



LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: <http://www.lsctrans.com>

Flying Horse North Preliminary Plan
Updated Traffic Impact Analysis
PCD File No. SP-17-012
(LSC #184780)
April 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.

Date



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April 3, 2018

Mr. Drew Balsick
PRI #2, LLC
6385 Corporate Drive
Colorado Springs, CO 80919

Elaborate on the roadway narrative and conclusions/recommendation with respect to the MTCP Roadway Improvement Project and Corridor Preservation.
Example: The developer is required to dedicate additional ROW and identify ROW Preservation along Black Forest Rd.

RE: Flying Horse North Preliminary Plan
El Paso County, Colorado
Updated Traffic Impact Analysis
LSC #174870

Dear Drew:

LSC Transportation Consultants, Inc. has prepared this updated report for the proposed Flying Horse North Preliminary Plan. The Flying Horse North development site is located generally south of Hodgen Road and west of Black Forest Road in El Paso County, Colorado. LSC prepared a traffic impact study (TIS) for the entire Flying Horse North PUD in 2016. The master lot and street plan for Flying Horse North has not significantly changed since completion of the report, however the proposed phasing plan has changed with the currently proposed preliminary plan. This report has been prepared to accompany the preliminary plan submittal and includes a site-specific traffic report for Phase 1 and an addendum/update to the master TIS for Flying Horse North PUD (dated July 21, 2016).

AREA ROADWAYS

The area roadways in the site's vicinity are described below.

- **Hodgen Road** is a two-lane paved Rural Minor Arterial road that extends east from the intersection of Roller Coaster Road/Baptist Road to Eastonville Road. The speed limit on Hodgen Road is generally 55 miles per hour (mph) east of SH 83.
- **State Highway (SH) 83** extends from Colorado Springs north to Parker and areas of southeast Denver. In the vicinity of the site, SH 83 is classified as a Regional Highway (R-A). At this location, SH 83 is a two-lane rural highway with two- to four-foot shoulders and a speed limit of 55 miles per hour (mph). The intersection with Hodgen Road is signalized.
- **Shoup Road** is a two-lane, paved Rural Minor Arterial road that extends east from US Highway (US) 83 to just east of Vollmer Road. The posted speed limit on Shoup Road is 45 mph.

- **Black Forest Road** is a two-lane, paved Rural Minor Arterial road that extends north from Woodmen Road to County Line Road. Black Forest Road is offset about one-quarter mile to the east at Hodgen Road. In the vicinity of the site the posted speed limit on Black Forest Road is 45 mph.
- **Holmes Road** is a rural paved two-lane road that extends north from Shoup Road to just north of Vessey Road. Holmes Road is planned to be extended north into the site as part of this development. The posted speed limit on Homes Road is 30 mph.
- **Vessey Road** is a rural paved two-lane road that extends east from the Cathedral Pines development to Black Forest Road.

LAND USE AND ACCESS

At buildout, Flying Horse North is planned to contain 283 single-family homes and an 18-hole golf course. These land uses were assumed in the 2016 Flying Horse North master TIS and have not changed; however, the phasing plan has changed. The currently proposed phasing plan is attached.

The Flying Horse North master TIS analyzed three scenarios. The first scenario (Existing Plus Phase 1 and 2 Site-Generated Traffic) assumed buildout of 43 single-family homes only (no golf course). The first scenario also assumed segments of Stagecoach Road would be built east from SH 83 and west from Black Forest Road with a gravel pilot road/ungated emergency road between these two sections. The currently proposed first phase includes 80 single-family homes and also includes the golf course. Stagecoach Road is now planned to be fully constructed and paved from SH 83 to Black Forest Road with Phase 1.

The second scenario ("Short Term") analyzed in the Flying Horse North master TIS assumed buildout of 136 single-family homes plus the golf course. This scenario assumed buildout of Stagecoach Road from SH 83 to Black Forest Road but assumed Holmes Road had not been extended north through the site to Stagecoach Road. The second scenario also assumed no access connections with these phases to Holmes Road or Hodgen Road. The currently proposed Phases 1 and 2 includes 135 lots for single-family homes (one fewer than the previous "short-term" scenario) plus the golf course. In addition to comparable land use assumptions, the access plan for the currently proposed Phases 1 and 2 is the same as what was assumed for the short-term scenario in the master TIS.

The third scenario ("2040 Total") assumed buildout of 136 lots for single-family homes plus the golf course. No changes to the land use and to the long-term/buildout access and roadway network as shown in the 2016 Flying Horse North master TIA are proposed.

SIGHT DISTANCE

LSC has completed an analysis of the sight distance at the intersection of Black Forest Road/Terra Ridge Circle (North)/Future Stagecoach Road. The sight distance to the south is about 660 feet. The sight distance to the north is over 1,000 feet. Based on the criteria found in the El Paso County *Engineering Criteria Manual (ECM)* the required intersection sight distance is 555 feet.

DEVIATION REQUESTS

Two deviation requests for the Flying Horse North Master Plan were approved for consideration by the BOCC on October 21, 2016. These deviations included a modification to allow a proposed full-movement access to Black Forest Road 725 feet south of Black Forest Road/Terra Ridge Circle (South) and to allow for the use of Rural Minor Collector standards for design elements of Stagecoach Road (a Rural Major Collector). The approved deviations are attached.

TRIP GENERATION

The site-generated vehicle-trips were estimated using the nationally published trip generation rates from *Trip Generation, 9th Edition, 2012* by the Institute of Transportation Engineers (ITE). Table 1 shows the site's average weekday, morning peak-hour, and afternoon peak-hour trip generation estimates for the Flying Horse North development by phase.

At buildout of Phase 1, Flying Horse North could be expected to generate about 1,405 new vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which typically occurs for one hour between 6:30 and 8:30 a.m., about 44 vehicles would enter and 53 vehicles would exit the site. During the afternoon peak hour, which typically occurs for one hour between 4:30 and 6:30 p.m., about 77 vehicles would enter and 56 vehicles would exit the site.

Following buildout of Phase 2, Flying Horse North could be expected to generate about 1,929 new vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. This is about nine fewer trips than was assumed for Phases 1-6 in the Flying Horse North master TIS. During the morning peak hour about 55 vehicles would enter and 84 vehicles would exit the site. This is the same number of entering trips and one fewer exiting trip than was assumed for Phases 1-6 in the master TIA. During the afternoon peak hour about 112 vehicles would enter and 76 vehicles would exit the site. This is one fewer entering trips and the same number of exiting trips as was assumed for Phases 1-6 in the master TIA.

At buildout Flying Horse North could be expected to generate about 3,337 new vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about 82 vehicles would enter and 167 vehicles would exit the site. During the afternoon peak hour about 205 vehicles would enter and 131 vehicles would exit

the site. This matches the buildout trip generation estimate from the Flying Horse North master TIS.

DIRECTIONAL DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated trips on the area roadway network is an important factor in determining the site's traffic impacts.

When the distribution percentages shown in Figure 5 from the Master TIS are applied to the trip generation estimates shown in Table 1, the site-generated traffic volumes on the area roadways can be determined. The Phase 1 site-generated traffic volumes are shown in Figure 1 (attached). Figure 1 also shows average weekday traffic volumes on the internal and off-site roadways. The Phase 1 site-generated traffic volume estimates assume Stagecoach Road has been completed between SH 83 and Black Forest Road but assumes Holmes Road has not been extended north through the site to Stagecoach Road. These volumes also assume no direct access to Hodgen Road or other access to Black Forest Road (other than the new Stagecoach Road).

The Phase 1-6 analysis contained in the master TIS was based on one more single-family home than the currently proposed Phases 1 and 2. The access plan for this intermediate scenario is also consistent with the currently proposed plan for Phase 2. The overall land use and access plan at buildout has also not changed since completion of the master TIS. As no changes are planned for these scenarios, please refer to Figures 8 and 9 from the master TIS for the Phase 2 and buildout site-generated traffic volumes, respectively.

PHASE 1 TOTAL TRAFFIC

Figure 2 (attached) shows the short-term total traffic volumes at the intersections in the vicinity of the site assuming buildout of Phase 1 only. These volumes are the sum of the short-term background traffic volumes from Figure 4 of the Flying Horse North master TIS plus the Phase 1 site-generated traffic volumes from Figure 1.

SHORT-TERM AND 2040 TOTAL TRAFFIC

Please refer to Figures 11 and 12 from the master TIS for the short-term total traffic volumes following buildout of Phase 2 and 2040 total traffic volumes, respectively.

PROJECTED LEVEL OF SERVICE

The intersections in the vicinity of the site have been analyzed to determine the projected level of service following buildout of Phase 1 based on the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board.

The intersections of Hogden/Black Forest and Stagecoach/Black Forest Road are projected to operate at level of service C or better during the peak hours for all movements as Stop-sign-controlled intersections based on the short-term total traffic volumes assuming buildout of Phase 1 only.

A southbound left-turn acceleration lane will be required on SH 83 at Stagecoach Road. A simulation was performed using Synchro/SimTraffic to determine the impact of this lane. The simulation was run five times and the results averaged. The average delay for each movement was then compared to the delay shown in Table 1 from the Flying Horse North master TIS to determine the projected level of service. The short-term analysis indicates the westbound approach left-turn movement at this intersection is projected to operate at LOS C during the afternoon peak hour.

Please refer to the Flying Horse North master TIS for level of service and traffic signal warrant analysis based on the projected short-term total (following Phase 2) and 2040 traffic volumes.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Phase 1 of Flying Horse North could be expected to generate about 1,405 new vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about 44 vehicles would enter and 53 vehicles would exit the site. During the afternoon peak hour about 77 vehicles would enter and 56 vehicles would exit the site.
- The projected trip generation following buildout of Phase 2 of the Flying Horse North development is slightly lower than the projected trip generation for Phases 1-6 assumed in the Flying Horse North master TIS.
- The projected trip generation at buildout of Flying Horse North has not changed from what was assumed in the Flying Horse North master TIS.

Level of Service

- The intersections of Hogden/Black Forest and Stagecoach/Black Forest Road are projected to operate at level of service C or better during the peak hours for all movements as Stop-sign-controlled intersections based on the projected short-term total following buildout of Phase 1 only.
- All movements at the Stop-sign-controlled intersection of SH 83/Stagecoach are projected to operate at level of service C or better during the peak hours based on the short-term total traffic following buildout of Phase 1 only.

- Please refer to the Flying Horse North master TIS analysis based on the projected short-term traffic volumes.

Auxiliary Turn Lanes

- Table 2 shows an updated summary of the currently proposed phasing plan.
- Based on the projected short-term traffic volumes and the criteria contained in the *State of Colorado Highway Access Code*, a southbound left-turn deceleration lane would be required on SH 83 approaching Stagecoach Road. This lane should be 378 feet long plus a 222-foot-long taper.
- Based on the projected short-term total site-generated traffic volumes following buildout of Phase 1 only and the criteria contained in the *State of Colorado Highway Access Code*, a southbound left-turn lane would be required on SH 83 approaching Stagecoach Road. This lane should be 418 feet long plus a 222-foot-long taper.
- Based on the short-term total traffic volumes following buildout of Phase 1 only and the criteria contained in the *State of Colorado Highway Access Code*, a northbound right-turn acceleration lane would not be required on SH 83 at Stagecoach Road for Filing 1. However, the applicant may choose to construct this lane along with the other auxiliary turn lanes required with Filing No. 1. This lane, if constructed with this filing, should be 738 feet long plus a 222-foot-long taper.
- Based on comments received from the Colorado Department of Transportation, a southbound left-turn acceleration lane will be required on SH 83 from Stagecoach Road. This lane should be 738 feet long plus a 222-foot taper (adjusted for grades as necessary).
- Based on the projected short-term total traffic volumes following buildout of Phase 1 only and on the criteria contained in the *El Paso County Engineering Criteria Manual*, a northbound left-turn lane would **not** be required on Black Forest Road approaching Stagecoach Road. This lane will be required with what is currently proposed as Phase 3. The recommended lane and taper lengths shown in the Flying Horse North master TIS are still applicable.
- All of the recommendations for auxiliary turn lanes at buildout shown in the Flying Horse North master TIS are still applicable.

CDOT Access Permitting

CDOT issued access permit No. 216020 (2/22/2017) for access to Highway 83 at the Stagecoach Road intersection for up to the first 40 single-family residential dwelling units of Flying Horse

State whether or not any improvements affected by the project are reimbursable under the current MTCP.

Unresolved. Specify if the improvements are or are not reimbursable under the MTCP Road Impact Fee Program.

Example: Black Forest Rd is in the planned improvement project (Project ID U11); the TIS needs to clarify if the NBLT at Black Forest and Stagecoach is or isn't reimbursable (FYI: Staff does not believe it is). You can contact Victoria Chavez (520-6884) to verify whether or not specific improvements listed in table 2 are reimbursable.

North. The currently proposed Phase 1 will include 80 single-family residential dwelling units plus the golf course. Therefore, a new access permit will be needed once more than 40 dwelling units are constructed and occupied or if the traffic volumes indicated in the permit are exceeded.

Typically, El Paso County will require an access permit and issuance of a CDOT Notice-to-Proceed (NTP) prior to Plat recording. However, as an access permit and NTP (a no-new-construction permit) are in-place for a portion of the currently proposed 80 Phase 1 lots, the applicant is requesting that the new change-in-use access permit (for 80 lots plus the golf course) NTP, highway improvements design approval, construction of the auxiliary lanes, and CDOT acceptance of the improvements be required prior to the certificate of occupancy for dwelling units over 40. This will allow limited development within Phase 1 to begin while the turn lanes are designed and plans are reviewed and approved by CDOT.

Phase 1 Roadway Classifications

- Figure 3 shows the recommended roadway classifications within the Flying Horse Master Plan. Stagecoach Road will be classified as a Rural Major Collector roadway between SH 83 and the first roundabout to the east. East of this first roundabout, it will be classified as a Rural Minor Collector per the PUD plan approval.

Countywide Road Impact Fee Program


- Flying Horse North including the current Phase 1 will be required to participate in the Countywide Road Impact Fee program. The specific PID option (or opt-out option) as well as the specific calculated fee amount will be provided prior to recording of the Filing 1 (Phase 1) plat. The fee per residential dwelling unit will be payable at the time of the building permit. The golf course will also be subject to the fee.

* * * * *

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By 
Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

JCH:KDF:bjwb

Enclosures: Tables 1 and 2
Figures 1-2
Phasing Plan
Approved Deviations

Table 1
Trip Generation Estimate
Flying Horse North Preliminary Plan

Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾					Total Trips Generated				
				Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
					In	Out	In	Out		In	Out	In	Out
1	210	Single-Family Detached Housing	80 DU ⁽²⁾	9.52	0.19	0.56	0.63	0.37	762	15	45	50	30
	430	Golf Course	18 holes	35.74	1.63	0.43	1.49	1.43	643	29	8	27	26
		Total Phase 1							1,405	44	53	77	56
2	210	Single-Family Detached Housing	55 DU	9.52	0.19	0.56	0.63	0.37	524	10	31	35	20
		Total Phases 1 and 2	135 DU						1,929	55	84	112	76
3	210	Single-Family Detached Housing	35 DU	9.52	0.19	0.56	0.63	0.37	333	7	20	22	13
4	210	Single-Family Detached Housing	23 DU	9.52	0.19	0.56	0.63	0.37	219	4	13	14	9
5	210	Single-Family Detached Housing	28 DU	9.52	0.19	0.56	0.63	0.37	267	5	16	18	10
6	210	Single-Family Detached Housing	20 DU	9.52	0.19	0.56	0.63	0.37	190	4	11	13	7
7	210	Single-Family Detached Housing	37 DU	9.52	0.19	0.56	0.63	0.37	352	7	21	23	14
8	210	Single-Family Detached Housing	5 DU	9.52	0.19	0.56	0.63	0.37	48	1	3	3	2
		Total Phases 5-8	148 DU						1,409	28	83	93	55
		Buildout	283 DU						3,337	82	167	205	131

Notes:

(1) Source: "Trip Generation, 9th Edition, 2012" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

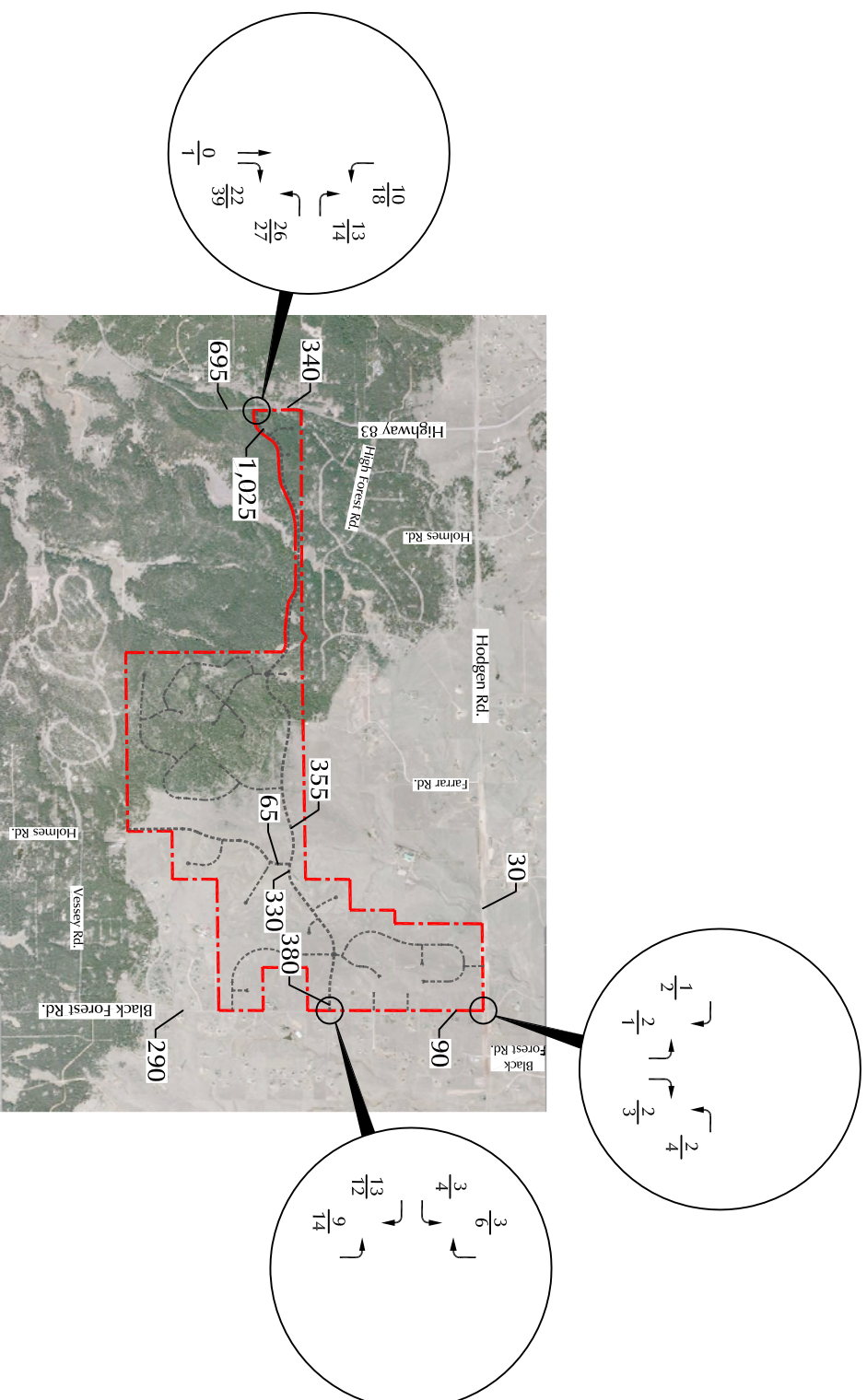
Stagecoach Rd is not listed in the fee program and is therefore not eligible as a creditable improvement.

Table 2
Recommended Improvements
Flying Horse North Preliminary Plan

Intersection/Road	Improvement	Lane Length (ft)	Taper Length (ft)	Phase When Required
Stagecoach Road	Construct Stagecoach Road from SH 83 to Black Forest Road (It is our understanding that at least a portion will be reimbursable under the current MTCP)	N/A	N/A	1
SH 83/Stagecoach	Northbound Right-Turn Deceleration Lane	378	222	1
	Northbound Right-Turn Acceleration Lane	738	222	2
	Southbound Left-Turn Lane	418	222	1
	Southbound Left-Turn Acceleration Lane	738	222	1
Hogden/Full-Movement Site Access	No Auxiliary Lanes Required			
Hodgen/Black Forest (West)	No Additional Auxiliary Lanes Required			
Black Forest/Stagecoach	Northbound Left-Turn Lane	340	240	3
Black Forest/Site Access Points	No Auxiliary Lanes Required			
Holmes Road	Pave	N/A	N/A	5
Source: LSC Transportation Consultants, Inc.				



Approximate Scale
Scale: 1" = 1 Mile



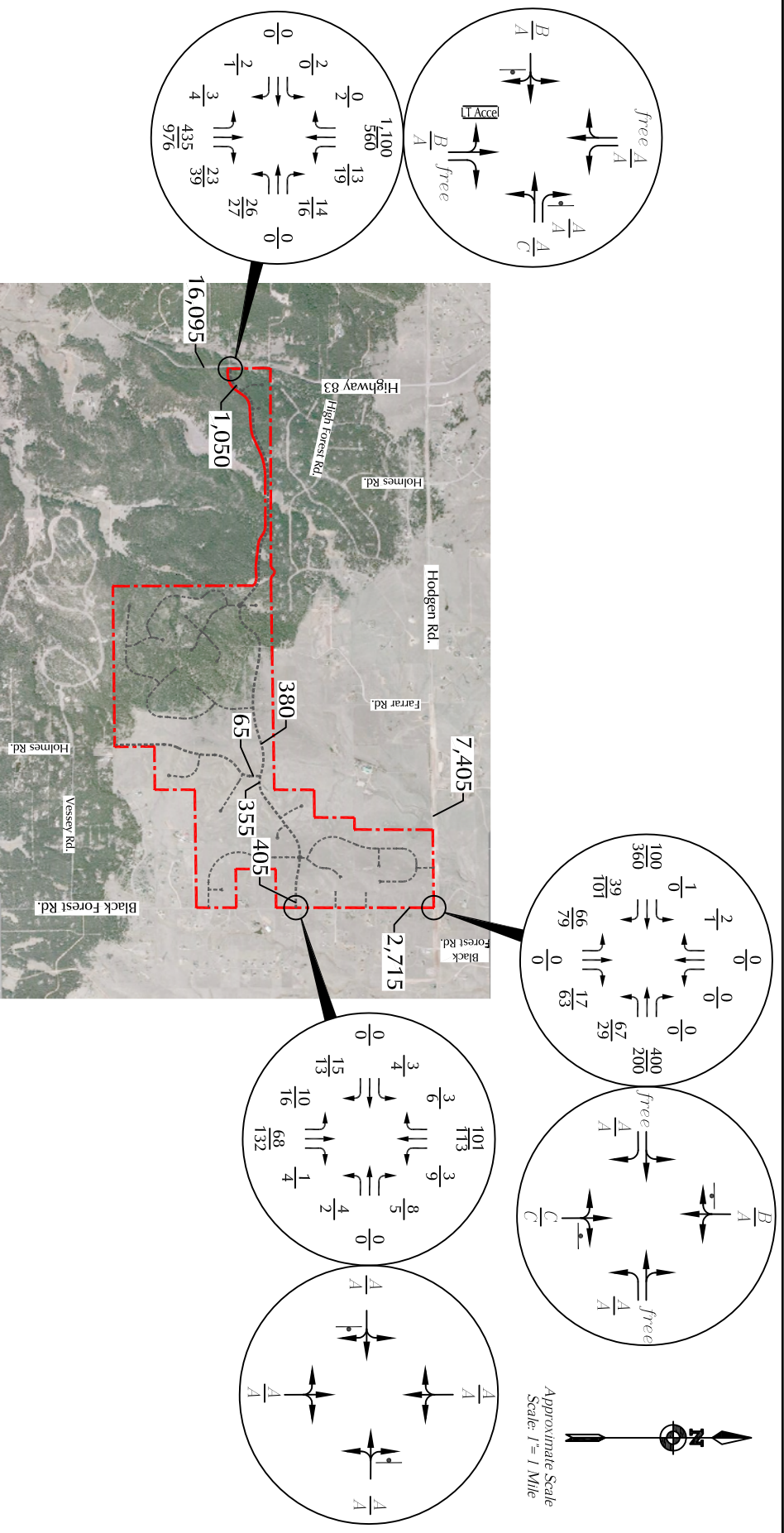
LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
XXX = Average Weekday Traffic (vehicles per day)

Figure 1

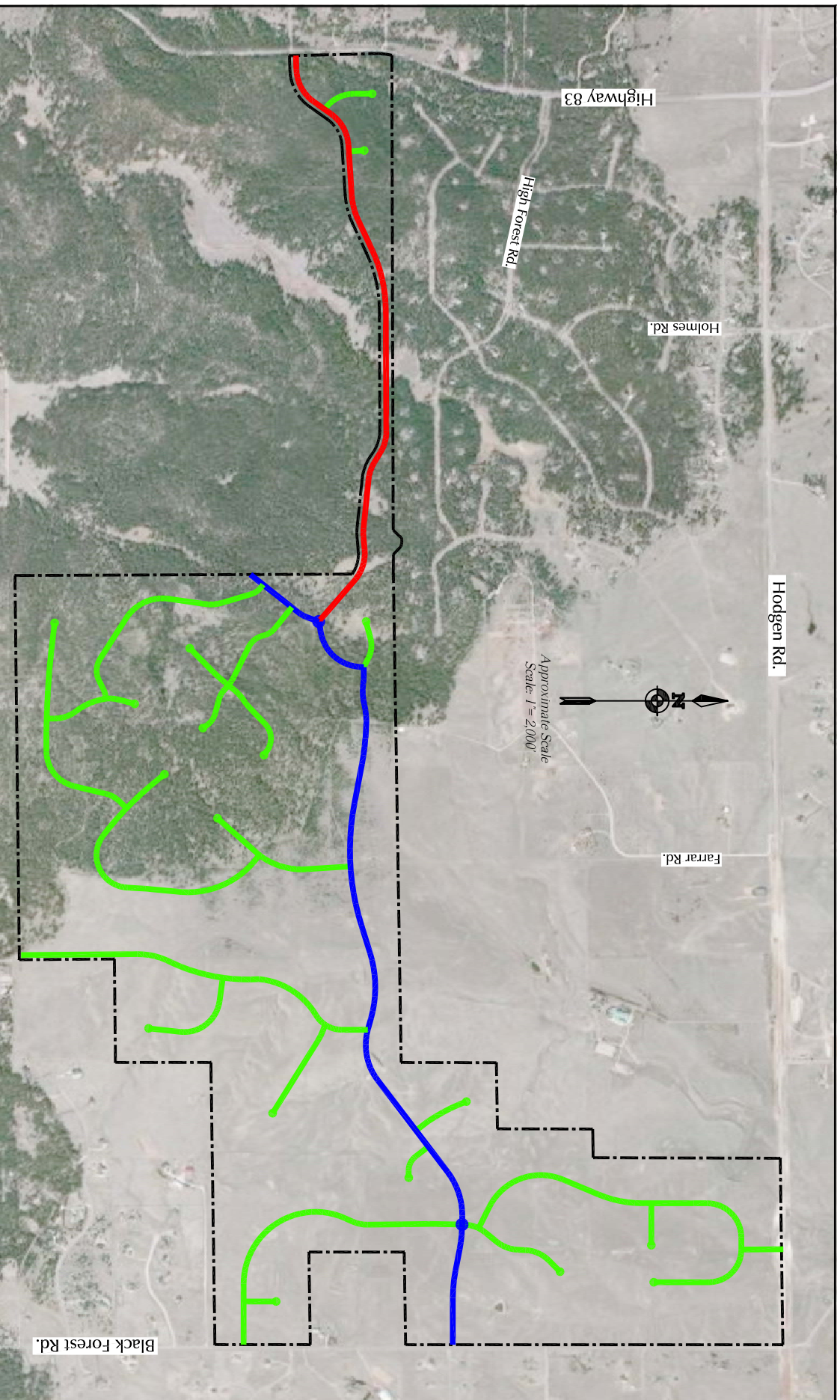
Assignment of Phase 1 Site-Generated Traffic

Flying Horse North Preliminary Plan (LSC #174870)



Short-Term Total Traffic Following Phase 1,
Lane Geometry, Traffic Control and Level of Service

Figure 2



LEGEND:

- = Rural Major Collector
- = Rural Minor Collector
- = Rural Local



Figure 3

Recommended Classifications

Flying Horse North Filing No. 1 (LSC #164050)

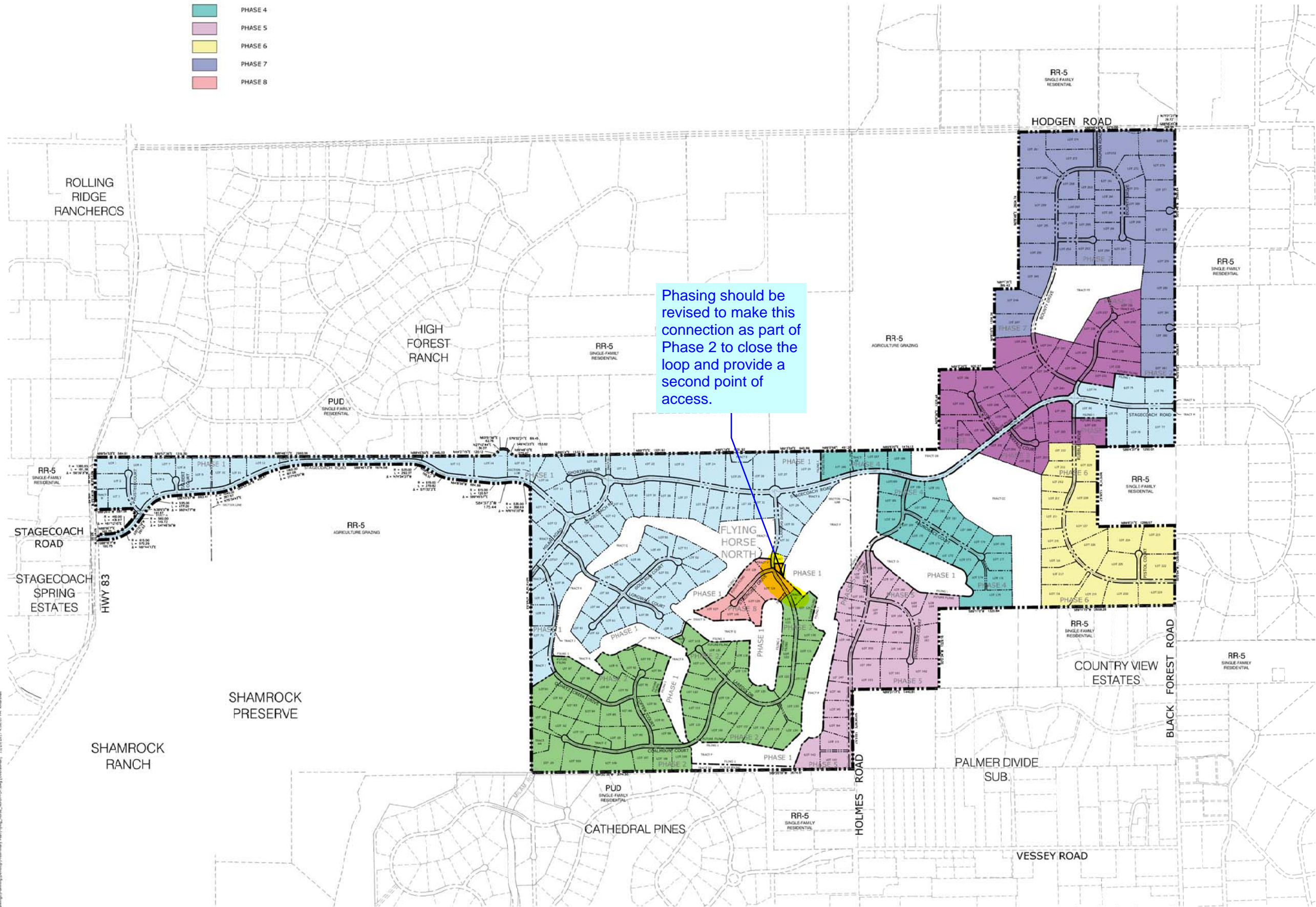
PHASING LEGEND

PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8
[Light Blue Box]	[Green Box]	[Purple Box]	[Teal Box]	[Pink Box]	[Yellow Box]	[Blue Box]	[Red Box]

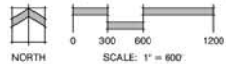
Land Planning
Landscape
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NES

N.E.S. Inc.
619 N. Cascade Avenue, Suite 200
Colorado Springs, CO 80903
Tel. 719.471.0073
Fax 719.471.0267
www.nescolorado.com
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PHASING PLAN



FLYING HORSE NORTH

DATE: 11-29-2017
PROJECT RGR: J. MAYNARD
PREPARED BY: K. HANSEN

DATE: BY: DESCRIPTION:

PHASING PLAN

1 of 1



Development Services Department
2880 International Circle
Colorado Springs, Colorado 80910

Phone: 719.520.6300
Fax: 719.520.6695
Website www.elpasoco.com

DEVIATION REVIEW AND DECISION FORM

Procedure # R-FM-051-07

Issue Date: 12/31/07

Revision Issued: 00/00/00

DSD FILE NO.:

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General Property Information:

Address of Subject Property (Street Number/Name): n/a

Tax Schedule ID(s) #: 6100000527, 6100000526

Legal Description of Property:

TR IN SECS 34 & 35-11-66 DESC AS FOLS: BEG AT NE COR SD SEC 35, TH S 00<14'34" E 523.85 FT, TH ALG ARC OF CUR TO THE L HAVING A RAD OF 535.0 FT A C/A OF 38<24'48" WHICH CHORD BEARS S 33<01'51" W 358.69 FT, TH S 84<37'03" W 175.44, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 615.0 FT A C/A OF 11<13'59" A DIST OF 120.57 FT, TH N 84<08'58" W 684.98 FT, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 615.0 FT A C/A OF 25<13'51" A DIST OF 270.82 FT, N 58<55'07" W 166.51 FT, TH ALG ARC OF CUR TO THE L HAVING A RAD OF 535.0 FT A C/A OF 31<18'40" A DIST OF 292.37 FT, S 89<45'13" W 1674.58 FT, TH ALG ARC OF CUR TO THE L HAVING A RAD OF 1960.0 FT A C/A OF 24<52'43" A DIST OF 851.06 FT, TH S 64<53'30" W 459.47 FT, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 1040.0 FT A C/A OF 21<22'27" A DIST OF 387.97 FT, TH S 86<15'57" W 645.0 FT M/L, TH RUN NLY 655.0 FT M/L TO A PT ON THE NLY LN OF SEC 34, TH N 89<46'13" E 2660.56 FT, N 89<45'50" E 2048.33 FT, N 44<21'15" E 120.12 FT, N 27<42'44" E 30.37 FT, N 83<51'56" E 62.76 FT, S 79<32'21" E 69.45 FT, S 46<40'23" E 153.82 FT N 89<48'10" E 270.47 FT TO POB

TR IN NE4 SEC 34-11-66 DESC AS FOLS: BEG AT NE4 SD SEC 34, TH N 89<57'36" W 635.0 FT M/L FOR POB, TH RUN SLY 6,550 FT M/L, S 86<15'57" W 47.0 FT M/L, TH ALG ARC OF CUR TO THE L HAVING A RAD OF 535.0 FT A C/A OF 51<05'38" A DIST OF 477.09 FT, TH S 35<10'18" W 291.93 FT, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 615.0 FT A C/A OF 53<07'49" A DIST OF 570.29 FT, TH S 88<18'07" W 160.75 FT TO A PT ON THE ELY R/W LN OF HWY 83, N 01<41'53" W 90.0 FT TO SWLY COR LOT 1 WESTCOTT FIRE STATION NO 3, TH N 88<18'07" E 165.75 FT, TH ALG ARC OF CUR TO THE L HAVING A RAD OF 460.0 FT A C/A OF 54<10'43" A DIST OF 434.97 FT, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 560.0 FT A C/A OF 15<19'05" A DIST OF 149.72 FT, TH N 38<00'00" W 141.67 FT, S 88<20'00" W 587.56 FT TO A PT ON ELY R/W LN SD HWY 83, N 01<41'53" W 446.49 FT, N 00<02'53" W 245.49 FT, TH ALG ARC OF CUR TO THE R HAVING A RAD OF 1380.65 FT WHICH CHORD BEARS S 87<06'46" E 181.38 FT, TH N 89<54'54" E 584.61 FT, S 89<57'36" E 720.0 FT M/L TO POB

**Approved for consideration
by the BOCC**

10/21/2016 9:19:02 AM

El Paso County Procedures Manual

Procedure # R-FM-051-07

Issue Date: 12/31/07

Revision Issued: 00/00/00

Subdivision or Project Name: Flying Horse at Shamrock Ranch

Section of ECM from Which Deviation is Sought: 2.3.2 Design Standards by Functional Classification - Table 2-5 for a Rural Major Collector Roadway: 1) Minimum Centerline Curve Radius; 2) "Access Permitted;" 3) Intersection Spacing; 2.3.4.A Vertical Curves.

Specific Criteria from Which a Deviation is Sought: The applicant requests use of Rural Minor Collector standards for the design elements of a Major Collector listed above from Table 2-5: Minimum Centerline Curve Radius, "Access Permitted," and Intersection Spacing; the applicant requests use of the Rural Minor Collector standard design speed for Vertical Curves per section 2.3.4.A.

Proposed Nature and Extent of Deviation: Given the challenging topography, the applicant requests modification to the above-listed design elements to be designed to Rural Minor Collector standards. Regarding the request for access, the length of the lot frontage through the two sections with direct lot access would be 315 feet, 305 feet, and 532 feet for the westernmost three lots proposed with direct frontage, and 921 feet, 550 feet, and 415 feet on the three lots just west of the proposed roundabout.

Regarding the driveway access for the six lots planned to front this roadway, the driveways entering Stagecoach will be limited and consolidated as much as is reasonable but will be determined by natural grade, drainage, and access sight distance. The locations will be determined with the plot plans and the building pads. There are a limited number of lot driveways shown for Stagecoach, which is comparable to other roads and areas within the county. The capability for vehicles to turn around on the lots will be provided such that backing maneuvers out of the driveways would not be necessary. This would be a requirement written into the HOA covenants including the regulation of "no backing onto the public roadway."

Per the County Engineer, the modification will be to allow direct lot access only for those lots where access to Stagecoach Road is the only option. Circular/horseshoe driveways will not be allowed.

Applicant Information:

Applicant: PRI #2, LLC

Email Address: DrewB@classichomes.com

Applicant is: ☒ Owner ☐ Consultant ☐ Contractor

Mailing Address: 6385 Corporate Drive, Colorado Springs

State: CO

Postal Code: 80919

Telephone Number: 785-3237

Fax Number: _____

Engineer Information:

Engineer: Jeffery C. Hodsdon, P.E., P.T.O.E.

Email Address: jeff@lsctrans.com

Company Name: LSC Transportation Consultants, Inc.

Mailing Address: 545 E Pikes Peak Ave, Suite 210, Colorado Springs

State: CO

Postal Code: 80903

Registration Number: 31684

State of Registration: Colorado

Telephone Number: (719) 633-2868

Fax Number: (719) 633-5430

Explanation of Request (Attached diagrams, figures and other documentation to clarify request):

Section of ECM from Which Deviation is Sought: 2.3.2 Design Standards by Functional Classification - Table 2-5 for a Rural Major Collector Roadway: 1) Minimum Centerline Curve Radius; 2) "Access Permitted;" 3) Intersection Spacing; 2.3.4.A Vertical Curves.

Specific Criteria from Which a Deviation is Sought: The applicant requests use of Rural Minor Collector standards for the design elements of a Major Collector listed above from Table 2-5: Minimum Centerline Curve Radius, "Access Permitted," and Intersection Spacing; the applicant requests use of the Rural Minor Collector standard design speed for Vertical Curves per section 2.3.4.A.

Proposed Nature and Extent of Deviation: Given the challenging topography, the applicant requests modification to the above-listed design elements to be designed to Rural Minor Collector Standards. Regarding the request for access, the length of the lot frontage through the two sections with direct lot access would be 315 feet, 305 feet, and

El Paso County Procedures Manual

Procedure # R-FM-051-07

Issue Date: 12/31/07

Revision Issued: 00/00/00

DSD File No. _____

532 feet for the westernmost three lots proposed with direct frontage, and 921 feet, 550 feet, and 415 feet on the three lots just west of the proposed roundabout.

Regarding the driveway access for the six lots planned to front this roadway, the driveways entering Stagecoach will be limited and consolidated as much as is reasonable but will be determined by natural grade, drainage, and access sight distance. The locations will be determined with the plot plans and the building pads. Each driveway would be required to obtain a driveway permit, provide the required sight distance, and other requirements of section 2.4.1. There are a limited number of lot driveways shown for Stagecoach, which is comparable to other roads and areas within the county. The capability for vehicles to turn around on the lots will be provided such that backing maneuvers out of the driveways would not be necessary. This would be a requirement written into the HOA covenants including the regulation of "no backing onto the public roadway."

Per the County Engineer, the modification will be to allow direct lot access only for those lots where access to Stagecoach Road is the only option. Circular/horseshoe driveways will not be allowed.

Reason for the Requested Deviation: The modification is requested due to the challenging topography and the narrow site boundary/dimensions through this section of the site.

Comparison of Proposed Deviation to ECM Standard: For the above-referenced design element, the difference is between the Rural Minor Collector standards and the Rural Major Collector standards.

Applicable Regional or National Standards used as Basis:

Application Consideration:

**CHECK IF APPLICATION
MEETS CRITERIA FOR
CONSIDERATION**

☐ The ECM standard is
inapplicable to a particular
situation.

JUSTIFICATION

☒ Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.

Given the challenging site topography, the request is to allow application of Rural Minor Collector standards for the following design elements from Table 2-5: Minimum Centerline Curve Radius, "Access Permitted," and Intersection Spacing; the applicant requests use of the Rural Minor Collector standard design speed for Vertical Curves per section 2.3.4.A.

- There would be a limited number of lots proposed to front this roadway and all would be on one side (the north side) of the roadway.
- The roadway would be single-loaded with no plans to develop lots along the south side of the roadway.
- The six lots planned to front this roadway directly would provide the capability for vehicles to turn around on the lots such that backing maneuvers out of the driveways would not be necessary. This would be a requirement written into the HOA covenants including the regulation of "no backing onto the public roadway."

- Regarding the driveway access for the six lots planned to front this roadway, the driveways entering Stagecoach will be limited and consolidated as much as is reasonable but will be determined by natural grade, drainage, and access sight distance. The locations will be determined with the plot plans and the building pads. Each driveway would be required to obtain a driveway permit, provide the required sight distance and other requirements of section 2.4.1. There are a limited number of lot driveways shown for Stagecoach, which is comparable to other roads and areas within the county.

- Per the County Engineer, the modification will be to allow direct lot access only for those lots where access to Stagecoach Road is the only option. Circular/horseshoe driveways will not be allowed.

☐ A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

If at least one of the criteria listed above is not met, this application for deviation cannot be considered.

Criteria for Approval:

PLEASE EXPLAIN HOW EACH OF THE FOLLOWING CRITERIA HAVE BEEN SATISFIED BY THIS REQUEST

The request for a deviation is not based exclusively on financial considerations. See next paragraph.

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The request to allow application of Rural Minor Collector standards for the specified design elements from Table 2-5 would be consistent with respect to that classification while the remainder of the roadway elements would remain as per the Rural Major Collector. Regarding the driveway access for the six lots planned to front this roadway, the driveways entering Stagecoach will be limited and consolidated as much as is reasonable but will be determined by natural grade, drainage, and access sight distance. The locations will be determined with the plot plans and the building pads. There are a limited number of lot driveways shown for Stagecoach, which is comparable to other roads and areas within the county.

- Per the County Engineer, the modification will be to allow direct lot access only for those lots where access to Stagecoach Road is the only option. Circular/horseshoe driveways will not be allowed.

The deviation will not adversely affect safety or operations.

The modified design elements would be consistent with the Rural Minor Collector standards, so if the county decides to post either curve warning sign or posted speed limit consistent with the Minor Collector, all modified design elements would be appropriate for the reduced design speed. The capability for vehicles to turn around on the lots will be provided such that backing maneuvers out of the driveways would not be necessary. This would be a requirement written into the HOA covenants including the regulation of "no backing onto the public roadway." Each driveway would be required to obtain a driveway permit, provide the required sight distance and other requirements of section 2.4.1.

The deviation will not adversely affect maintenance and its associated cost.

The proposed cross section would be the same as the standard cross section.

The deviation will not adversely affect aesthetic appearance.

The requested modifications to design elements would result in improve aesthetics as they would have less impact on the existing terrain.

Owner, Applicant and Engineer Declaration:

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

Signature of owner (or authorized representative)

Date

10-17-16

Signature of applicant (if different from owner)

Date

Signature of Engineer

Date

10/17/16

Engineer's Seal



Review and Recommendation:

APPROVED by the ECM Administrator

Date

This request has been determined to have met the criteria for approval. A deviation from Section _____ of ECM is hereby granted based on the justification provided. Comments:

____ Additional comments or information are attached.

DENIED by the ECM Administrator

Date

This request has been determined not to have met criteria for approval. A deviation from Section _____ of ECM is hereby denied. Comments:

____ Additional comments or information are attached.



Development Services Department
2880 International Circle
Colorado Springs, Colorado 80910

Phone: 719.520.6300
Fax: 719.520.6695
Website: www.elpasoco.com

DEVIATION REVIEW AND DECISION FORM

Procedure # R-FM-051-07
Issue Date: 12/31/07
Revision Issued: 00/00/00

DSD FILE NO.:

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General Property Information:

Address of Subject Property (Street Number/Name): N/A
Tax Schedule ID(s): #5100000334 plus other adjacent parcels
Legal Description of Property: NW4, NW4NE4, S2NE4, NW4SW4 SEC 31-11-65
Subdivision or Project Name: Flying Horse North at Shamrock Ranch

**Approved for consideration
by the BOCC**

10/24/2016 1:59:52 PM

Section of ECM from Which Deviation is Sought: 2.2.5.B.1 Rural and Urban Principal Arterial and Rural Minor Arterial Access Criteria Spacing.

Specific Criteria from Which a Deviation is Sought: Spacing of roads accessing a principal arterial or rural minor arterial that will result in a full-movement intersection shall be planned at one-half mile (one-quarter mile for rural minor arterials).

Proposed Nature and Extent of Deviation: The modification is requested to allow a proposed full-movement access to Black Forest Road (Rural Minor Arterial) 725 feet south of Black Forest Road/Terra Ridge Circle (south). This is 595 feet closer than the required one-quarter mile (1,320 feet) spacing. However, this would create two offset "T" intersections instead of one four-leg intersection, which in this situation would be preferable from a traffic operations and safety standpoint. The applicant will provide future access for parcel 5100000080 if/when the parcel is subdivided to eliminate the need for a continued access to Black Forest Road in the current driveway location.

Applicant Information:

Applicant: PRI #2, LLC
Applicant is: ☒ Owner ☐ Consultant ☐ Contractor
Mailing Address: 6385 Corporate Drive, Colorado Springs
Telephone Number: (719) 785-3237
Email Address: DrewB@classichomes.com
State: CO Postal Code: 80919
Fax Number: _____

Engineer Information:

Engineer: Jeffrey C. Hodsdon, P.E., P.T.O.E.
Company Name: LSC Transportation Consultants, Inc.
Mailing Address: 545 E Pikes Peak Ave, Suite 210, Colorado Springs
Registration Number: 31684
Telephone Number: (719) 633-2868
Email Address: jeff@LSCtrans.com
State: CO Postal Code: 80903
State of Registration: Colorado
Fax Number: (719) 633-5430

Explanation of Request (Attached diagrams, figures and other documentation to clarify request):

Section of ECM from Which Deviation is Sought: 2.2.5.B.1 Rural and Urban Principal Arterial and Rural Minor Arterial Access Criteria Spacing.

Specific Criteria from Which a Deviation is Sought: Spacing of roads accessing a principal arterial or rural minor arterial that will result in a full-movement intersection shall be planned at one-half mile (one-quarter mile for rural minor arterials).

Proposed Nature and Extent of Deviation: Please refer to the attached intersection/access spacing and sight distance exhibits. Proposed full-movement access to Black Forest Road (Rural Minor Arterial), 725 feet south of Black Forest Road/Terra Ridge Circle (south). This is 595 feet closer than the required one-quarter mile (1,320 feet) spacing. However, this would create two offset "T" intersections instead of one four-leg intersection, which in this situation would be preferable from a traffic operations and safety standpoint. The applicant will provide future access for parcel

5100000080 if/when the parcel is subdivided to eliminate the need for a continued access to Black Forest Road in the current driveway location.

Reason for the Requested Deviation: The modification is required for the access location to be permitted at the requested location because the proposed spacing would result in less than the prescribed one-quarter mile spacing. Also, the ECM does not have a provision for use of an offset T intersection configuration instead of one four-leg intersection. Overall, the proposed offset T intersection access configuration would be preferable to a four-leg intersection at the bottom of a seven percent downgrade. The location for the access has been selected because of this and because it would result in a more than adequate intersection and stopping sight distance and shorter vehicle stopping distance when compared to the location across from Terra Ridge Circle (south) with the access proposed for the crest vertical curve instead of the bottom of the vertical curve.

Comparison of Proposed Deviation to ECM Standard: The access is proposed to be 595 feet closer than the required one-quarter mile (1,320 feet) spacing to the intersection to the north and about 430 feet closer than the quarter-mile spacing to the south.

Applicable Regional or National Standards used as Basis: NCHRP 500 Strategy 17.1 B.5.

Application Consideration:

CHECK IF APPLICATION MEETS CRITERIA FOR CONSIDERATION

JUSTIFICATION

☐ The ECM standard is inapplicable to a particular situation.

☒ Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship on the applicant, and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.

The location for the access has been selected as the preferred location for several reasons. It would result in a more than adequate intersection and stopping sight distance and shorter vehicle stopping distance when compared to the location across from Terra Ridge Circle (south) with the access proposed for the crest of the vertical curve instead of the bottom of the vertical curve. The access placement in this location would not interfere with any existing or proposed auxiliary turn lanes. The access spacing north to Terra Ridge Circle (south) and south to Country Estates Lane would be sufficient for safe operations and turning movements. This access would not require any auxiliary turn lanes. Also, a significant benefit to the request would be that the intersection would be a T intersection configuration and the existing intersection to the north would also remain a T intersection. The T intersection configurations would have fewer vehicle conflicts than a four-leg intersection at Terra Ridge Circle (south). The current left turn from existing Terra Ridge Circle (south) would have lower delay and the intersection would have significantly fewer conflict points than if a four-leg intersection were created at this location.

☐ A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

If at least one of the criteria listed above is not met, this application for deviation cannot be considered.

Criteria for Approval:

PLEASE EXPLAIN HOW EACH OF THE FOLLOWING CRITERIA HAVE BEEN SATISFIED BY THIS REQUEST

The request for a deviation is not based exclusively on financial considerations.

See the following paragraph.

El Paso County Procedures Manual
Procedure # R-FM-051-07
Issue Date: 12/31/07
Revision Issued: 00/00/00
DSD File No. _____

The deviation will achieve the intended result with a comparable or superior design and quality of improvement. The deviation will not adversely affect safety or operations.

Please refer to the attached intersection/access spacing and sight distance exhibits. The location for the access has been selected because it would result in a more than adequate intersection and stopping sight distances and shorter vehicle stopping distance when compared to the location across from Terra Ridge Circle (south) with the access proposed for the crest of the vertical curve instead of the bottom of the vertical curve. The access placement in this location would not interfere with any existing or proposed auxiliary turn lanes. The access spacing north to Terra Ridge Circle (south) and south to Country Estates Lane would be sufficient for safe operations and turning movements. This access would not require any auxiliary turn lanes. Also, a significant benefit to the request would be that the intersection would be a T intersection configuration and the existing intersection to the north would also remain a T intersection. The offset T intersection configurations would have far fewer vehicle conflicts than a four-leg intersection at Terra Ridge Circle (south). According to NCHRP 500 Strategy 17.1. B4, (conversion of a 4-legged intersection to two offset T intersections), collision rates at a pair of two offset T intersections have been shown to have crash rates of 37 to 43 percent of the rates at a single, four-leg intersection with four approaches. There are certain conditions when offset T intersections should not be implemented, but for intersections such as the proposed intersection with what would be very low straight through volumes on the minor street, the offset T would be a better solution. Overall, the proposed offset T intersection access configuration would be preferable to a four-leg intersection created at the bottom of a seven percent downgrade. The provision for a shorter vehicle stopping distance with an uphill grade on the approach to an intersection would be preferable.

The applicant will provide future access for parcel 5100000080 if/when the parcel is subdivided to eliminate the need for a continued access to Black Forest Road in the current driveway location.

The deviation will not adversely affect maintenance and its associated cost.

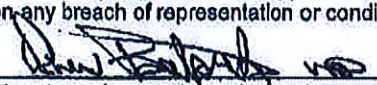
N/A

The deviation will not adversely affect aesthetic appearance.

N/A

Owner, Applicant and Engineer Declaration:

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.


Signature of owner (or authorized representative)

10-24-16
Date

Signature of applicant (if different from owner)

Date


Signature of Engineer

10-24-16
Date

Engineer's Seal



Review and Recommendation:
APPROVED by the ECM Administrator

Date

This request has been determined to have met the criteria for approval. A deviation from Section _____ of ECM is hereby granted based on the justification provided. Comments:

Additional comments or information are attached.

DENIED by the ECM Administrator

Date

This request has been determined not to have met criteria for approval. A deviation from Section _____ of ECM is hereby denied. Comments:

Additional comments or information are attached.

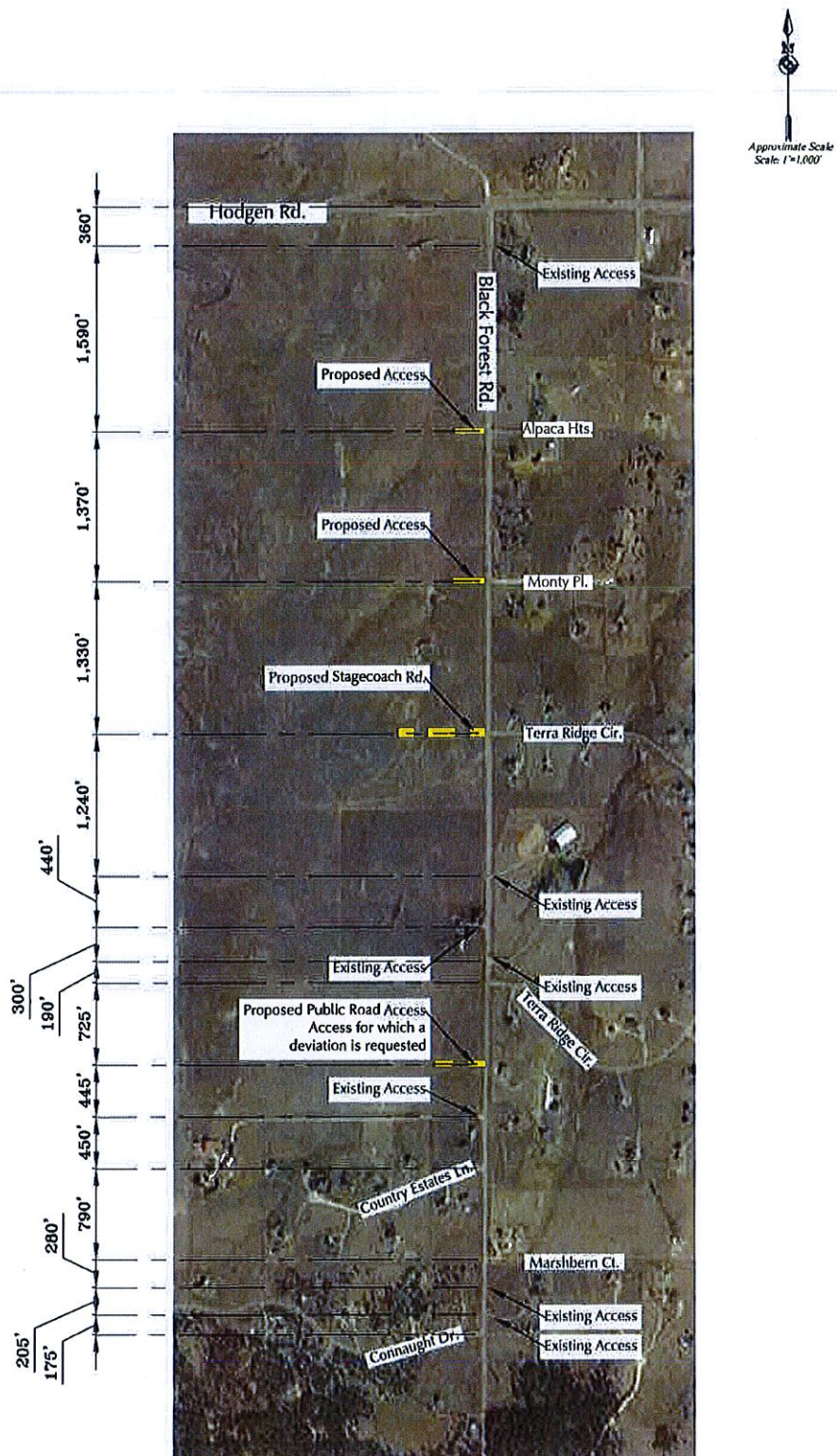
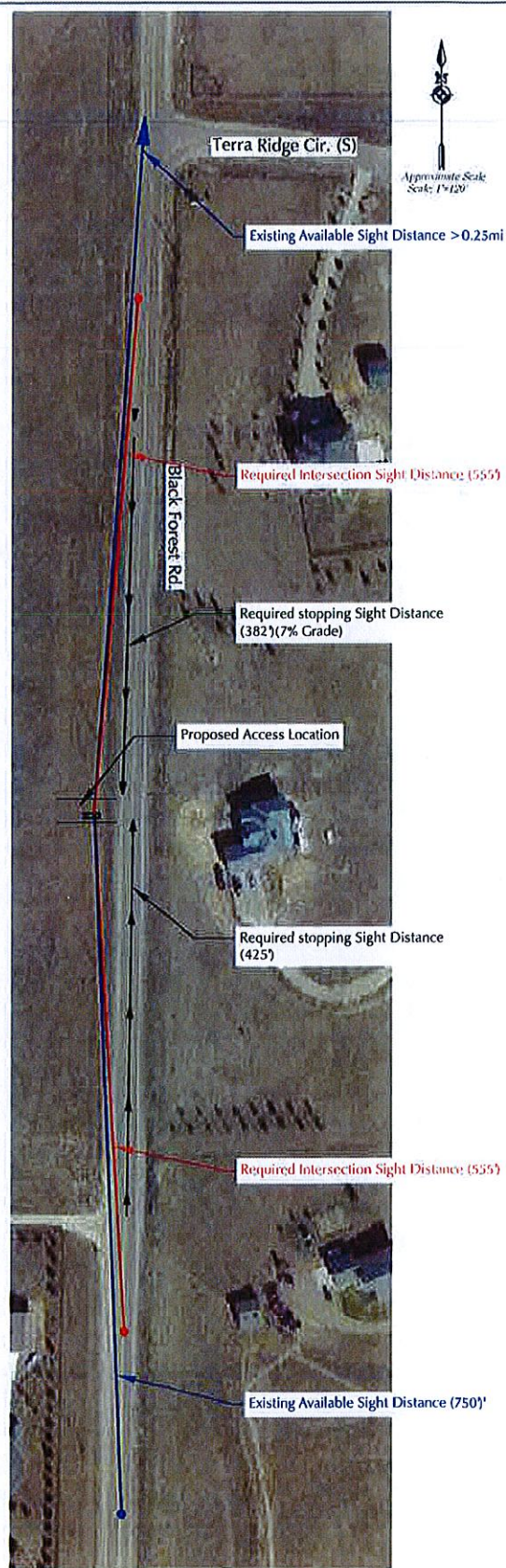
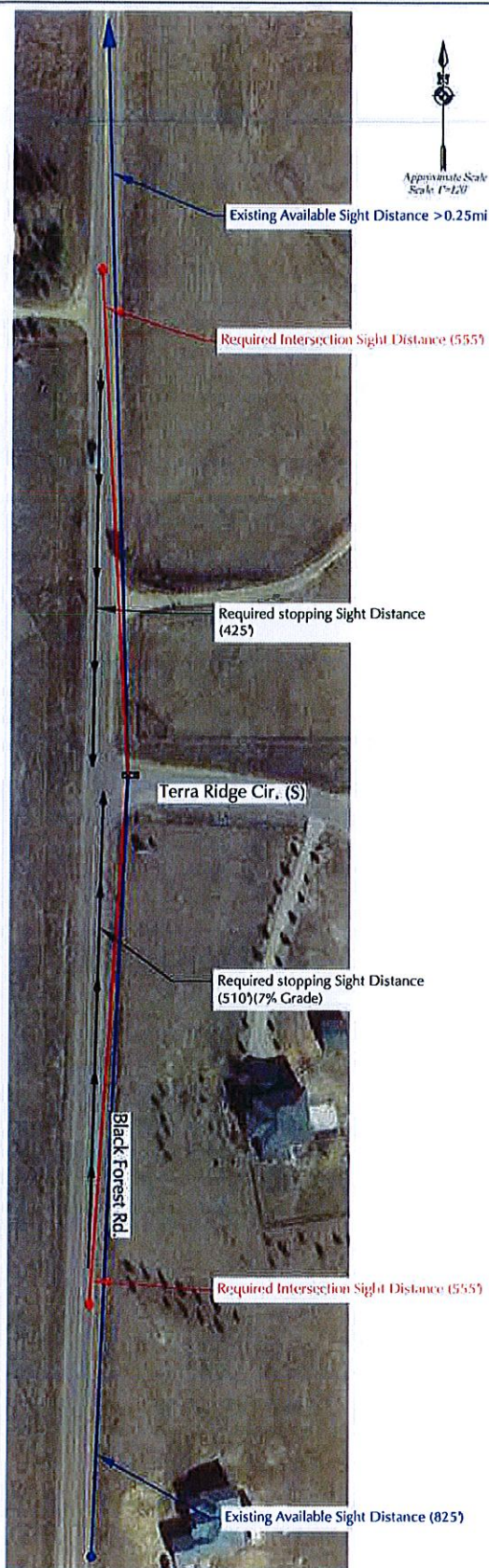


Figure 1
Black Forest Road Intersection/Access Spacing
Flying Horse North (LSC #164050)



LEGEND:

- = Required intersection sight distance for passenger cars
- = Field measured sight distance
- = Required stopping sight distance



Sight Distance for Black Forest Road

Flying Horse North (LSC #164050)

Figure 2