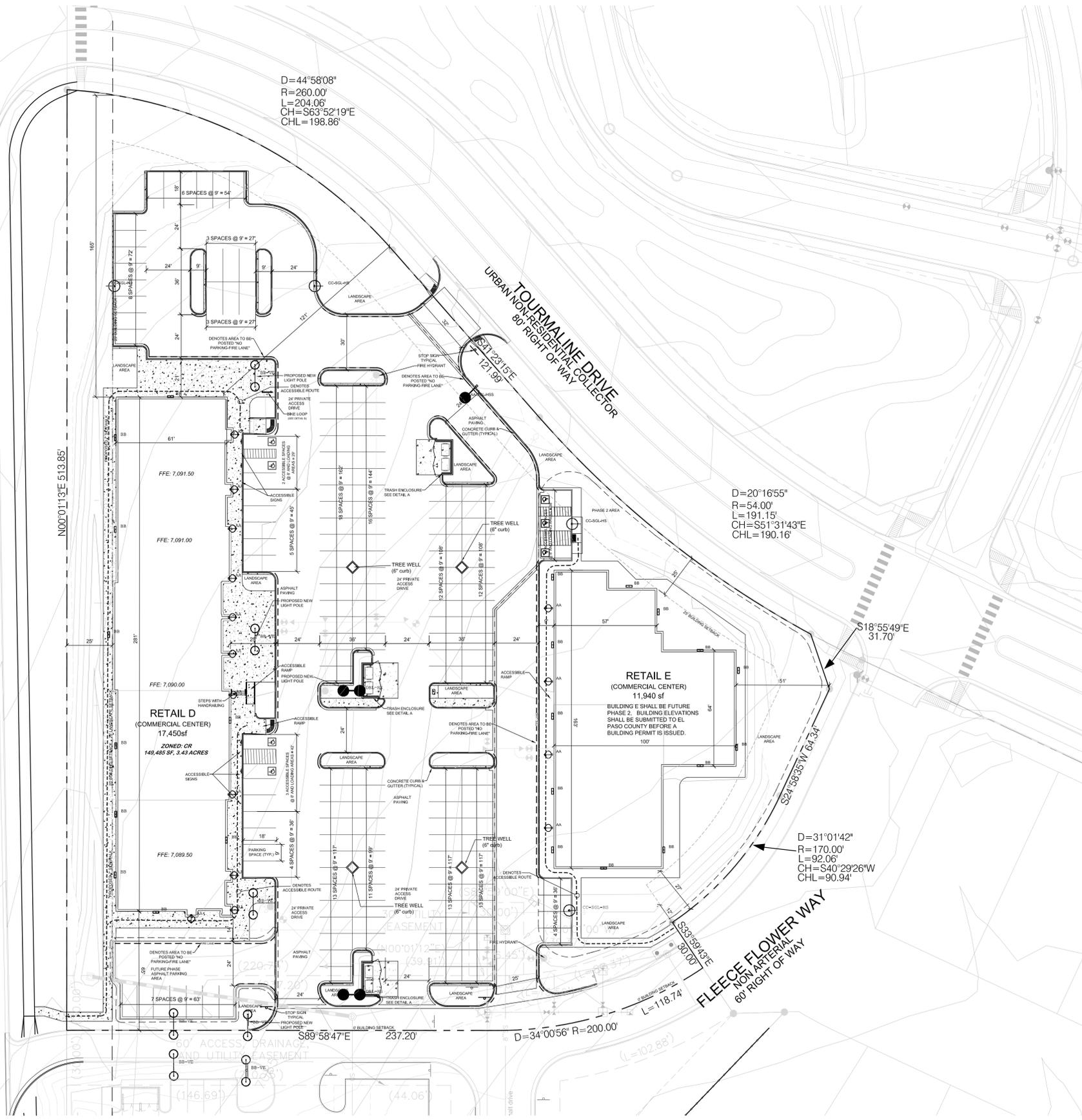
The Shops at Meridian Ranch Lot 4 (LSC #184510)

THE SHOP'S AT MERIDIAN RANCH

FILING NO. 1, LOT 4
 SITE DEVELOPMENT PLAN
 EL PASO COUNTY, COLORADO.
 FALCON, COLORADO



MERIDIAN ROAD
 MAJOR ARTERIAL
 135' RIGHT OF WAY



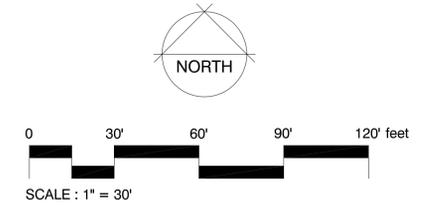
LEGAL:
 THE SHOPS AT MERIDIAN RANCH LOT 4 FILING NO. 1

SITE DATA

tax schedule no.:	4230319054
area	3.43ac
ex zone	n/a
proposed zone	CR
ex use	vacant
proposed use	commercial center
master plan development schedule	Falcon/Peyton Small Area Plan SPRING 2019

LOT INFO

proposed use	3.43ac commercial center
bldg area	29,390sf
max. bldg height	45'
prop. bldg height	44'
bldg setbacks	
front	25'
side	25'
rear	25'
%lot coverage	
bldgs	20% (29,390sf)
impervious	43% (64,383sf)
landscaping	37% (55,712sf)
use	retail D commercial center retail E commercial center
bldg area	17,450sf 11,940sf
ratio	1/250sf 1/250sf
required (incl h/c)	70 (incl 3h/c) 47 (incl 3h/c)
provided	99 (incl 3h/c) 47 (incl 3h/c)



OWNER INFO

company name	SHOPS AT MERIDIAN RANCH LLC
address	P.O. BOX 80036
city/state	SAN DIEGO CA 91238
phone no	

Structural:
 Electrical:
 Mechanical:
 Plumbing:

Shop's @ Meridian Ranch
 Site Development Plan
 Meridian Road
 Falcon, CO

Job No. 18-115
 Directory Planning
 File Site development plan 10-1-18
 Drawn By DIB
 Date 6/22/2018
 Revised 10/4/2018

DRAWING NO.
1
 SITE DEVELOPMENT PLAN

Markup Summary

dsdgrimm (3)

Explain in the narrative why you are using a weekday trip generation rates greater than the average rate in the ITE 10th edition book.

Use	Excavation	Peak	Weekday	Weekend	Peak
LSP	Code		Rate	Rate	Rate
Proposed Project Land Use					
01	001	Shopping Center	17,000 ADP	62.74	1.41
01	001	Shopping Center	10,000 ADP	62.74	1.41
Existing Land Use					
0	001	Shopping Center	20,000 ADP	62.74	1.41
Future Land Use					
1	001	Shopping Center	15,000 ADP	62.74	1.41

Subject: Engineer
Page Label: 6
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Author: dsdgrimm
Date: 11/7/2018 2:53:14 PM
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Explain in the narrative why you are using a weekday trip generation rates greater than the average rate in the ITE 10th edition book.

The sight distance must be based off of posted speed limit

istance

Subject: Engineer
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Author: dsdgrimm
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The sight distance must be based off of posted speed limit

...the sight distance analysis is based on a speed limit of 15 mph as vehicles approaching the access from the right at a slower speed than they maneuver through the right-in/right-out movement. Tourmaline Drive/Meridian Road intersection. As the ECA, the sight distances for travel speeds lower than 25 mph, the requirements were calculated using the American Association of State Highway and Transportation Engineers (AASHTO) standard. These standards are generally consistent with the standards and north of these lines would need to have low-level landscaping elements (such as monument signs and parking areas) that would restrict the sight distance to be low—about 10 inches or lower in height to the easement lines of sight shown.

This sight distance analysis should be based on the speed limit of 25 mph.

...volumes expected to be generated by the site have been made using the trip generation rates found in Trip Generation, 10th Edition, 2017 by the Institution of Transportation Engineers (ITE). Table 1 shows the results of the trip generation

Subject: Engineer
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Author: dsdgrimm
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This sight distance analysis should be based on the speed limit of 25 mph.