Innovative Methods for Calculation of Freeway Travel Time Using Limited Data

Final Report

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1. PROBLEM STATEMENT

Dynamic Message Signs (DMS) are in integral part of Freeway Management Systems. Within Ohio, Freeway Management Systems are currently in place in Columbus and Cincinnati and the Cleveland FMS is in design. ODOT's policy for Dynamic Message Sign utilization requires travel time(s) to be displayed as a default message. The current method of calculating travel time involves a workstation operator estimating the travel time based upon observation of high-density vehicle detectors.

Figure 1 Dynamic Message Sign on Freeway I-75 in Cincinnati, Ohio

The Akron-Canton Freeway Management System Detailed Project Plan (1) outlines the design and implementation of this new Freeway Management System. As outlined in this and other reports, with the proliferation of cell phone usage and the advent of computer-aided dispatch links from 911 call centers, incident detection no longer requires a high density of vehicle detectors along the highway. Therefore, ODOT's future freeway management system deployments (Cleveland, Akron-Canton, Dayton-Springfield, and Toledo) will only have a limited set of vehicle detectors for sampling.

ODOT currently utilizes two different algorithms to estimate travel time in its Freeway Management Systems for display on Dynamic Message Signs. These methods may no longer be accurate with limited vehicle detector data. Therefore, innovative methods for accurately calculating travel times are needed to maintain the message sign policy.

The objective of this research is to determine the accuracy of ODOT's travel time estimation methods utilizing vehicle detectors as a lesser interval than have been previously utilized. A methodology was proposed to estimate freeway corridor travel time under congested traffic. The focus of this study is the area covered by the ARTIMIS program in Cincinnati. Travel time estimations created by processing of simulated freeway loop detector data using proposed method have been compared with travel times reported from VISSIM model and the travel times recorded by probe vehicles driving on the tested freeway routes. In general, the statistical analysis showed that the travel time

estimations by the proposed method performed well and showed the evidence that we can obtain freeway corridor travel time using limited detectors within an acceptable error range.

2. PROJECT OVERVIEW

2.1 BACKGROUND

Travel time information has been an important component of Intelligent Transportation Systems (ITS), and especially is an integral part of Freeway Management Systems. Determine how to accurately estimate travel time is one of the most important issues in Intelligent Transportation Systems (ITS) studies. Most large metropolitan areas provide travel time information to motorists through dynamic message signs (DMS), 511 programs, the Internet, highway advisory radio (HAR), and other sources. With the rapid improvement in traffic surveillance and management systems, vast amounts of traffic data are now collected and made available to traffic operators. Prediction of travel time for a workstation operator based traffic data is now possible.

Many studies on travel time estimation can be found in the literature. However, the problem of finding effective and economic detector spacing has not been resolved. Kothuri summarized the results of a comparative analysis between two travel time algorithms applied to archived loop detector data-----a standard mid-point algorithm using the collective speed and a piecewise speed accumulation method requiring individual vehicle detection (2). In nine pipeline sections ranging from ½ miles to 1.5 miles, the authors found large estimation errors (15~20%) at some sections regardless of the data processing method. They further concluded that the accuracy of estimates seem to depend on the formation of queue with respect to the detectors. Wouters and Chan (3) provided a statistical algorithm to compute the average travel time for any freeway journey at any time by using loop detector data for all Dutch freeway sections in the last two years. This study showed that it is possible to make a customized travel time prediction for a planned freeway journey by using historical loop data when there is no construction or incident. Iris Fujito et al (4) studied the effect of sensor spacing on performance measure calculations. By comparing Travel Time Index (TTI), the ratio of free flow speed over the captured speed from the sensors, they conclude that as more sensors are deleted (1-mile versus 3-mile spacing), the TTI measure does not become “worse”. Since TTI directly influence travel time, this study suggests that it may be possible to use a reduced amount of data from limited loop detectors while maintaining the overall quality.

Other studies (5) suggest that, an error of 3 minutes is acceptable if the corridor travel time is near 30 minutes; for longer trips, the tolerance level is considered to be 10% ~15%.

In the vast majority of the aforementioned studies on travel time estimation, there is a commonly used algorithm to compute link travel time, called *mid-point* algorithm. Consider a corridor with M segments, indexed by j=1,…,M. At time slice i=1,…,T , the segment travel time can be calculated by:

$$t(i,j) = \frac{L_j}{v(i,j)} \tag{1}$$

Where L_j is the segment length, v (i,j) is the uniform speed within the section.

The speed data can be obtained from loop detectors at isolated single points along the freeway in a small time interval (Figure 2). The key feature of the mid-point algorithm is the use of influence area around each detector station and it is assumed that the detector station is at the midpoint of each influence area. Travel time is estimated for each segment at 20 to 30 second intervals and aggregated over 5 minutes.

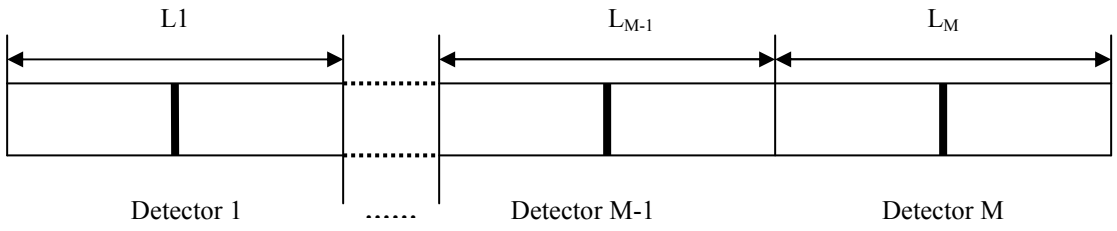


Figure 2 Midpoint Algorithm

2.2 PROJECT OBJECTIVE

Currently, ODOT use detector spacing of 1/3 mile or 1/2 mile in congested urban areas and one mile in areas with minor or no congestion. (6) Heavy reliance on closely spaced loop detectors implies significant economic burden. On the other hand, large detector spacing can result in loss of information, which leads to unreliable travel time prediction, especially in periods of congestion. Recent studies (1) found that with the proliferation of cell phone usage and the advent of computer-aided 911 call centers and dispatching, it may not be necessary to require a high density of vehicle detectors along the highway for incident detection. At the same time when other advanced detectors such as video and microwave detection systems can be used to provide traffic volume, vehicle speed, lane occupancy, as well as queue length information, traffic engineers wonder if detector spacing can be increased while not sacrificing the quality of data for travel time estimation.

The goal of this research project is to find effective and economic detector spacing. The challenge remains in congested traffic, where travel speed is impeded by the formation and dissipation of vehicle queues.

2.3 PROJECT APPROACH

This study explored the possibility of using larger detector spacing for travel time estimation than the existing practice, and in doing so it investigated two issues: how the estimation error is affected by the spacing, and if the errors can be kept within an acceptable range when large detector spacings are used. A VISSIM microscopic simulation model was constructed based on the test site ------ a section of freeway I-75 in Ohio between I-275 and the Ohio River in Cincinnati. At the simulation level, segment data can be captured from the detectors configured in the model, while corridor travel time can be obtained from the output file. Travel time estimations created by processing simulated freeway loop detector data have been compared with travel times reported from VISSIM

output file and the travel times recorded by probe vehicles driving on the same test site. The probe vehicles utilized global positioning system (GPS) sensors to accurately record location data as the vehicles traveled along the routes.

This research involved five activities:

1. Creating a VISSIM micro-simulation model of the test site and run the ODOT midpoint algorithms to compute the estimated travel times.
2. Collecting actual travel time information by employing four probe vehicles to drive along the freeways.
3. Calibrating VISSIM model using detector station data and probe vehicle data on Dec 18th, 2006.
4. Proposing a new method to estimate the freeway corridor travel time.
5. Analyzing the results to determine the accuracy of the travel time calculations.

3. METHODOLOGY AND DATA ANALYSIS

Because travel time studies usually involve a large system network and loads of data, simulation is a convenient and economic means for researchers to develop study plans for the network and explore new problem solving alternatives. In this study, we used VISSIM (7) as the simulation platform on which we could conveniently create different traffic scenarios and relocate loop detectors to formulate various spacing schemes. VISSIM has been widely used in recent years by many researchers and DOTs for traffic flow modeling. It is a microscopic, behavior-based, multi-purpose traffic simulation program and offers a wide variety of urban and highway applications. With this program, complex traffic conditions can be depicted to an unprecedented level of detail for convenient visualization.

The test site for this study is the southbound roadway of the section of I-75 in Ohio between I-275 the Ohio River. This is a 16-mile stretch of freeway in which some parts sustain heavy congestion during the day. The network contains 2-lane, 3-lane, 4-lane and 5-lane sections with roughly 17 ramps and the speed limit varies from 45 to 55 miles per hour. Figure 3 shows the freeway network (highlighted in bold line from A to B). This freeway stretch is implemented in the simulation environment to create a test bed for evaluating travel time estimation alternatives.

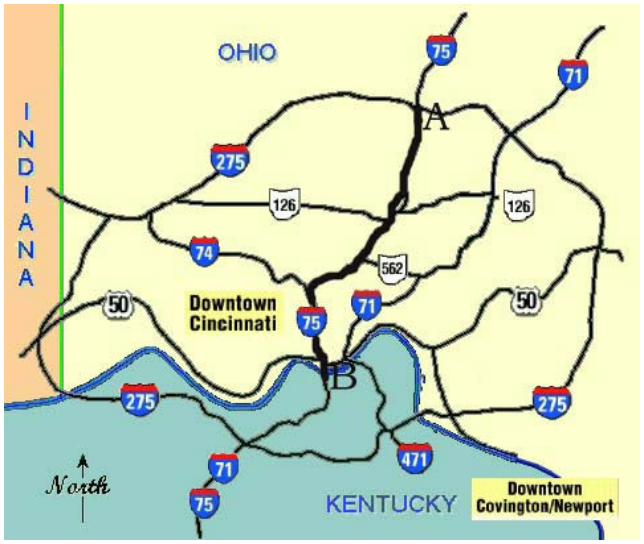


Figure 3 Freeway Links of I-75, I-71 and I-275 in Cincinnati (from www.artimis.org)

As the first step, we utilized a detector spacing of one-third mile to evaluate the effectiveness of the mid-point method according to Equation 1. Currently, loop detectors on I-75 in Cincinnati are installed at approximately one-third mile spacing. We put "data collection" stations in VISSIM to perform exactly the same task of loop detectors in the filed. In addition, we placed a travel time section covering the test corridor to collect total travel time. By placing such detectors in VISSIM, the whole corridor has been divided into many short segments. We collected simulated traffic speed of the vehicles in 30-second intervals and travel time. Once we obtained the speed captured from each "data collection" station and with the baseline detector spacing known, piecewise travel times for each segment between each pair of detectors were computed. The piecewise travel times were added together to get the estimated overall travel time, which was compared with the overall corridor travel time obtained from VISSIM output file.

Three types of traffic conditions were considered in the initial test: normal flow condition; incident condition for short duration (blocking two lanes at a four-lane section); work zone condition (closing one lane at a three-lane section). For each traffic conditions, we simulated three volume conditions: low (400 veh/hr/lane~600 veh/hr/lane), normal (600 veh/hr/lane~1200 veh/hr/lane) and high (1200 veh/hr/lane~1800 veh/hr/lane) to simulate a variety of conditions. Results from the tests showed that when traffic volume is low, the difference in travel times between that calculated by the mid-point algorithm and that reported in the VISSIM model output file under the normal condition is small; in congested flows, the error increased dramatically, as shown in Figure 4.

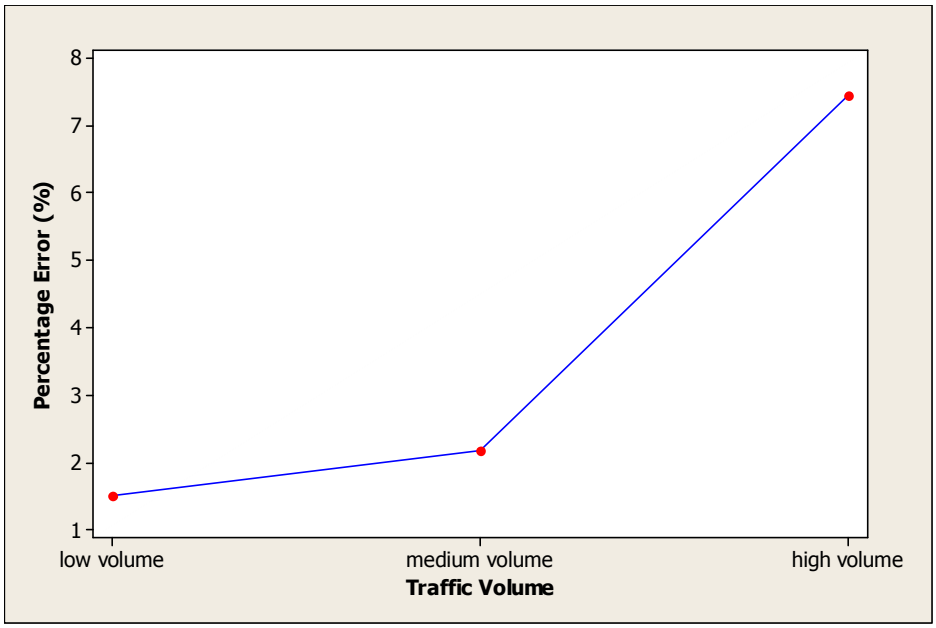


Figure 4 Percentage Errors under Different Traffic Volume Level (Normal Volume)

Next, we increased the detector spacing to 2/3 mile, 1 mile, 4/3 miles, 5/3 miles, and 2 miles, respectively, which can be simply generated by deleting every other "data collection" station, every two stations and so on and so forth. In such cases, the detectors are selectively placed to cover ramp junctions, freeway interchanges, and the places where lane drops or major lateral space restrictions occur.

In the incident case, two lanes were blocked for a short duration and only the other two lanes could release vehicles. As a result, a long queue spillback extended upstream into a three-lane section. The work zone case

modeled a long-term lane closure condition. One lane of a three-lane section was closed for a length of 2600 feet, resulting in minor traffic congestion.

Using the aforementioned conditions, a total of 20176 Data Collection Measurement records at 30-sec intervals were pooled from VISSIM and analyzed. We used absolute error (AE) and percentage error (PE) to summarize the results, as:

$$AE=| Pi - Oi | \quad (2)$$

$$PE = \frac{| Pi - Oi |}{Oi} * 100\% \quad (3)$$

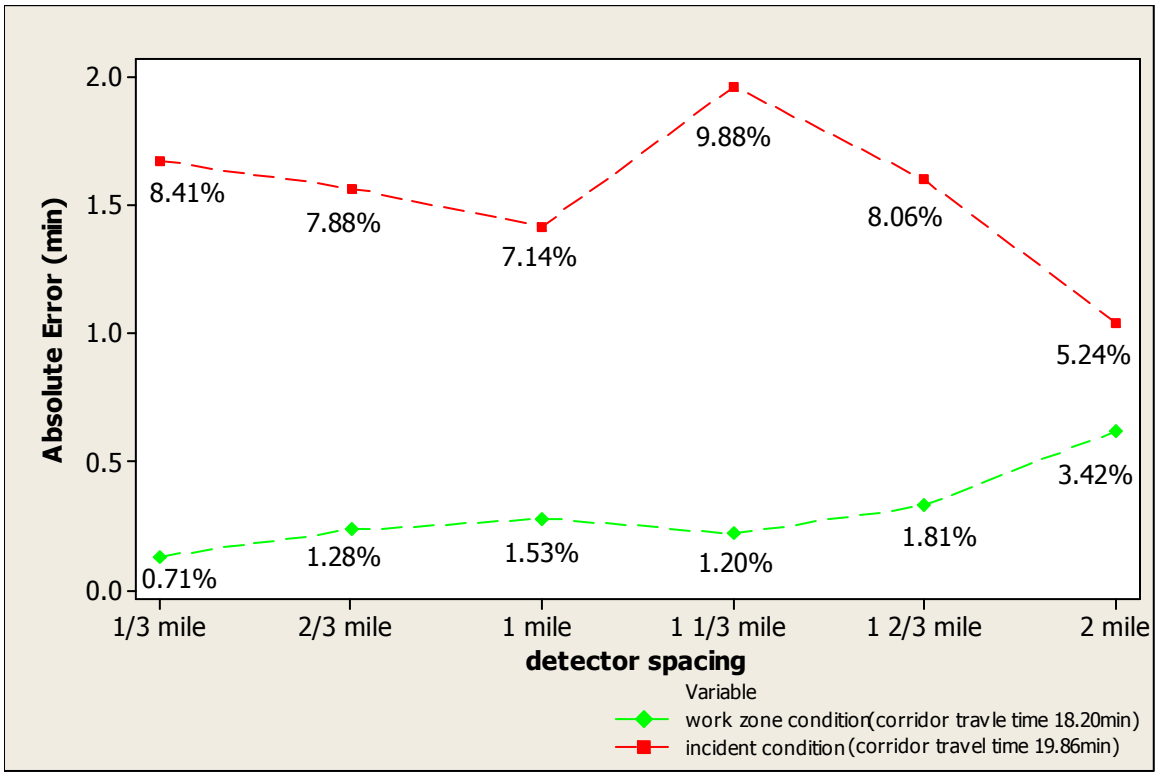
Where,

Pi--- estimated corridor travel time for a certain detector spacing i;

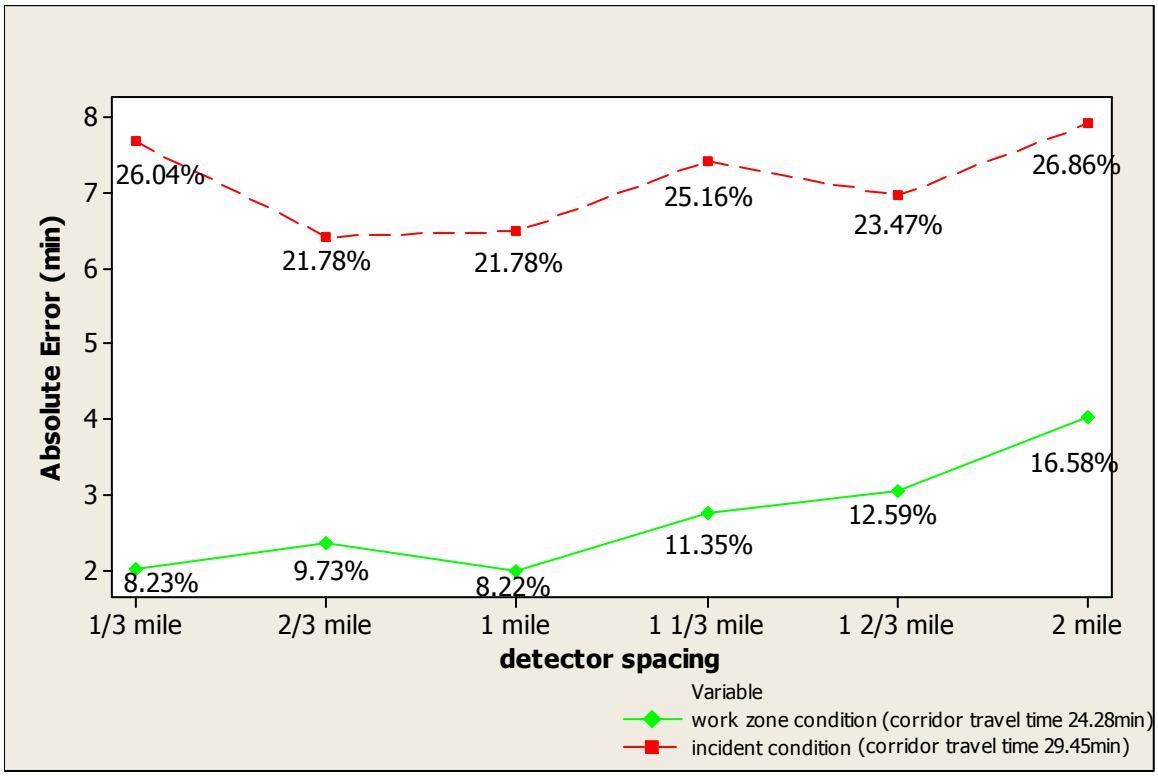
Oi--- corridor travel time reported from VISSIM output for the same detector spacing i;

i--- detector spacing index, 1/3, 2/3, 1, 4/3, 5/3 or 2 miles.

Figures 5 and 6 show the mean value of absolute errors and percentage errors when different detector spacings under different traffic volume and conditions are tested. In Figure 5, the errors in low volume conditions are all within 2 minutes (under 10% of total trip time) regardless of the traffic condition and the detector spacing. In general, as the detectors spacing increases, the errors also increase. The incident case under high volume produced the largest errors (6~8 minutes or 20%~25% of the total trip time). In fact, since Figure 5 shows only the mean value, further evaluation of the data revealed that some errors reached over 35%. Figure 6 shows the error range at the 95% confidence interval in each case, where we can see that high traffic volumes led to much larger errors in general, and the incident condition caused largest error variations due to its sudden and large degree of impact.

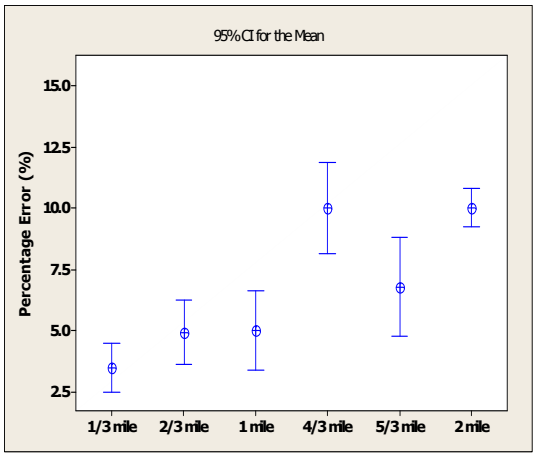


(a) Low Volume

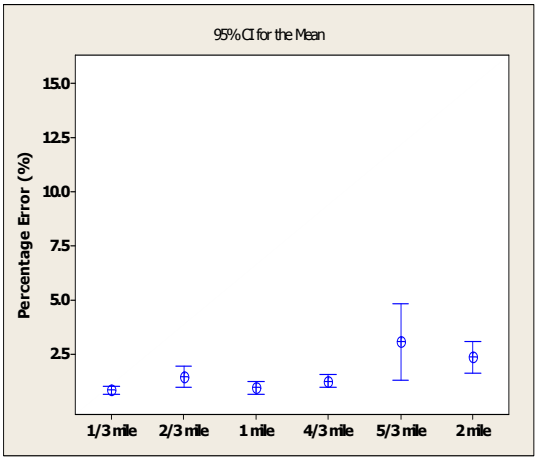


(b) High Volume

Figure 5 Absolute Mean Error from Midpoint Algorithm

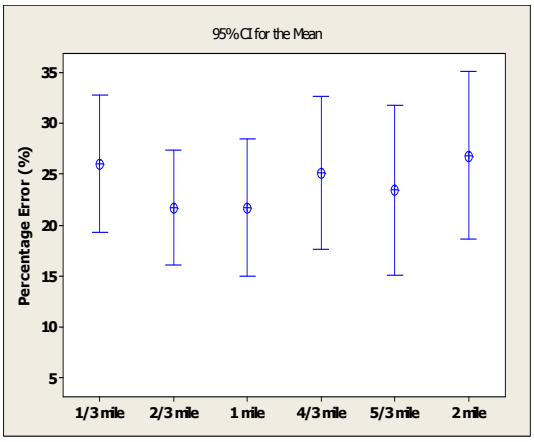


(i) High Volume

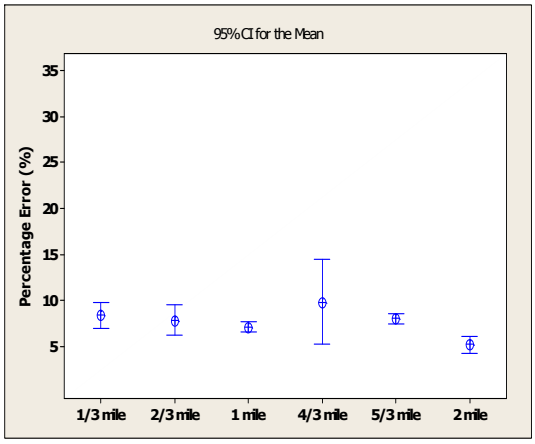


(ii) Low Volume

(a) Normal Flow Condition

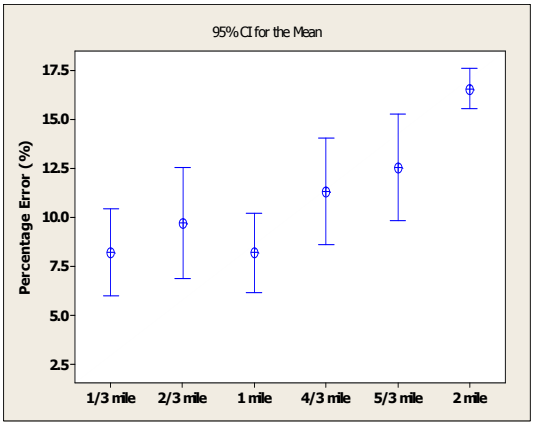


(i) High Volume

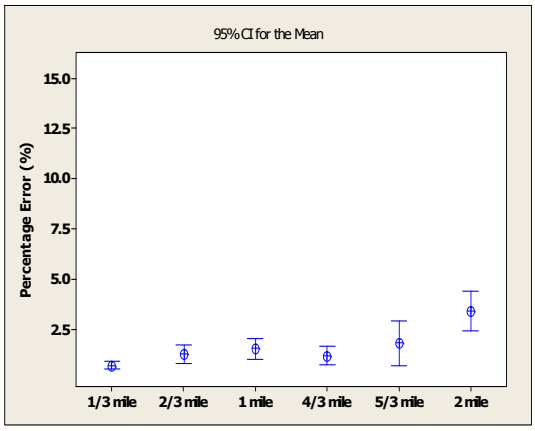


(ii) Low Volume

(b) Incident Condition



(i) High Volume



(ii) Low Volume

(c) Work Zone Condition

Figure 6 Summary of Percentage Errors

The results for the above tests were further analyzed in the One-Sample t-test. The power of this test is greater than a simple test of the means. The One-Sample t test considers the alternative hypothesis that the value of absolute error is less than the value of acceptable error (15% is used according to previous discussion). The t-test statistic is calculated as:

$$t = \frac{\bar{x} - \mu}{S_{\bar{x}}} \tag{4}$$

and the confidence interval for the error can be calculated using:

$$\bar{x} \pm t_{\alpha/2}\left(\frac{S_{\bar{x}}}{\sqrt{n}}\right) \tag{5}$$

Where,

$\bar{x}$ ---sample mean;

μ ---population mean;

$S_{\bar{x}}$ ---standard error of the mean;

n --- the sample size.

All test results are presented in Table 1, where the One-Sample t-test is displayed as p-values. The upper boundaries of the confidence intervals were calculated using a significance level of 95% ($\alpha = 0.05$). If the p-value is less than the test level α, then the alternative hypothesis is supported. That is the error lies in the acceptable range and vice versa. The values in bold characters represent situations where the estimation error is equal to or greater than the acceptable error. The high p-values represent greater imprecision of the estimated travel time. We can see from Table 1 that high p-values occurred in all cases involving an incident and some cases under work zone condition at high traffic volumes. The above results indicate that the mid-point algorithm is not effective in estimating travel time. In summary, the results from Figures 4, 5, 6 and Table 1 suggest that the midpoint algorithm is not a reliable method for travel time estimation under heavy traffic volume or in abnormal traffic conditions.

Table 1 One-Sample t-test P-Values, 95% Upper Confidence Bound

		High Volume		Low Volume	
Condition		p-value	Mean error (95% upper bound, minutes)	p-value	Mean error (95% upper bound, minutes)
Normal flow condition	1/3mile	0.000	0.959435	0.000	0.184138
	2/3 mile	0.000	1.33356	0.000	0.340588
	1 mile	0.000	1.40652	0.000	0.221670
	4/3 miles	0.000	2.56465	0.000	0.278987
	5/3 miles	0.000	1.87468	0.000	0.825592
	2 miles	0.000	2.37163	0.000	0.543080
Incident Condition	1/3mile	**1.000**	11.62900	**1.000**	1.91148
	2/3 mile	**0.998**	12.08068	**1.000**	1.84289
	1 mile	**0.995**	8.48006	**1.000**	1.50831
	4/3 miles	**0.999**	17.5228	**0.997**	2.71831
	5/3 miles	**0.993**	15.8828	**1.000**	1.69352
	2 miles	**0.999**	16.9275	**1.000**	1.19080
Work Zone Condition	1/3mile	0.001	10.57830	0.000	0.157643
	2/3 mile	**0.056**	10.22919	0.000	0.302887
	1 mile	0.000	10.12294	0.000	0.360564
	4/3 miles	**0.313**	6.94652	0.000	0.284998
	5/3 miles	**0.670**	16.22919	0.000	0.497782
	2 miles	**1.000**	5.35576	0.000	0.767804

Clearly, by simply using data from detectors located in isolated roadway points we were not able to make good travel time estimates in congested flows regardless of the detector spacing. Improvements must be made on the data processing method. We next tested a weighted averaging method which uses data from two adjacent detectors (upstream and downstream detectors) with different weights assigned to one detector over the other. In determining the detector weights, additional knowledge of the real time traffic condition was acquired from the simulation depending on if the congestion was before, after, or within the two detectors. Our testing showed that the weights must be changed frequently to address variations in the traffic conditions but the changes do not follow a traceable pattern to relate to the level of traffic. In fact, improvements can only be obtained in a few separate cases by using this method. The results are not supported by consistency and the overall errors are still between 20% and 30% in high volume conditions.

We continued to search for other ways for improved data processing. It is apparent that the problem lies in congested flows thus an effective method of working with such flows must be considered. Earlier work by Michalopoulos and Yi (8, 9) had shown some initial success in modeling queue spillback and congestion dissipation with continuum models. We subsequently tried to incorporate continuum modeling into the travel time estimation process.

Continuum traffic models were introduced in the early 1960s and 1970s. The most widely known continuum models can be characterized as being either simple (first) order (Lighthill and Whithman 1955) or higher order (Payne 1971). A simple continuum model, which is also called vehicle conservation equation, has the following general form:

$$\frac{\partial k}{\partial t} + \frac{\partial q}{\partial x} = g(x,t) \tag{6}$$

Where,

q (x, t)--- the flow rate at location x and time t (veh/hr);

k (x, t)--- density at location x and time t (veh/mile).

g --- a generation term, which is equal to the entering (positive) or exiting (negative) flow rate, or zero for a pipeline freeway section.

The simple continuum model is more widely used and easier to implement than the higher order model. We applied the simple continuum model in two steps. First, conventional applications of the conservation equation involve finding the state variables q and k at the given sections of the roadway in a fixed time step. In this research, however, since our focus is travel time, we discretized the model in such a way that travel time for the roadway section is to be determined from the changing characteristics of traffic flow. Secondly, because congestion propagation and queue dissipation directly affect travel time, we explored different numerical methods in search for one that can handle shockwave effectively. Through experimentation, we selected the upwind scheme by Stegger

and Warming (10) which supports flux vector splitting to implement Equation 6. The resultant equation after numerical treatment has this form:

$$t_j^{n+1} = t_j^n - \Delta x \cdot \nabla_x \left[\left(\frac{\Delta k}{g(x,t) \cdot \Delta x - \Delta q} \right)^+ \right]_j^n - \Delta x \cdot \Delta_x \left[\left(\frac{\Delta k}{g(x,t) \cdot \Delta x - \Delta q} \right)^- \right]_j^n \quad (7)$$

Where

t --- travel time for segment j;

Δx --- discretization size in space, and is such a length in which flow rate and density is considered uniform;

Δk --- increase in density of vehicles;

j,n--- the indices in space and time;

∇_x and Δ_x --- a forward difference and a backward difference, respectively. (Hirch, (11))

Δq --- change in flowrate;

g --- generation term;

The travel time going through a roadway segment can be calculated after implementing Equation 7. For example, for a pipeline section (g = 0) the travel time at the time of estimation can be determined by the following formulations:

(a) during congestion propagation,

$$t_j = \frac{2(u_{j+1}^n - u_j^n)}{u_j^n \cdot u_{j+1}^n} \cdot \frac{k_j^{n+1} - k_j^n}{2k_j^n - k_{j-1}^n - k_{j+1}^{n+1}} \Delta x + \frac{\Delta x}{u_j^n} \quad (8)$$

(b) during queue dissipation,

$$t_j = \frac{u_{j+1}^n - u_j^n}{u_j^n \cdot u_{j+1}^n} \cdot \frac{u_{j+1}^n k_{j+1}^n - u_j^n k_j^n}{u_j^n k_j^n - u_{j-1}^n k_{j-1}^n} \Delta x + \frac{\Delta x}{u_j^n} \quad (9)$$

The travel time for a congested roadway section, s, due to recurrent congestions, work zone, or incident is then,

$$t_s = \sum_{j=1} t_{j,s}^n \quad (10)$$

We applied Equation 8 and 9 applied only to those sections with congestion. For other uncongested roadway sections, where the convection property of traffic flow prevails, the upstream speed can be used to obtain travel time. Thus the travel time for the entire corridor will consist of two parts, as shown below:

$$TT = \sum_{b=1} \frac{L_b}{u_b} + \sum_{s=1} \sum_{j=1} t_{j,s}^n \quad (11)$$

Where u is the midpoint speed and L is the length of the section; b covers all the sections in normal traffic conditions; s covers all the congested sections and each section includes one or several Δx segments denoted by j. Because of the iterative nature of Equations 8 and 9, they can be easily implemented on a spreadsheet file once the boundary conditions from the congested section are known. Using Equations 11, we conducted a number of test runs on pipeline sections and ramp junctions to calibrate the model. This work involves selecting proper sizes of the space segment and time step so that the calculated travel time is numerically stable in similar type of geometric configurations (Table 2). After model calibration, Equation 11 was further applied to obtain new travel time estimations. Similarly, we tested the work zone and incident scenarios in both low and high volumes, and updated the travel times in the comparisons.

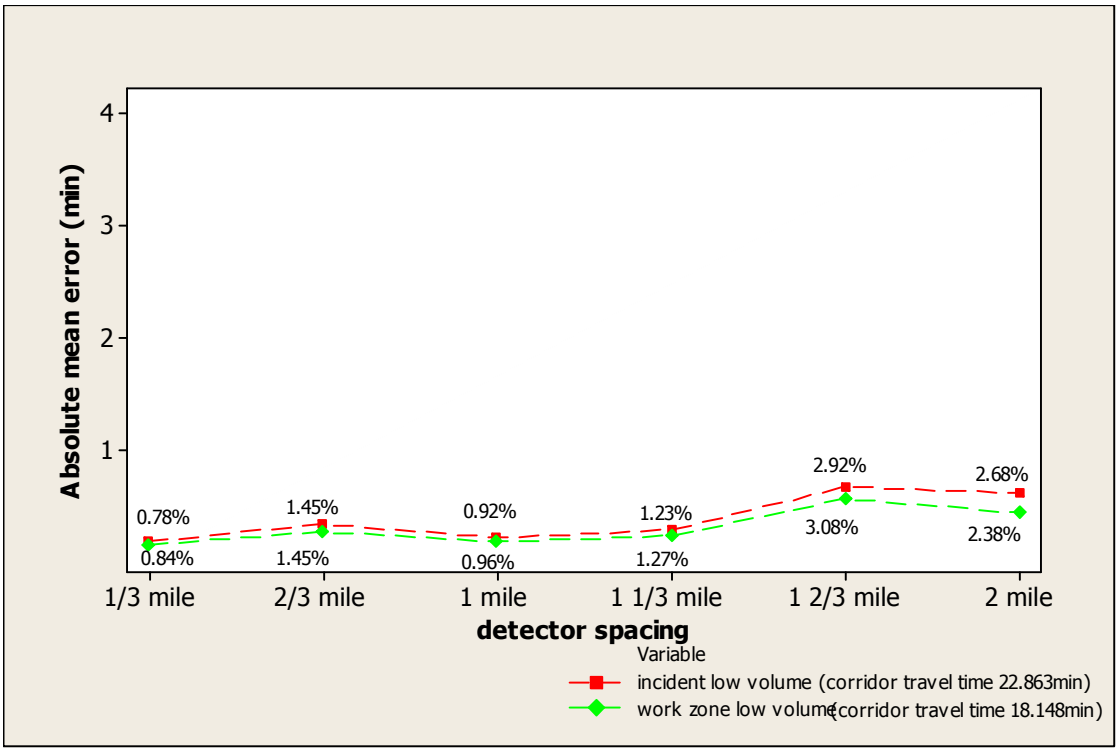
Table 2 Calibration Results on Different Types of Roadway Sections

Road configuration	Percentage error (%)
(a) lane drop and addition	13.00829
(b) on and off ramps	4.127587
(c) lane drop followed by an on ramp	10.49133
(d) weaving region	5.849236
(e) pipe line	1.739467

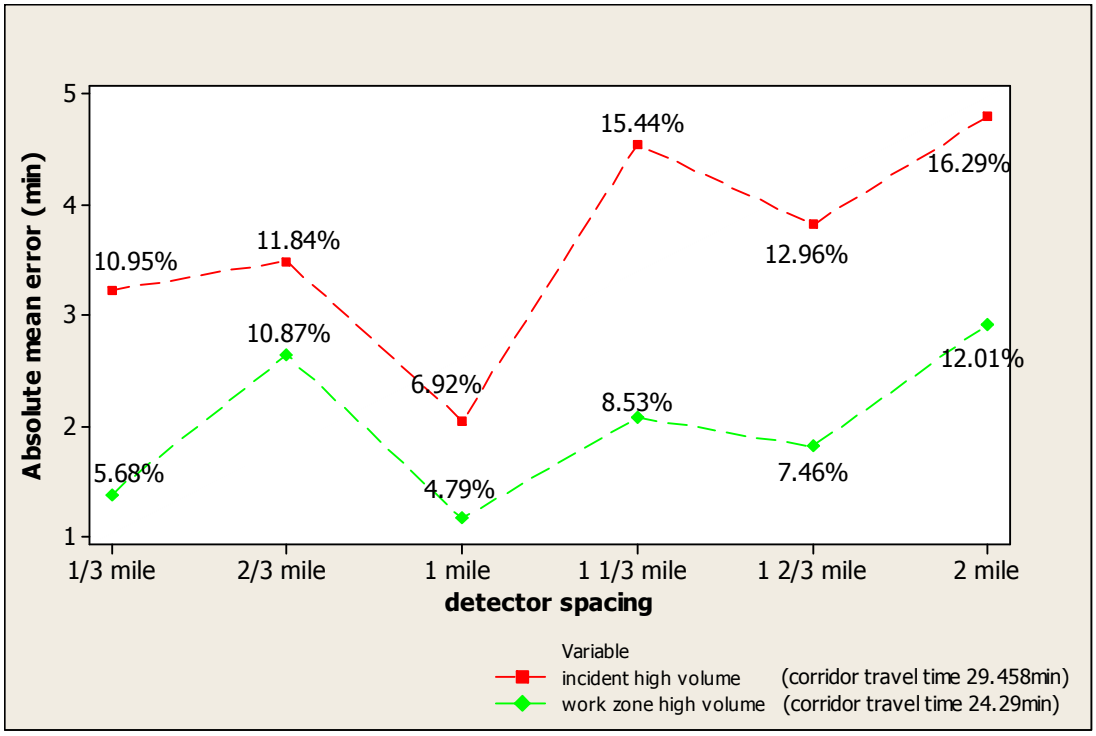
The results are shown in Figure 7 and Table 3. It can be found from those results that:

1. In general, as detector spacing increases the errors also increase;
2. The improved method leads to a reduction in the estimation errors under work zone condition by 3%~5% (Figure 7 compared with Figure 5);
3. Similarly, the errors under the incident condition is reduced by 3 minutes, or 10% for the high volume cases;
4. When detector spacing increases to 4/3 miles and 2 miles, the errors are near or exceeding the 15% allowable level;
5. The spacing of 1 mile appears to be associated with the lowest errors, within 5%~8%.

The above results are further corroborated by the statistics in Table 3, where it can be seen that only the travel time estimates at the spacing of 5/3 miles are less trustworthy at the 95% significant level. All the other p-values are very low or equal to zero which indicates that the errors are acceptable at α=0.05 significance level.



(a) Low Volume



(b) High volume

Figure 7 Absolute Mean Error of Different Detector Spacing under Different Traffic Volume

Table 3 Comparison of One-Sample t-test P-Values, 95% Upper Confidence Bound of Percentage Error (%) for Improved Method (α =0.05)

		High Volume		Low Volume	
Condition		p-value	Mean error (95% upper bound, minutes)	p-value	Mean error (95% upper bound, minutes)
Incident Condition	$\frac{1}{3}$ mile	0.000	9.32078	0.000	0.224681
	$\frac{2}{3}$ mile	0.007	7.78963	0.001	0.435102
	1 mile	0.000	8.11608	0.000	0.350862
	$1\frac{1}{3}$ miles	0.022	9.25777	0.000	0.268850
	$1\frac{2}{3}$ miles	**0.966**	8.99836	0.000	0.948465
	2 miles	0.000	9.91438	0.000	0.736636

Work Zone Condition	$\frac{1}{3}$ mile	0.000	2.44819	0.000	0.206534
	$\frac{2}{3}$ mile	0.001	2.93657	0.000	0.335675
	1 mile	0.000	2.40631	0.000	0.287542
	$1\frac{1}{3}$ miles	0.000	3.30475	0.000	0.304752
	$1\frac{2}{3}$ miles	**0.994**	3.60615	0.000	0.606567
	2 miles	0.000	4.23186	0.000	0.689753

4. FIELD DATA COLLECTION AND ANALYSIS

In order to verify the model output and the analytical equations mentioned previously, our team conducted field data collection. The data collection consisted of "probe vehicles" or vehicles equipped with GPS devices and software to determine travel time and speeds.

Software and equipment was purchased from Jamar Technologies, Inc., including handheld PDA's, GPS receivers, GPS2PDA Software (for data collection), and Travel Time for Windows Software (for analysis and reports).

Figure 8 Probe Vehicle Equipped with GPS

Our field collection team consisted of students from The University of Akron and The University of Cincinnati. Four probe vehicles were utilized – each consisting of one driver and one operator. Data were to be collected along the study route of I-75 in Ohio between I-275 interchange to the north and the Ohio River to the south, both northbound and southbound. Probe vehicles were spaced at approximately 10 minutes intervals within the traffic stream. Data were collected on September 13, 2006, from approximately 3:00 pm to 5:00 pm, however, all four units locked up in the field. In subsequent discussion with Jamar, several possible sources of problems were corrected including updating the operating systems on each of the PDA's.

Our team returned to the site on December 18, 2006, and successfully collected data from four probe vehicles. In addition, we obtained actual loop detector and radar data from ARTIMIS for this time period.

The data were subsequently analyzed with the Travel Time for Windows Software. This software allows the user to print a variety of graphs and spreadsheets which show the relationships between time, distance, and speed for the data collection period.

From the probe vehicle reports, the segment travel time of a freeway corridor was calculated by averaging travel times of individual vehicles arriving at the downstream boundary. During later comparison, this average probe vehicle travel times was chosen as the reference travel time of the freeway corridor:

$$\mathrm{TT_p} = \frac{\sum_{n=1}^{N}(t_d^n - t_u^n)}{N} \tag{12}$$

where t_d^n and t_u^n are times when vehicle n passes the downstream and upstream boundaries of the corridor. N is the number of sample vehicles arriving at the downstream boundary.

Using the field data, we first conducted a test to compare the loop data based travel time with that of the float cars. We used the existing 1/3 mile spacing for several runs and found the travel time difference is in the range of 17%~25% and increasing the spacing caused this difference even greater. We continued the test by using the improved method with input from the loop detectors and video camera, and made a detailed comparison with the floating car method as shown in Figure 9. It can be seen that the difference is reduced to 7%~10% for a detector spacing between 1/3 miles and 4/3 miles. Again, the 1-mile spacing seems to outperform the others. When we increased the spacing to 3/2 miles and 2 miles, the errors jumped to 20%~30%. This is because at such large spacings we could not use the loop and video data to cover some ramp junctions with congestion. This indicates that spacing is very sensitive in the real-time traffic and further enhancement on the estimation method is needed if greater spacing is so desired. Nevertheless, the overall effectiveness of the improved method is clearly shown.

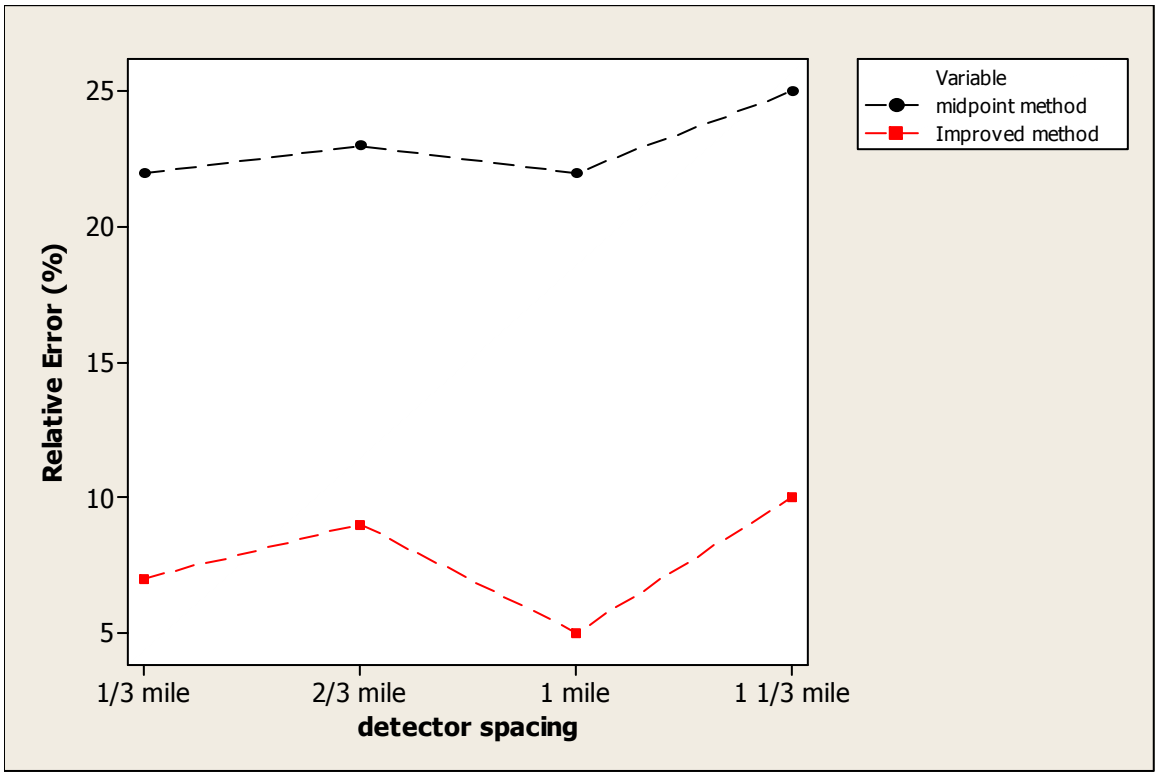


Figure 9 Field data based comparison between midpoint and improved methods

5. SUMMARY AND FUTURE WORK

This project studied detector spacings and their impact on travel time estimations under different traffic conditions. Using a 16-mile freeway stretch of I-75 in Ohio as the test bed we generated piecewise travel time estimates from individual detector stations in a simulated environment and compared the cumulative trip time with the corridor traffic time obtained directly from the computer model. In a number of testing cases involving incident and work zone, we found that the midpoint algorithm is not effective in reducing the estimation error in congestion conditions; the estimation error can be over 30% in case of a traffic incident. The improved method introduced in this paper, which incorporates continuum modeling, is able to generate reasonably accurate results in different traffic and geometric conditions, and its performance is supported by consistency in statistical testing. By using this method to estimate travel time, the errors in high volume situations are reduced to 5%~10% corresponding to detector spacing from 1/3~4/3 miles. The results are encouraging. The improved method was further tested with field data, where data from loop detectors and video cameras were used to estimate travel time in comparison with the floating car method. The field verification confirms the effectiveness of the improved method, and it corroborates with the findings from the simulation that increasing the detector spacing to 1 mile does not significantly affect the results of travel time estimation.

Although this research is only a methodology study, once proven successful by further testing and evaluation, fewer detector stations will be needed and the long-term savings in system operation and maintenance costs will be immense. The improved method based on continuum modeling can be relatively easily implemented

with boundary conditions of the congested areas. Because of the iterative nature of the computations in the error correction term, a spreadsheet program can be used to calculate the extra times due to congestion. Today, since surveillance cameras are already in place in major interchanges and ramp junctions, the system operators will be able to identify the areas of congestion, and categorize the level of severity (as boundary conditions) to selectively adjust the travel time according to the location and extent of the congestion. To test the feasibility, the researchers at The University of Akron Traffic Lab examined queue formation and dissipation processes, and were able to gather enough data in a number of tests to generate location specific work curves for travel time adjustment. Preparation is underway to move the methodology into field testing and evaluation in the near future.

ACKNOWLEDGEMENTS

Funding for this research is provided by the Ohio Department of Transportation. Appreciation is also extended to Andrew Fluegemann at ARTIMIS and TranSystems Corporation for base data and to Steve Jewell of DLZ for his technical oversight and assistance in this study.

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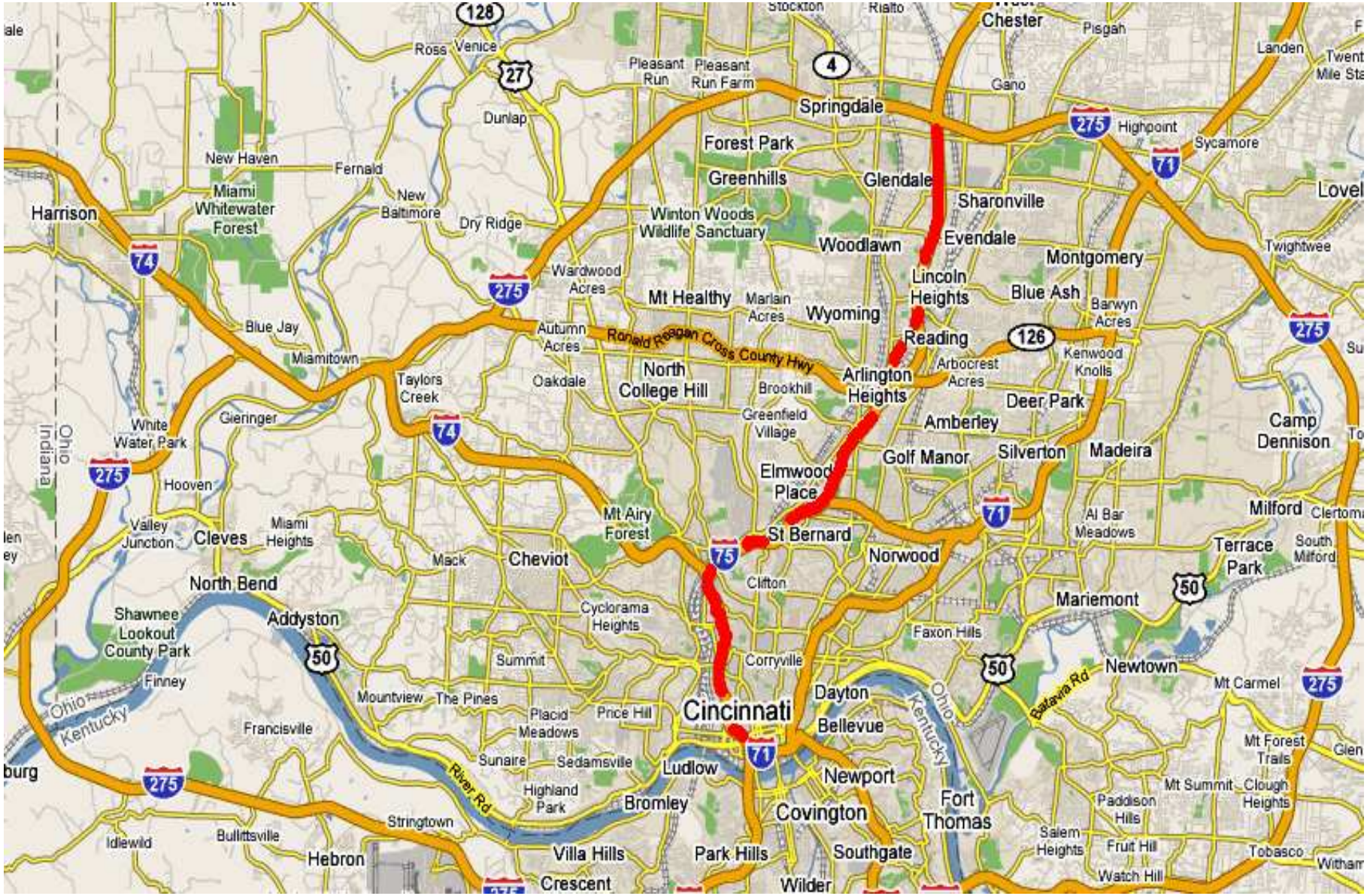
Appendix A System Map


Ross
Venice
128
27
Pleasant Run
Pleasant Run Farm
4
Springdale
Chester
Pisgah
Landen
Gano
Dunlap
Forest Park
Greenhills
Glendale
Sharonville
275
Highpoint
Sycamore
71
New Haven
Fernald
Miami Whitewater Forest
New Baltimore
Dry Ridge
Harrison
74
Winton Woods Wildlife Sanctuary
Woodlawn
Evendale
Montgomery
Twightwee
Wardwood Acres
Mt Healthy
Marlain Acres
Lincoln Heights
Blue Ash
Barwyn Acres
Wyoming
Blue Jay
Autumn Acres
Ronald Reagan Cross County Hwy
Reading
126
Kenwood Knolls
Miamitown
Taylors Creek
Oakdale
North College Hill
Brookhill
Arlington Heights
Arbocrest Acres
Deer Park
Greenfield Village
Amberley
Camp Dennison
Gieringer
White Water Park
Ohio
Indiana
Golf Manor
Silverton
Madeira
Hooven
Elmwood Place
Valley Junction
Cleves
Miami Heights
Mt Airy Forest
St Bernard
Al Bar Meadows
Milford
Mack
Cheviot
Norwood
Terrace Park
South Milford
North Bend
Clifton
Mariemont
Shawnee Lookout County Park
Addyston
Cyclorama Heights
Faxon Hills
Summit
Corryville
Newtown
Finney
Mountview
The Pines
Dayton
Mt Carmel
Ohio
Kentucky
Placid Meadows
Price Hill
Cincinnati
Bellevue
Batavia Rd
Francisville
Sunaire
Sedamsville
Ludlow
Newport
Mt Forest Trails
Highland Park
Bromley
Mt Summit
Clough Heights
Paddison Hills
Stringtown
Covington
Fort Thomas
Idlewild
Bullittsville
Hebron
Villa Hills
Park Hills
Southgate
Salem Heights
Fruit Hill
Tobasco
Crescent
Wilder
Watch Hill

Appendix B Filed Data

PC-Travel for Windows Reports for study: I-75 SB Hoyt

I-75 SB Hoyt

12-18-06

Heading Third Line

Study Summary

Runs Used in This Study

Node Info

#	Len	Name
1	0	start
2	1760	16.66 mi
3	1760	16.33 mi
4	1760	16.0 mi
5	1760	15.66 mi
6	1760	15.33 mi
7	1760	15.0 mi
8	1760	14.66 mi
9	1760	14.33 mi
10	1760	14.0 mi
11	1760	13.66 mi
12	1760	13.33 mi
13	1760	13.0 mi
14	1760	12.66 mi
15	1760	12.33 mi
16	1760	12.0 mi
17	1760	11.66 mi
18	1760	11.33 mi
19	1760	11.0 mi
20	1760	10.66 mi
21	1760	10.33 mi
22	1760	10.0 mi
23	1760	9.66 mi
24	1760	9.33 mi
25	1760	9.0 mi
26	1760	8.66 mi
27	1760	8.33 mi
28	1760	8.0 mi
29	1760	7.66 mi
30	1760	7.33 mi
31	1760	7.0 mi
32	1760	6.66 mi
33	1760	6.33 mi
34	1760	6.0 mi
35	1760	5.66 mi
36	1760	5.33 mi
37	1760	5.0 mi
38	1760	4.66 mi
39	1760	4.33 mi

40	1760	4.0 mi
41	1760	3.66 mi
42	1760	3.33 mi
43	1760	3.0 mi
44	1760	2.66 mi
45	1760	2.33 mi
46	1760	2.0 mi
47	1760	1.66 mi
48	1760	1.33 mi
49	1760	1.0 mi
50	1760	0.66 mi
51	1760	0.33 mi
52	1760	end

Length of Study Route = 89,760 feet

Run Title	Start Date	Start Time	Length	Before/ After	Run Type
I-75 SB-Hoyt-SB-001	12/18/06	15:56	88239	Before	Secondary
I-75 SB-Hoyt-SB-002	12/18/06	16:53	89484	Before	Secondary
I-75 SB-Hoyt-SB-003	12/18/06	18:02	88294	Before	Secondary

Notes:

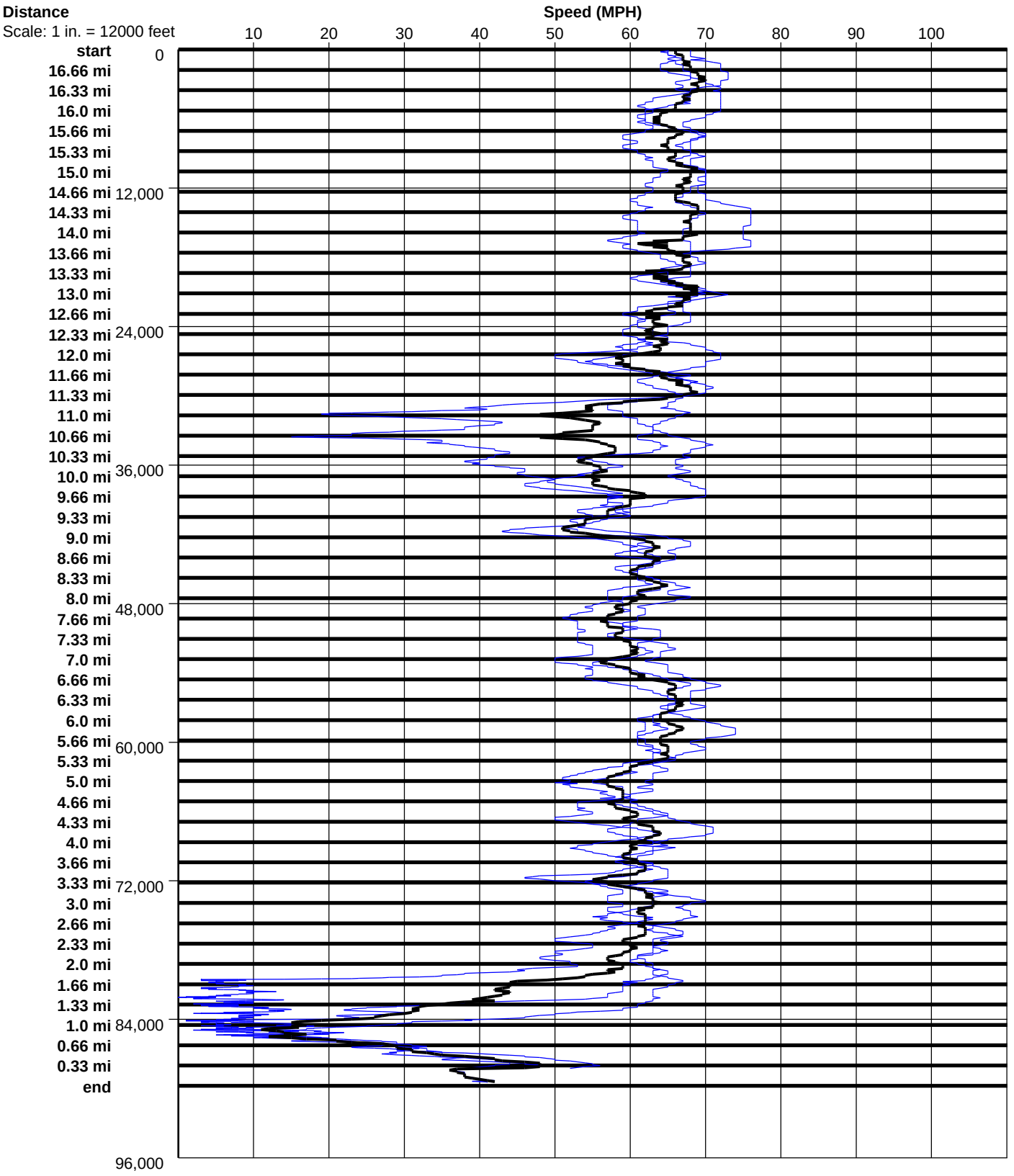
I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name : **I-75 SB Hoyt**
Study Date : **12/21/2006**
Page No. : **4**

Speed/Distance Profiles of All Runs



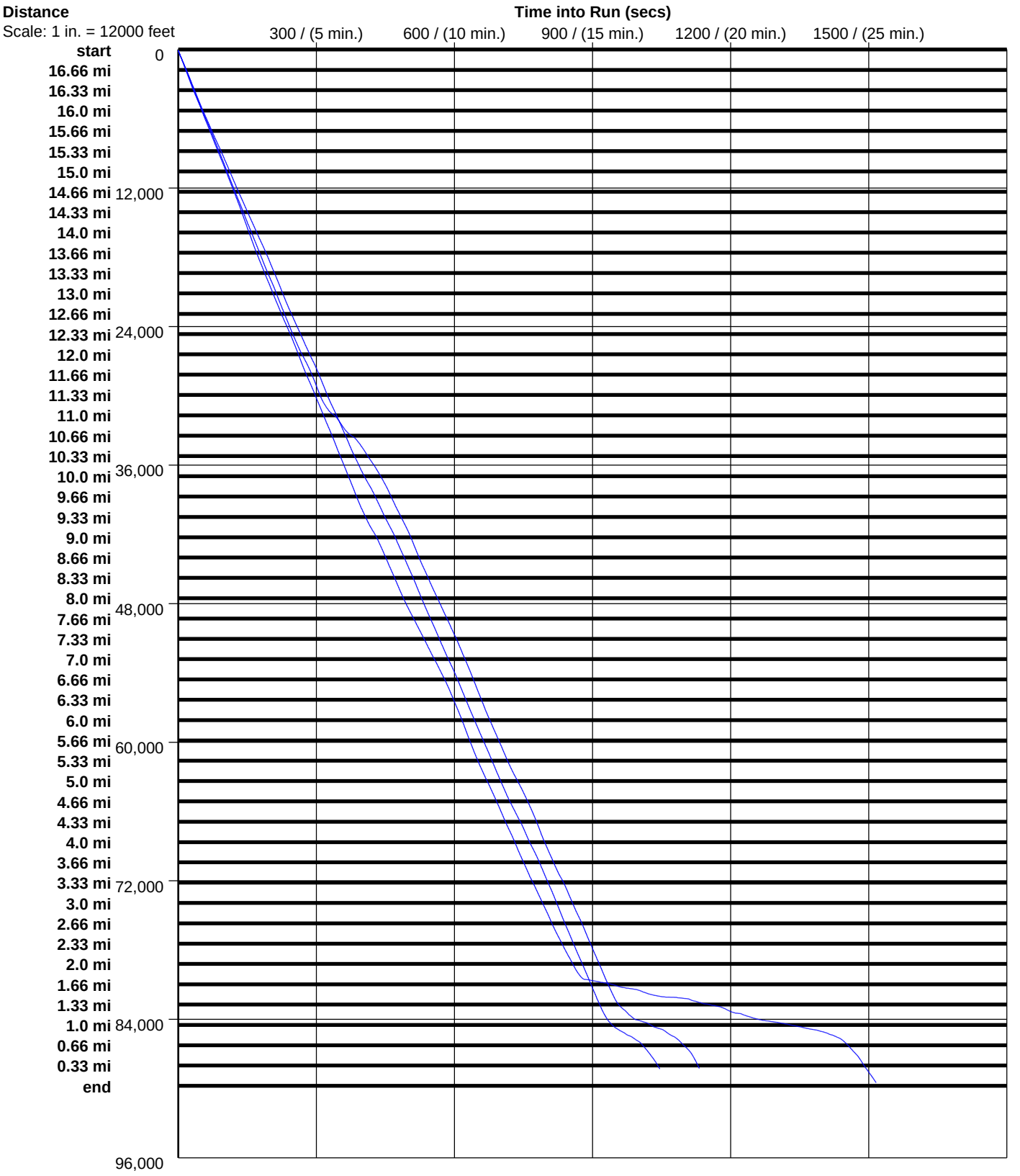
I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 5**

Time/Space Trajectories of All Runs



I-75 SB Hoyt

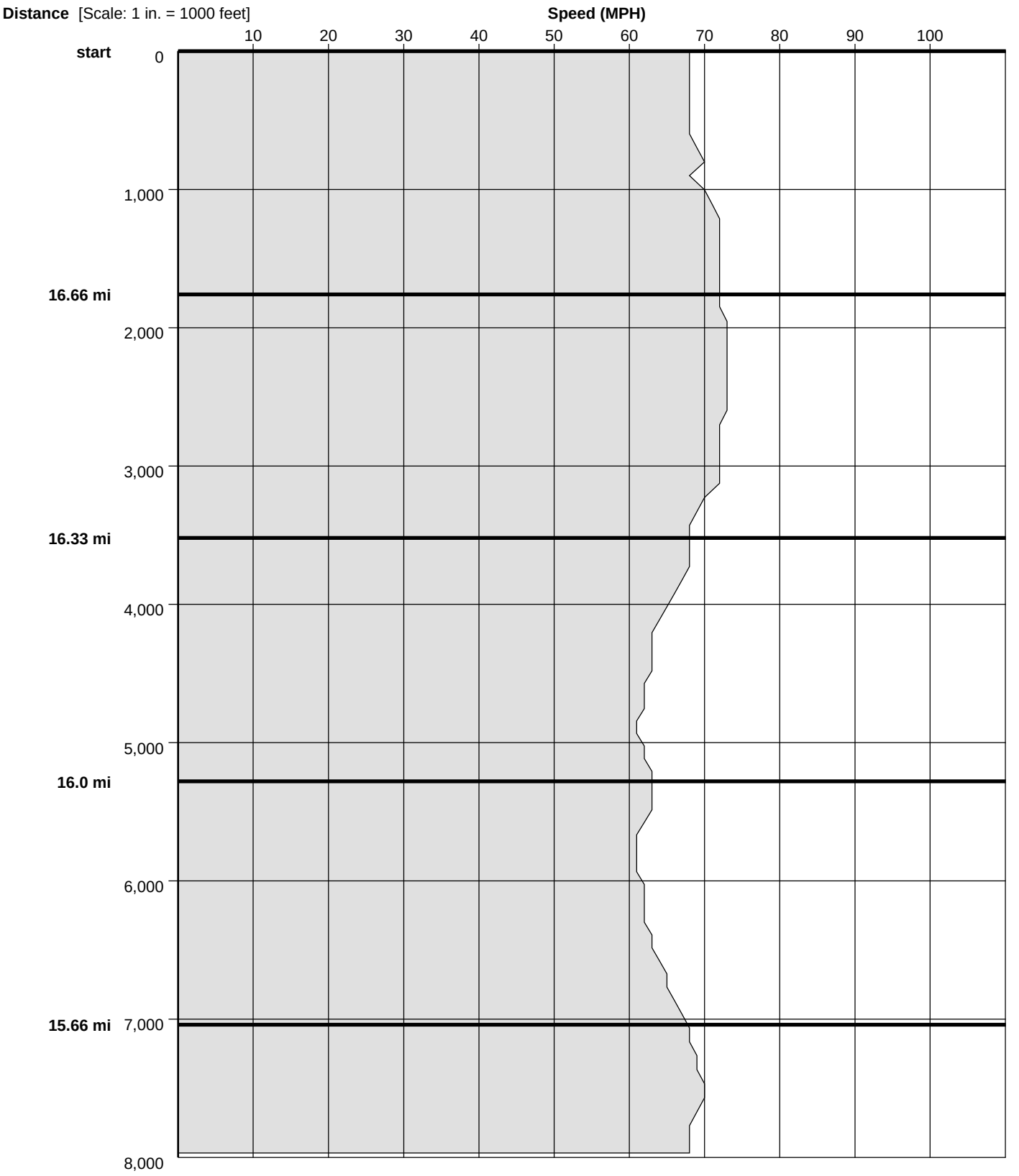
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 6**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

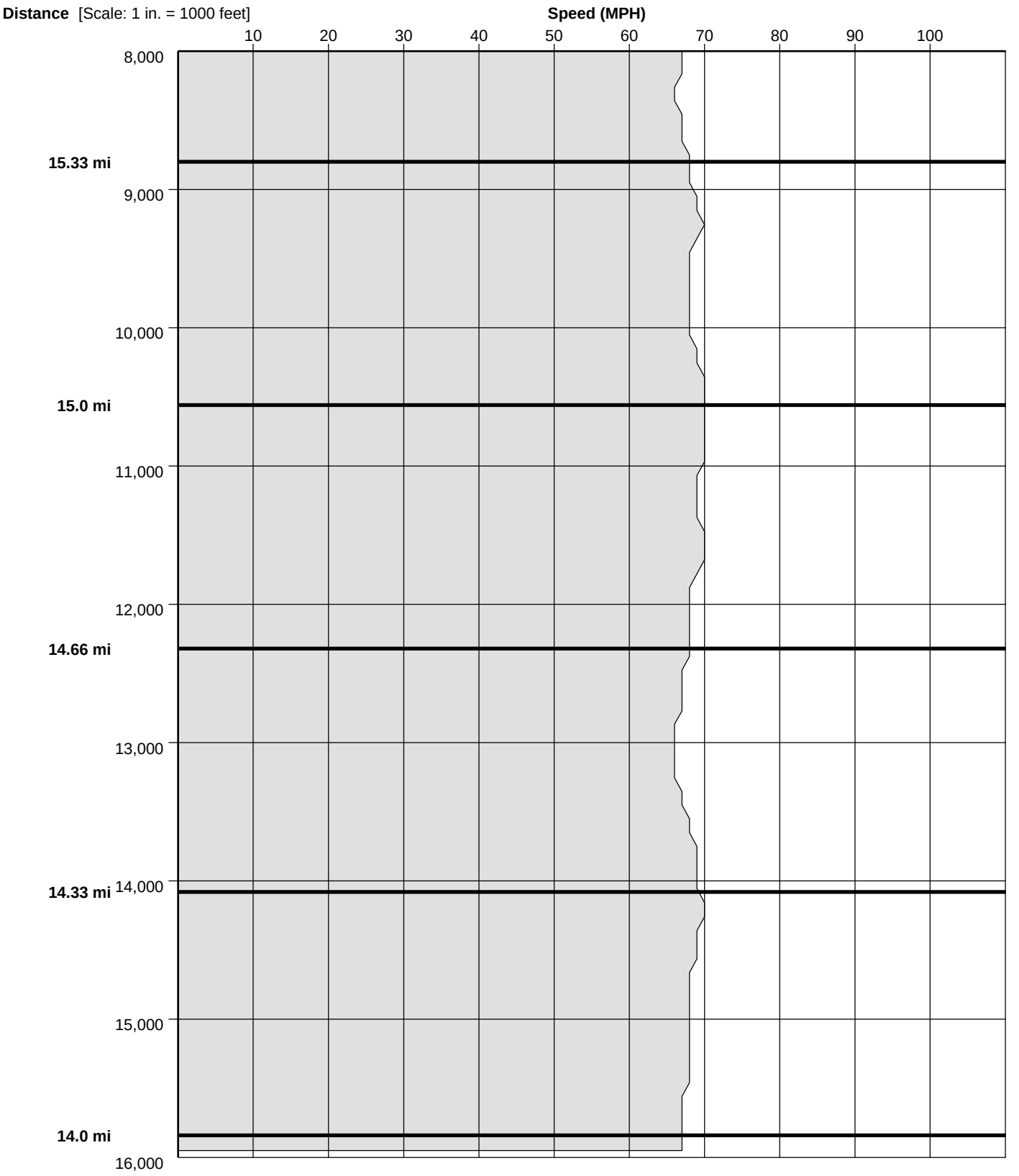
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 7**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

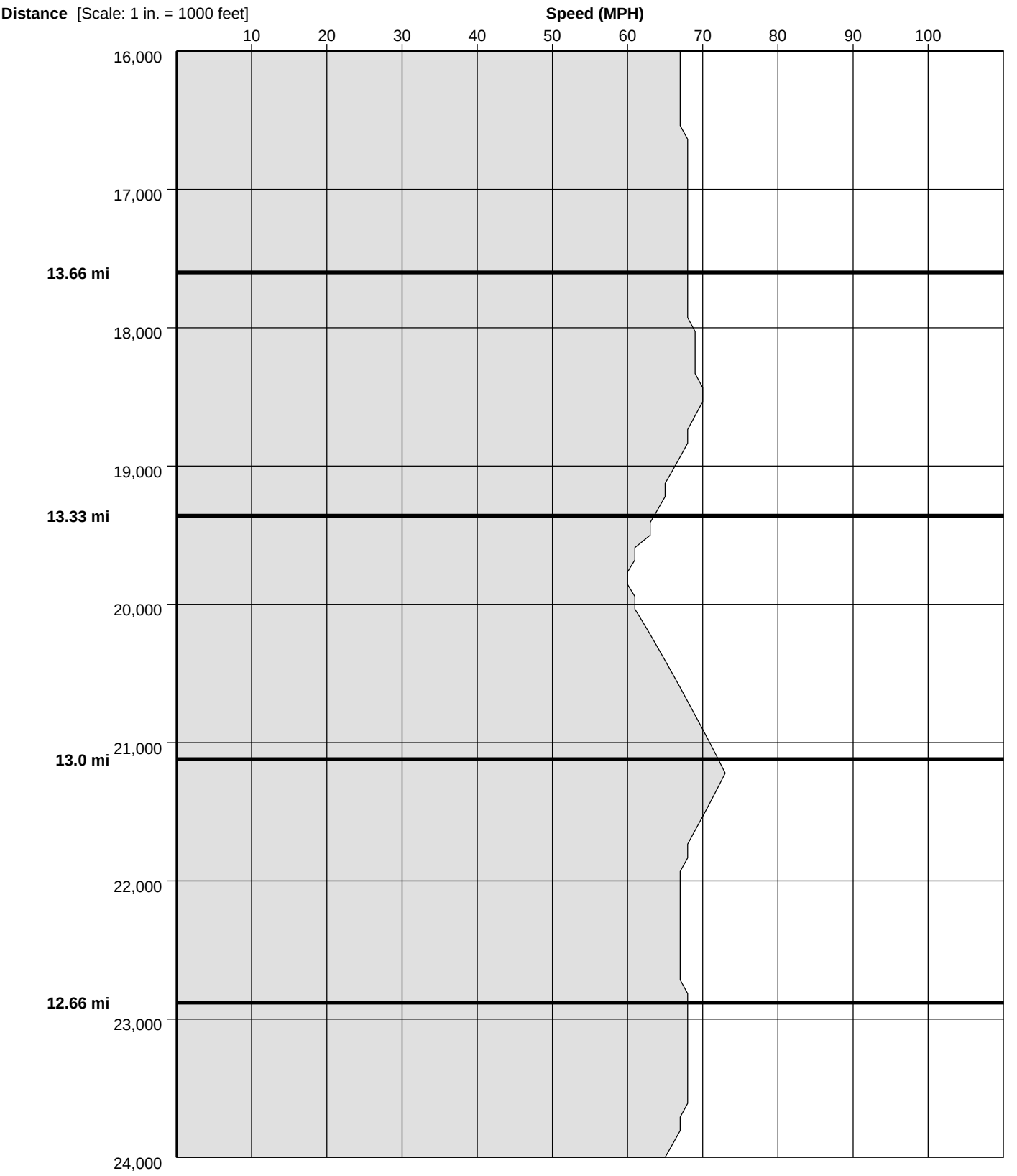
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 8**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

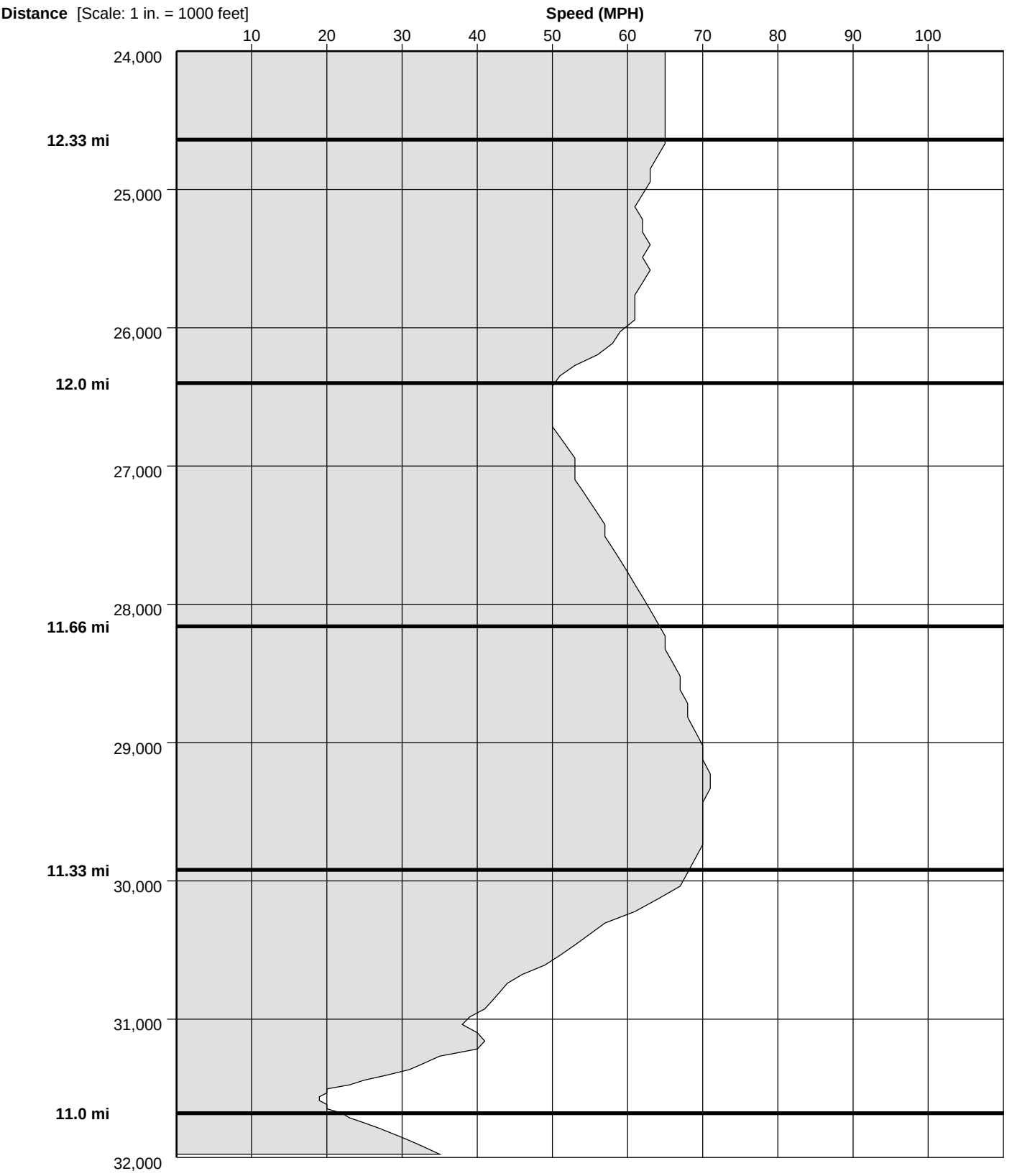
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 9**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

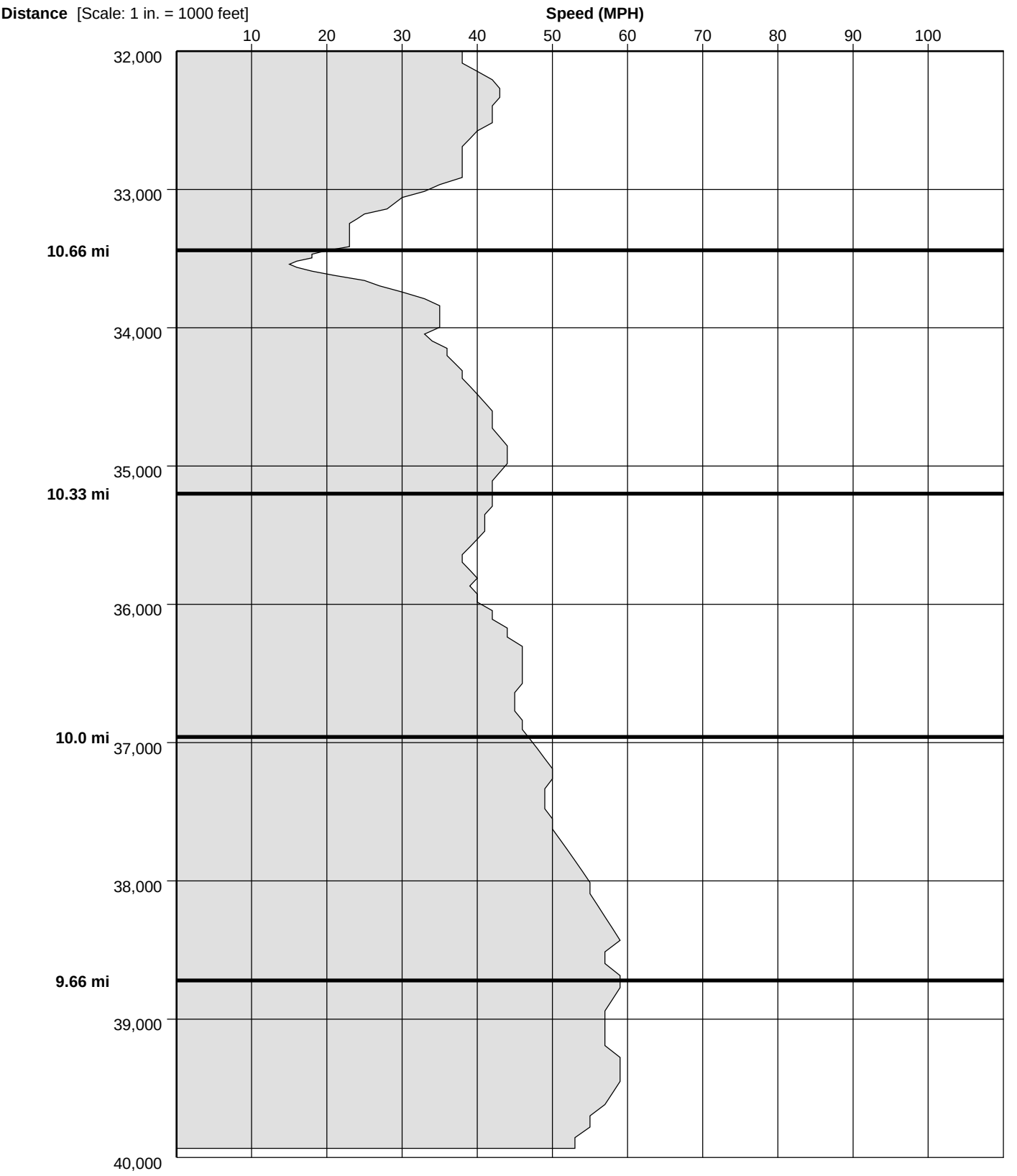
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 10**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

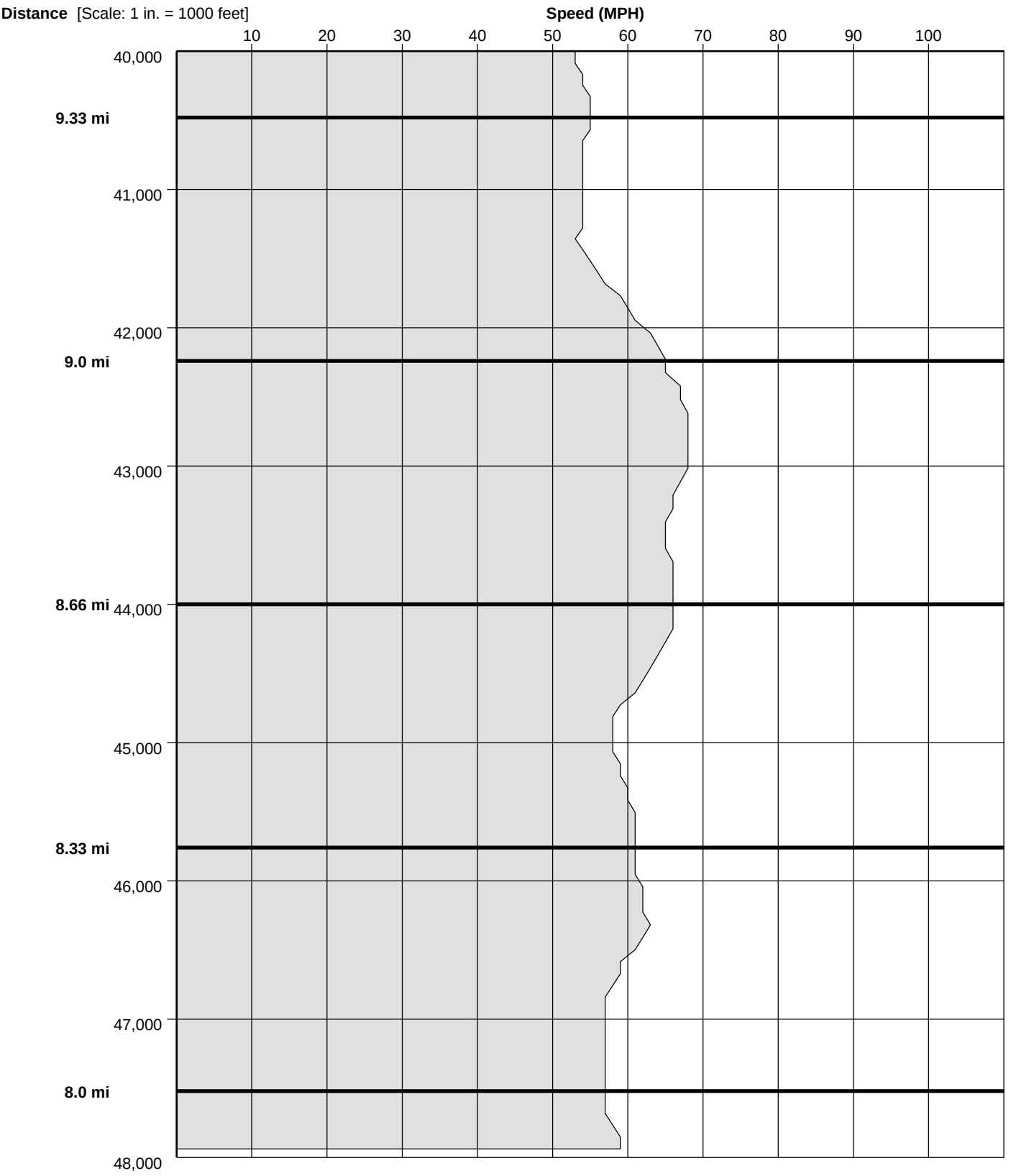
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 11**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 12**

Speed Profile

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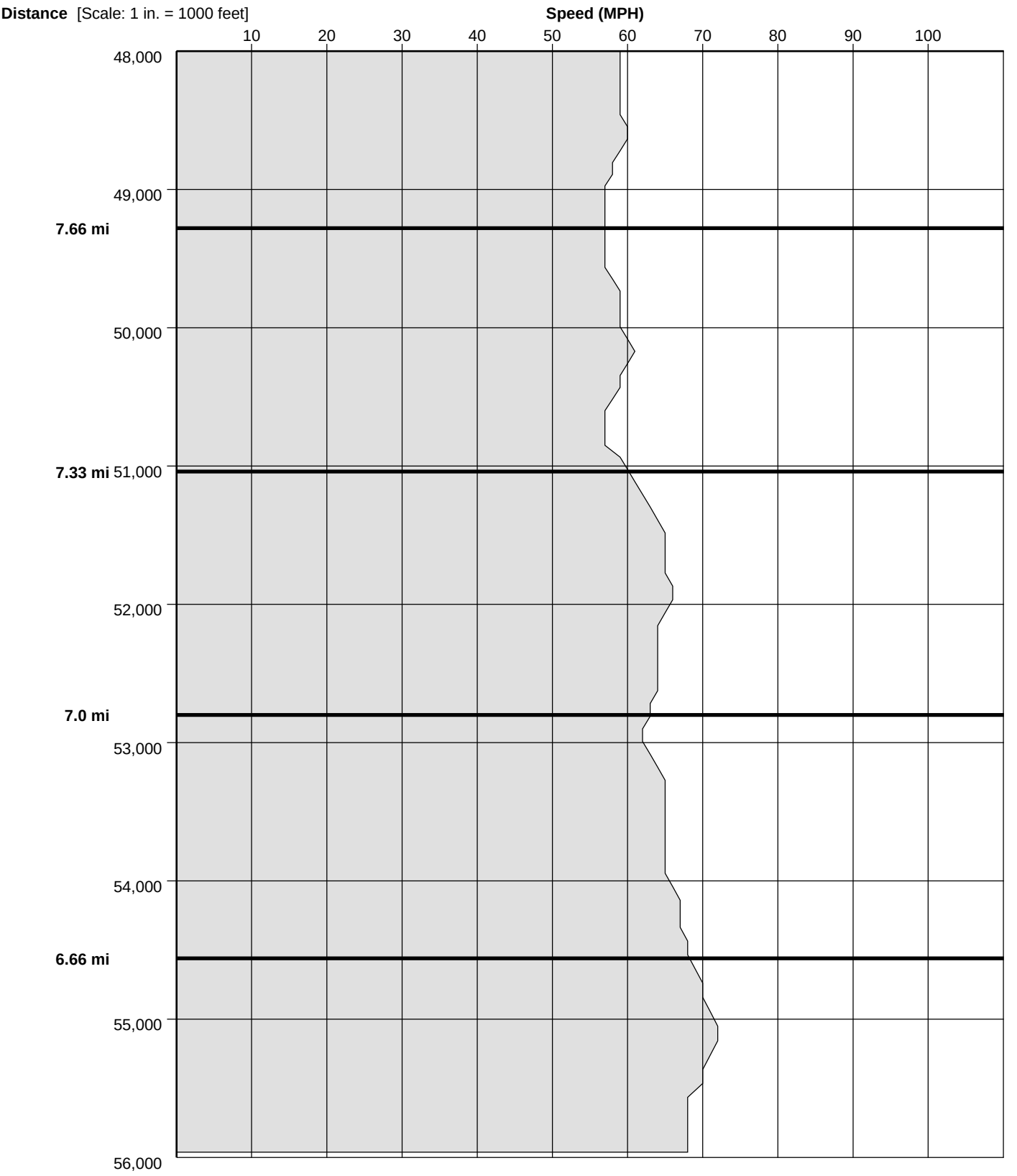


I-75 SB Hoyt

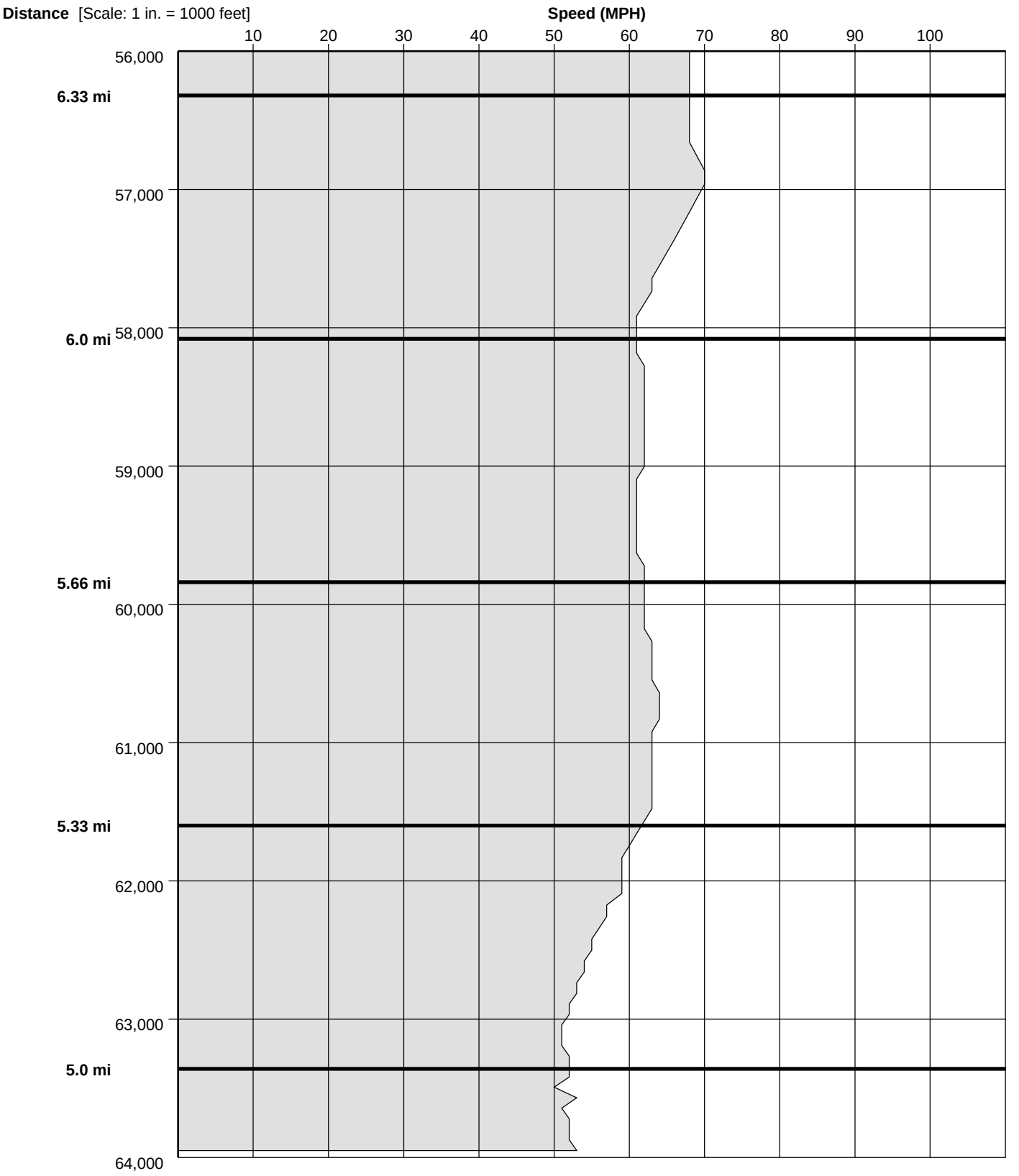
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 13**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 14**

Speed Profile

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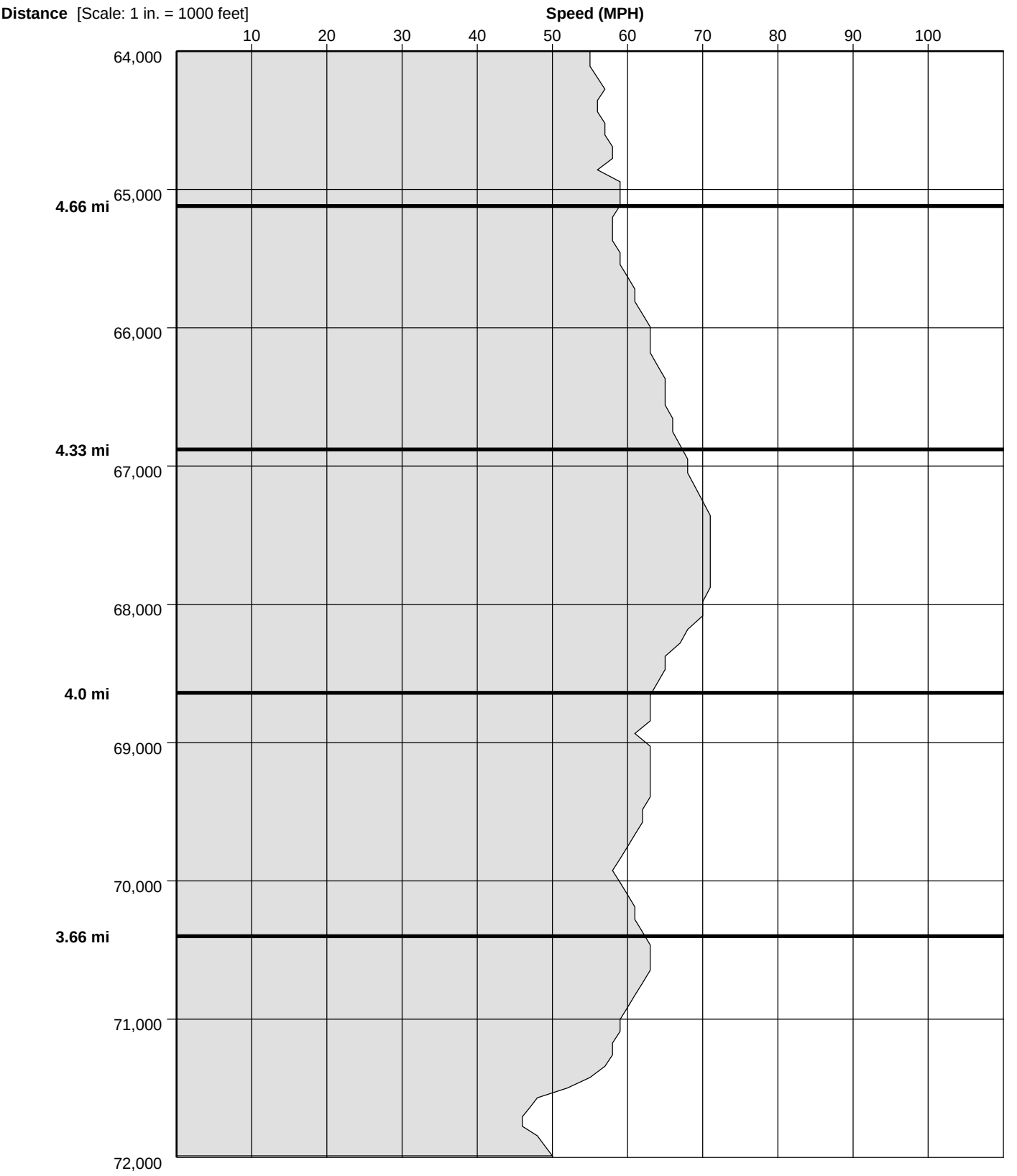

I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 15**

Speed Profile

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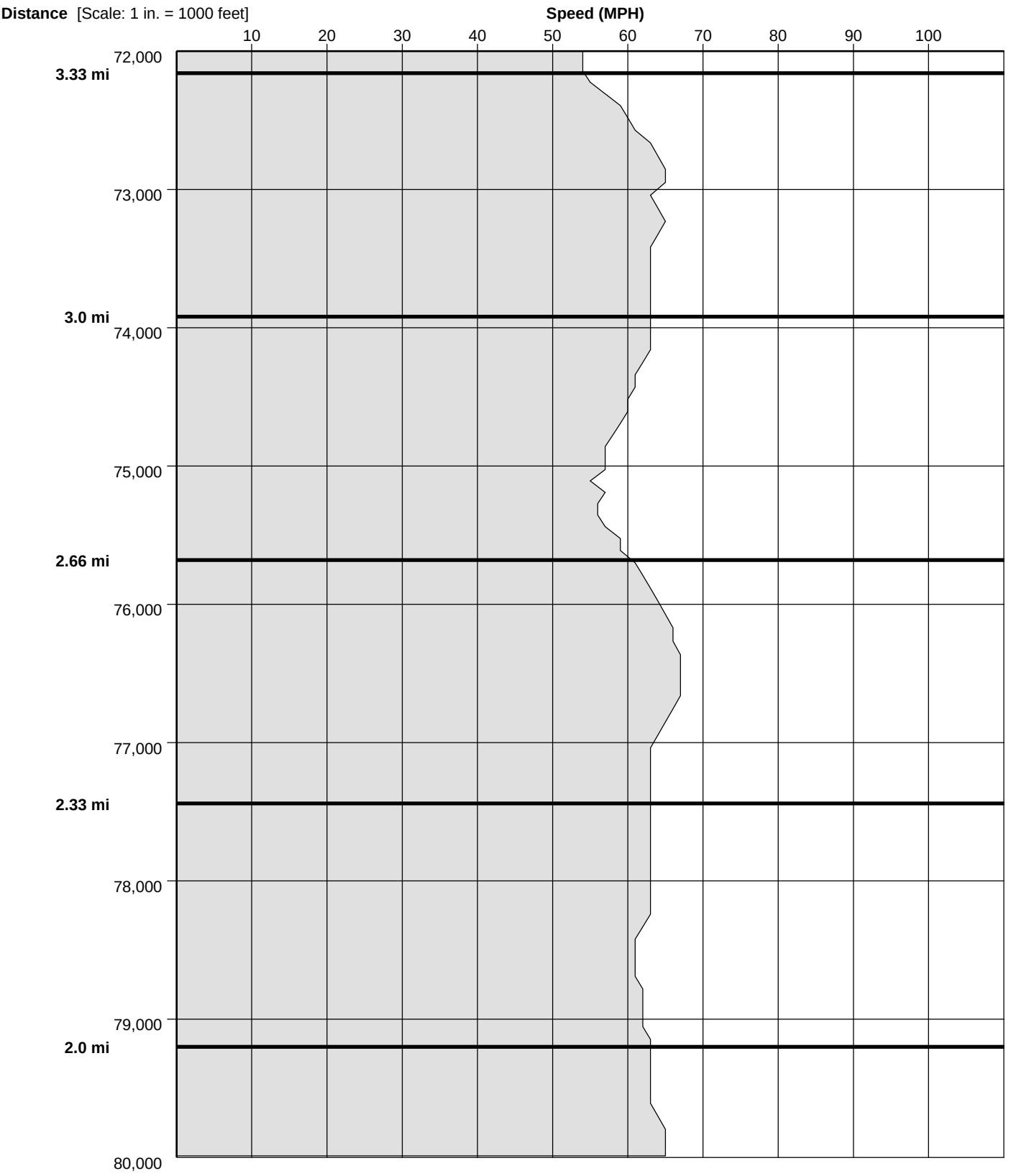


I-75 SB Hoyt

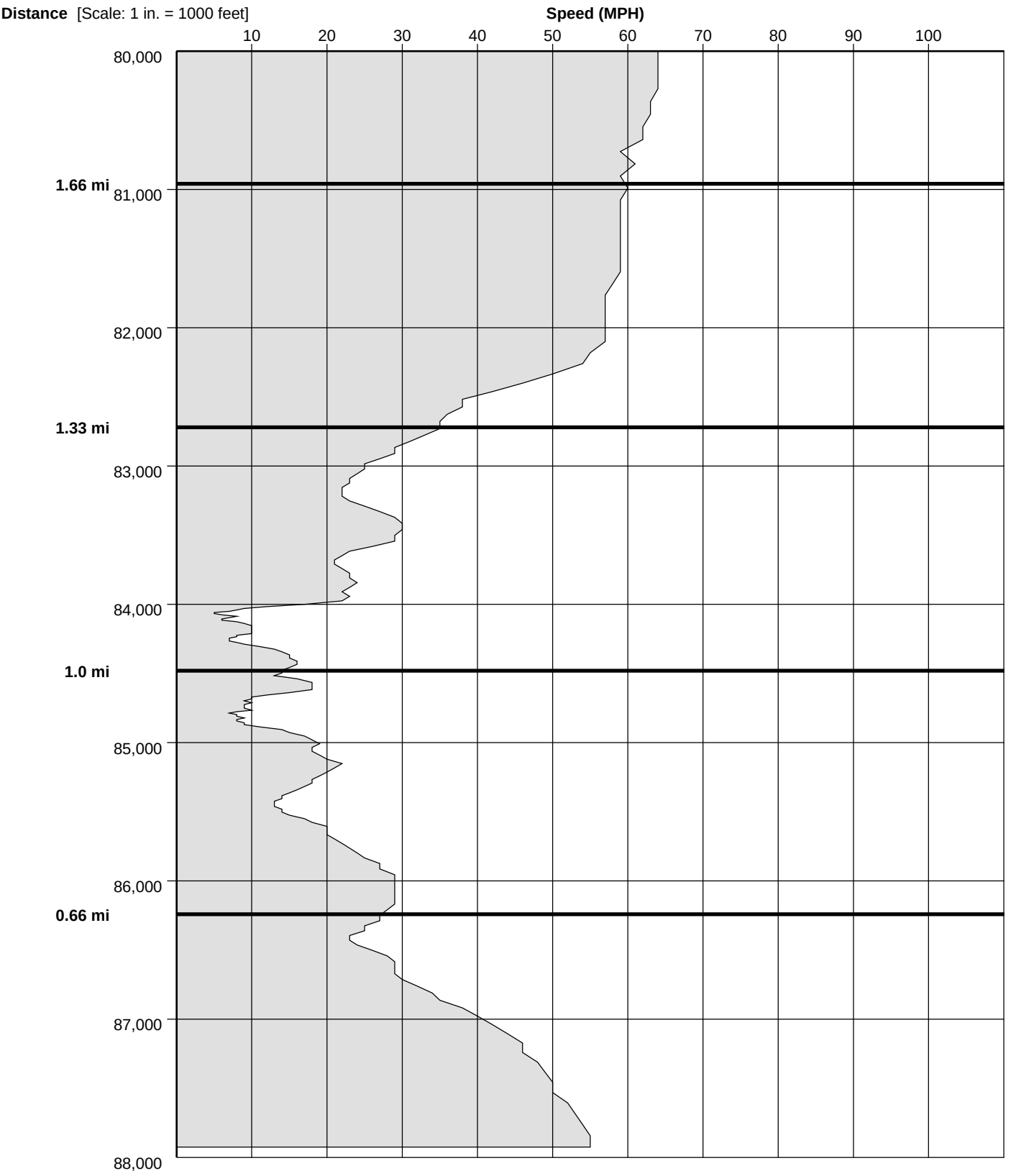
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 16**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

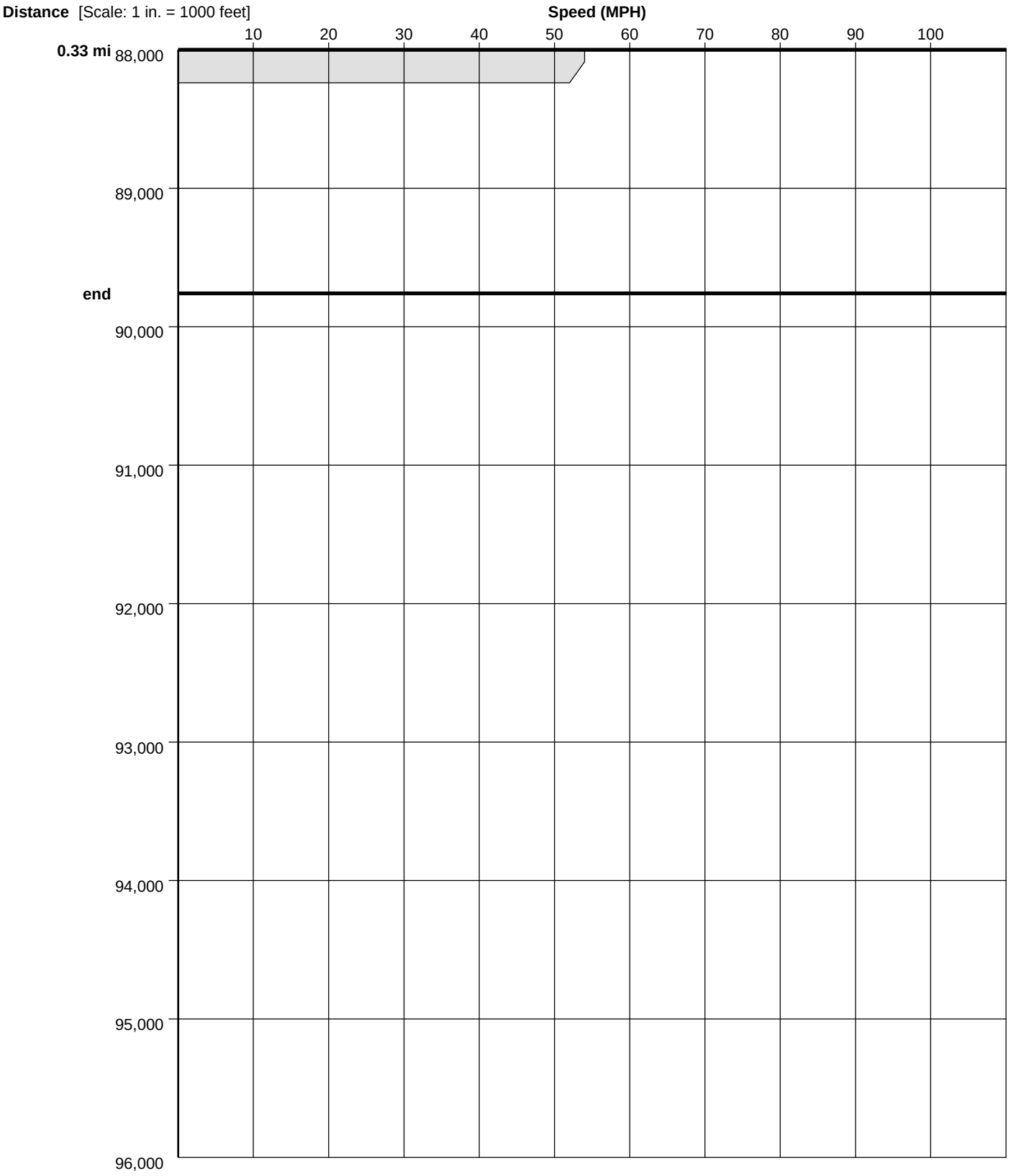
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 17**

Speed Profile

Run : I-75 SB-Hoyt-SB-001 Start Time: 15:56 (This is a Before Run)



I-75 SB Hoyt

12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 18**

Speed Profile

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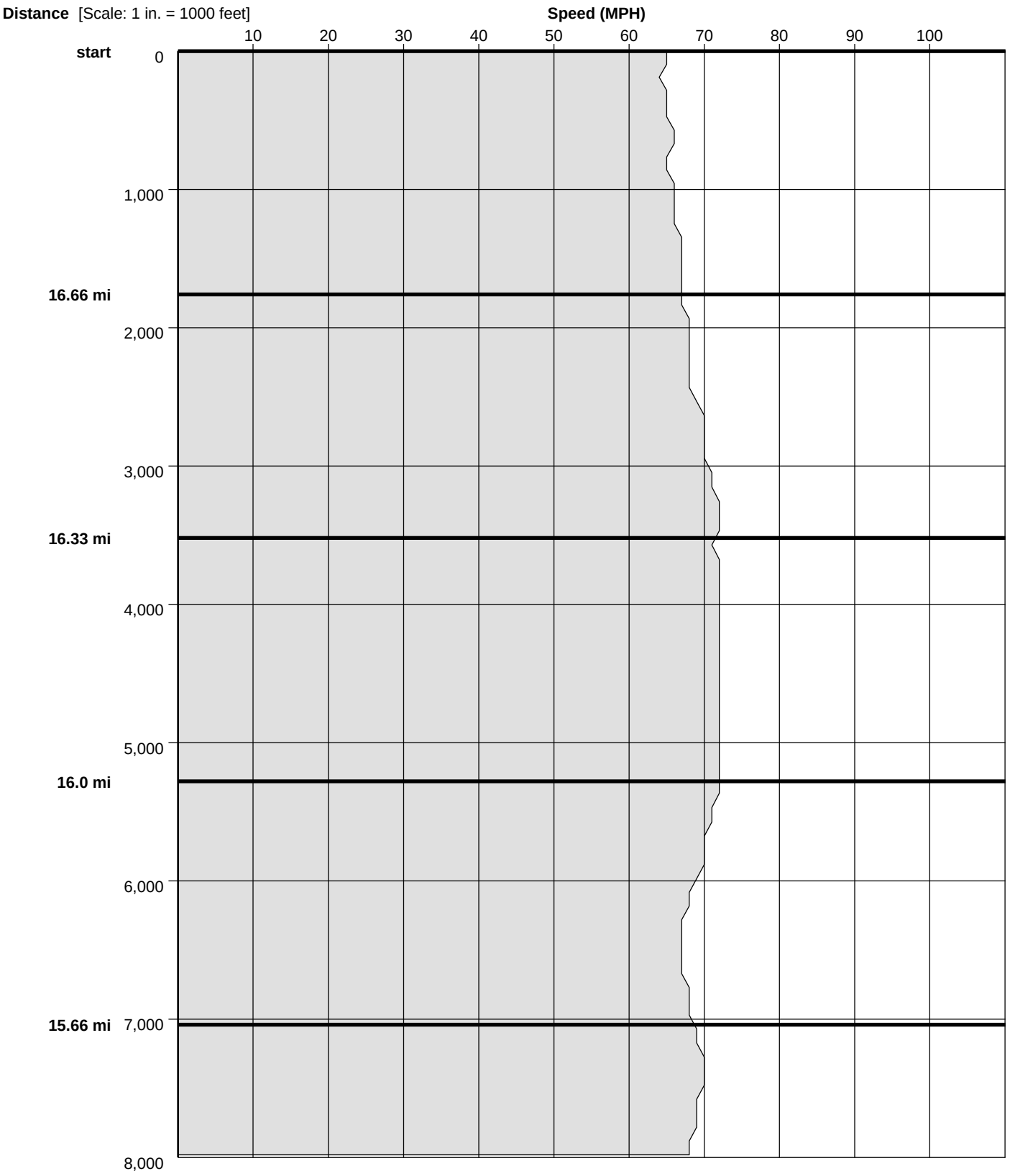


I-75 SB Hoyt

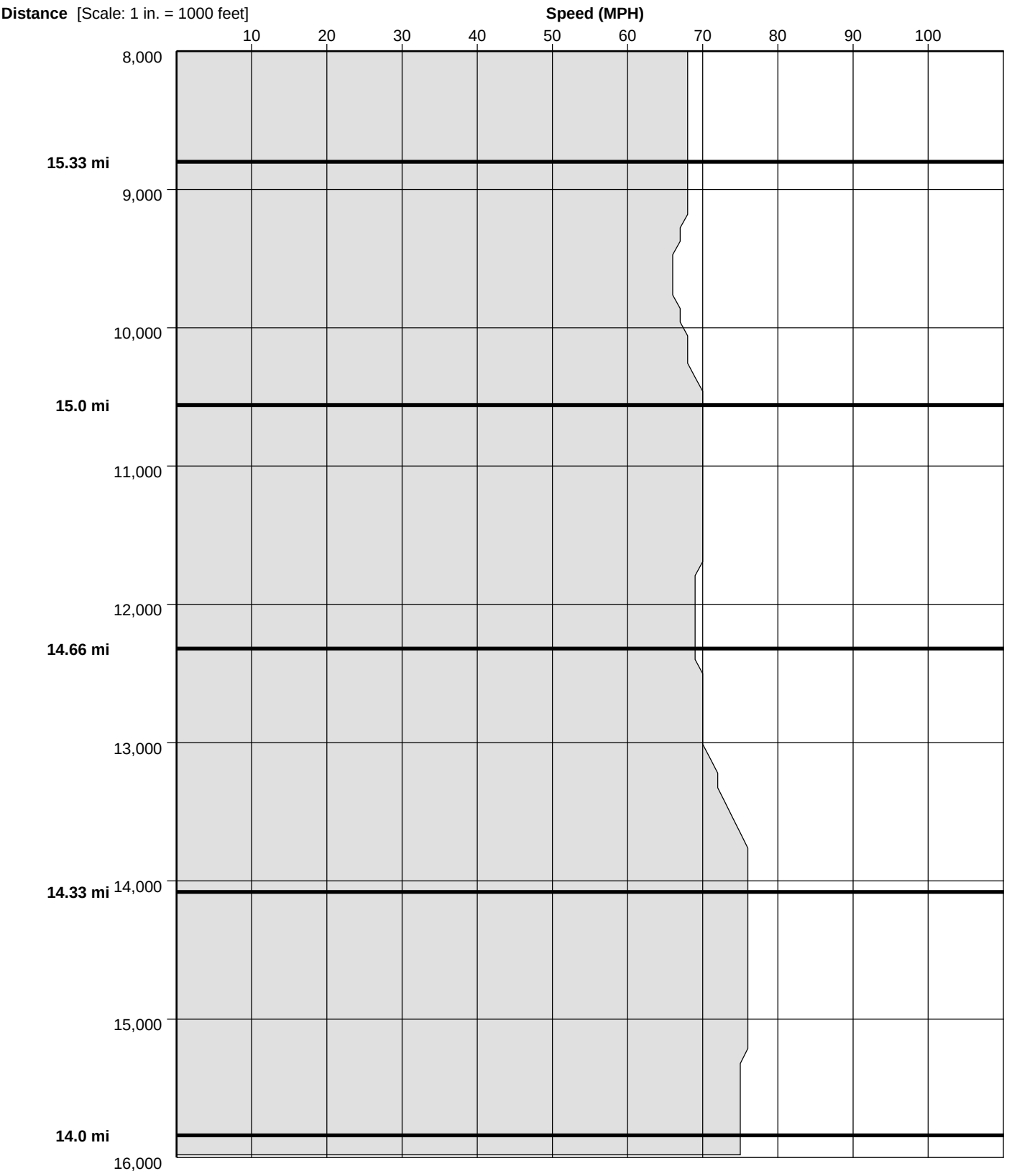
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 19**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

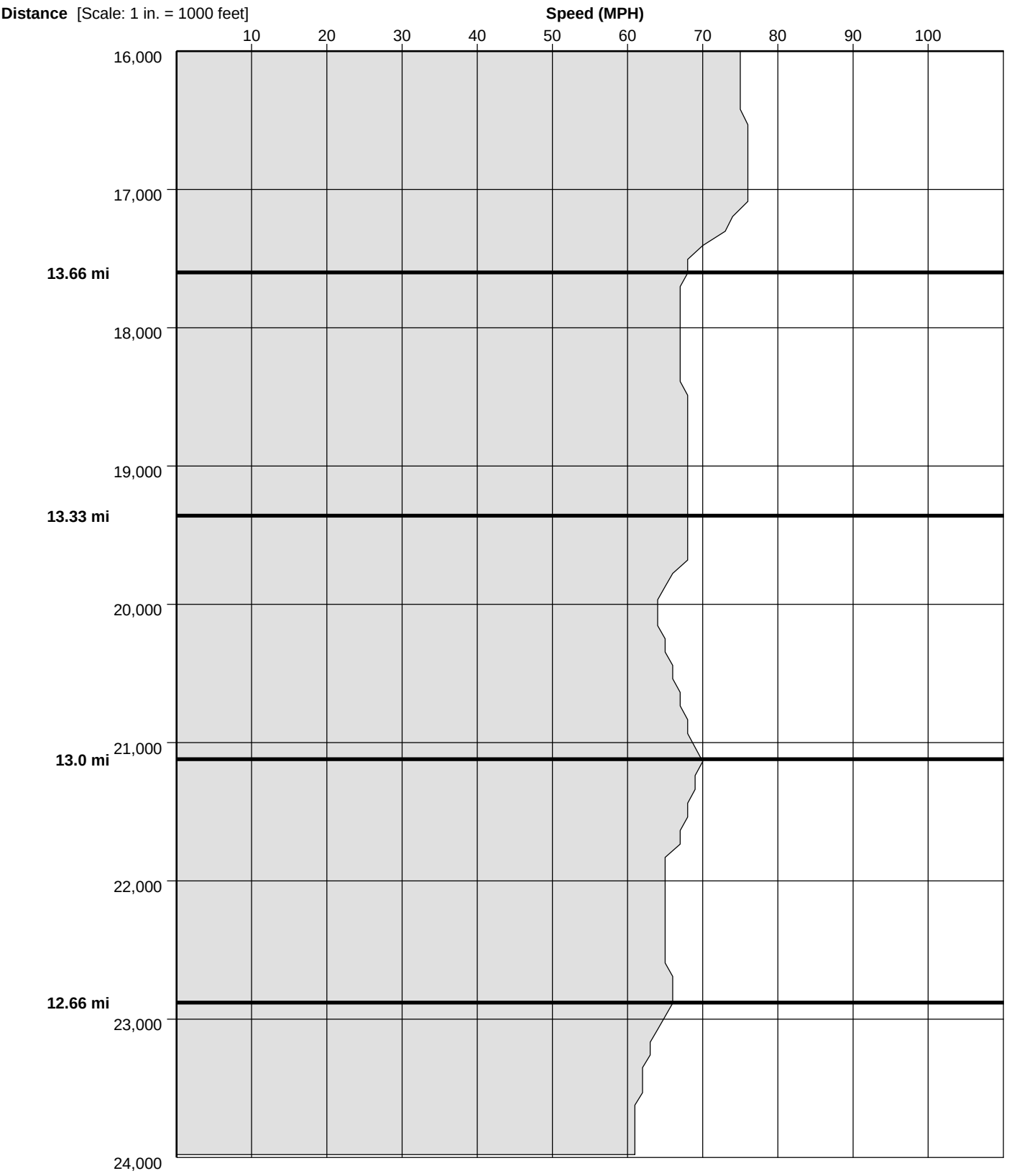
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 20**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

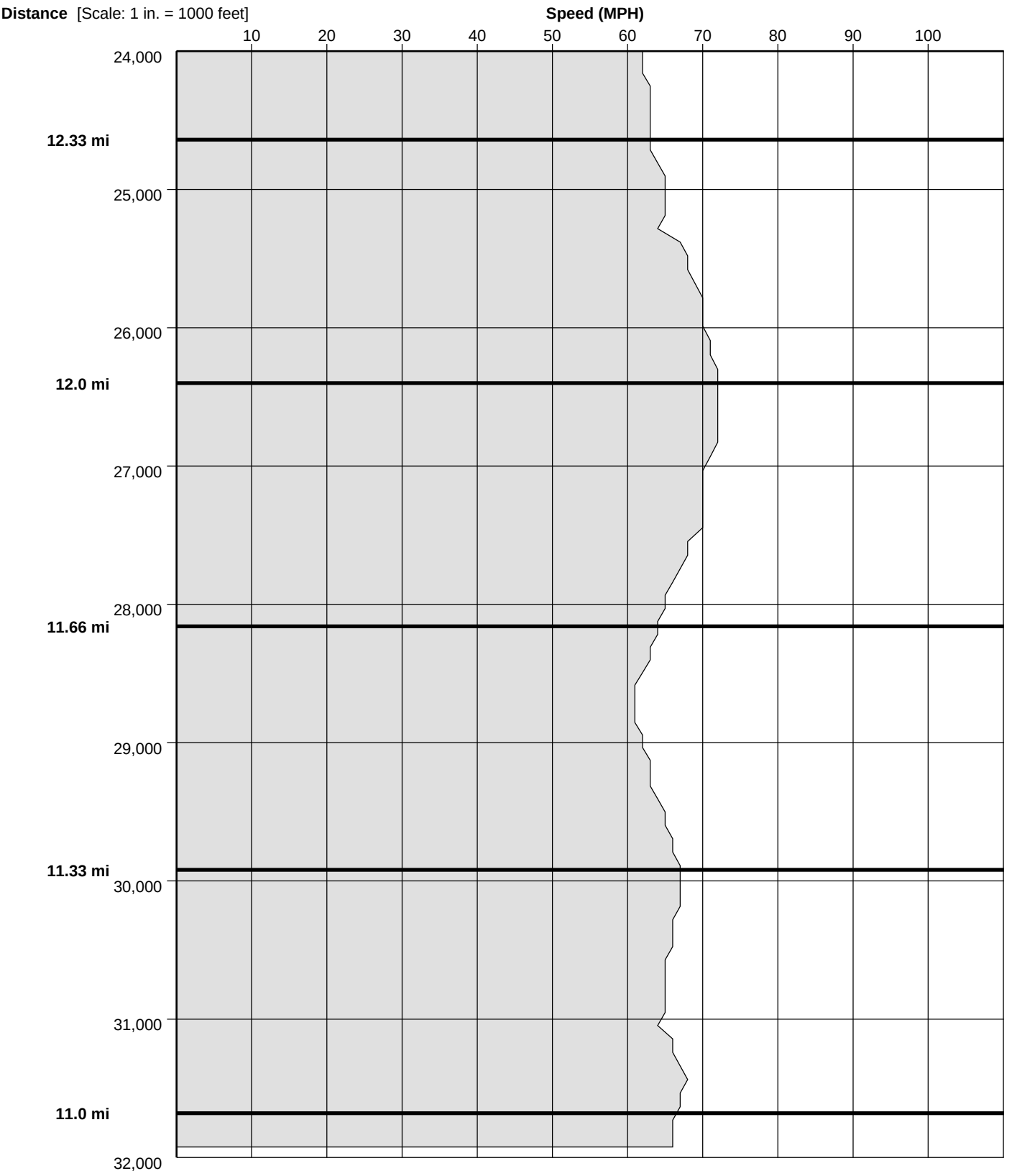
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 21**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

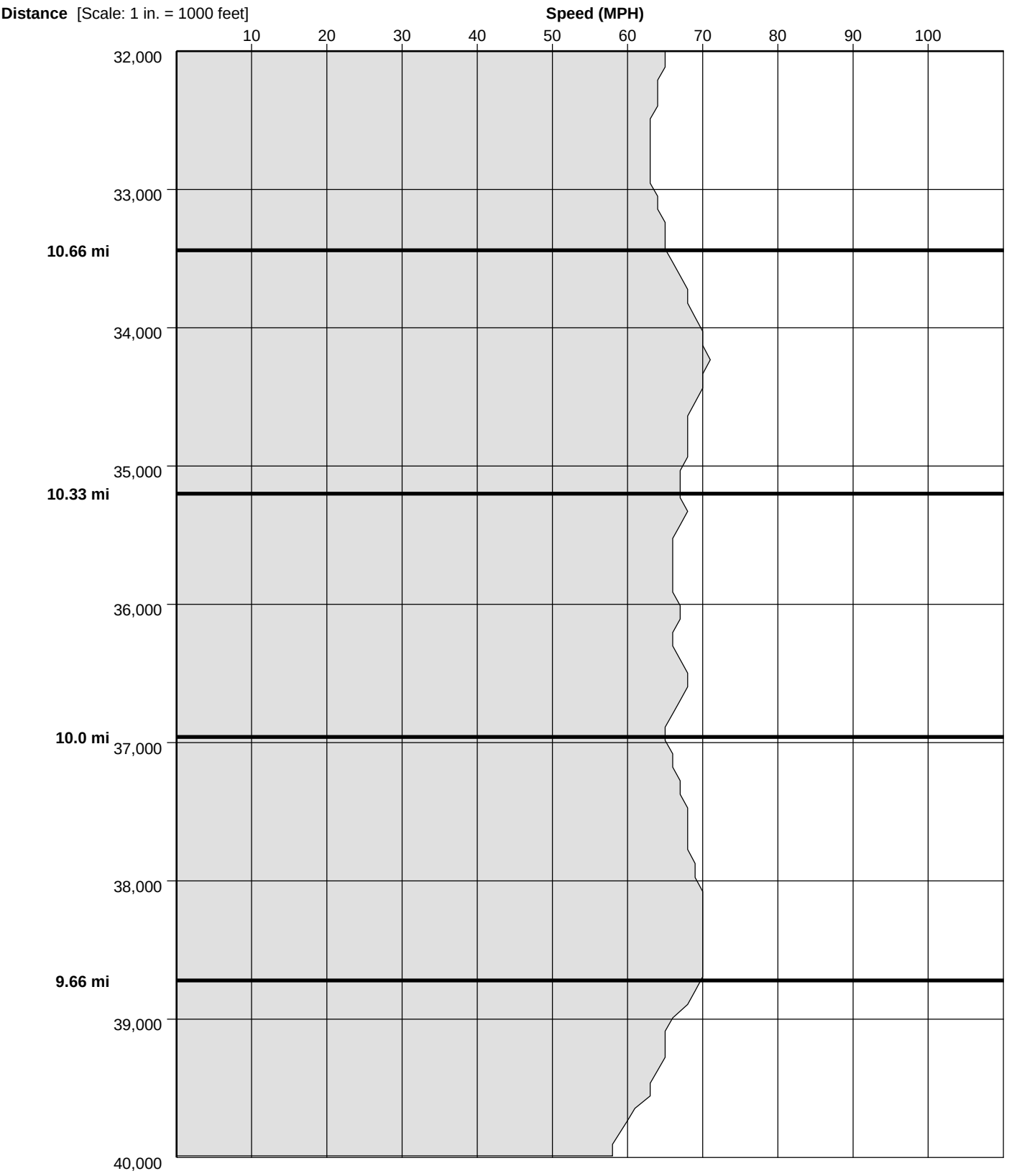
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 22**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

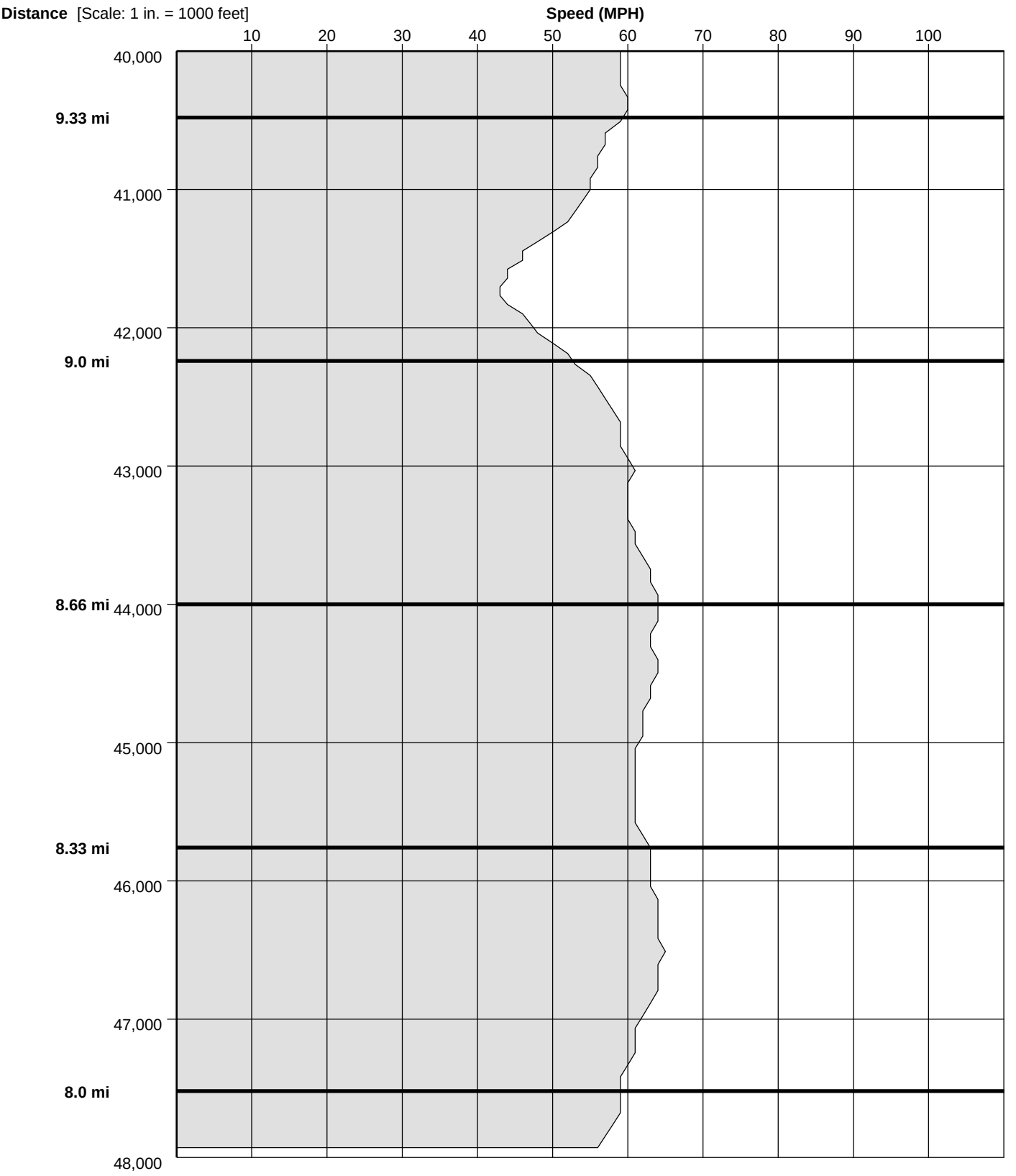
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 23**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

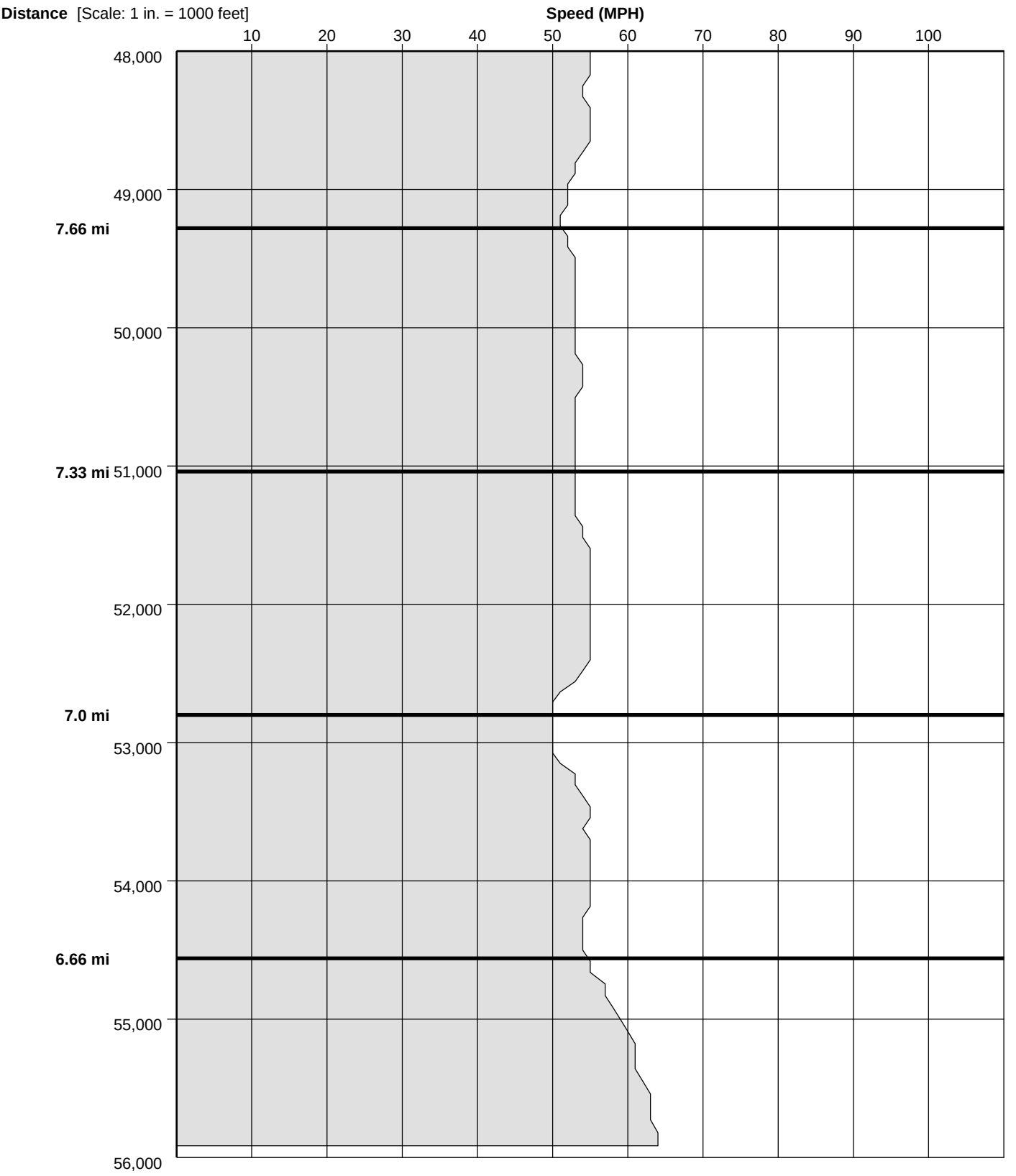
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 24**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

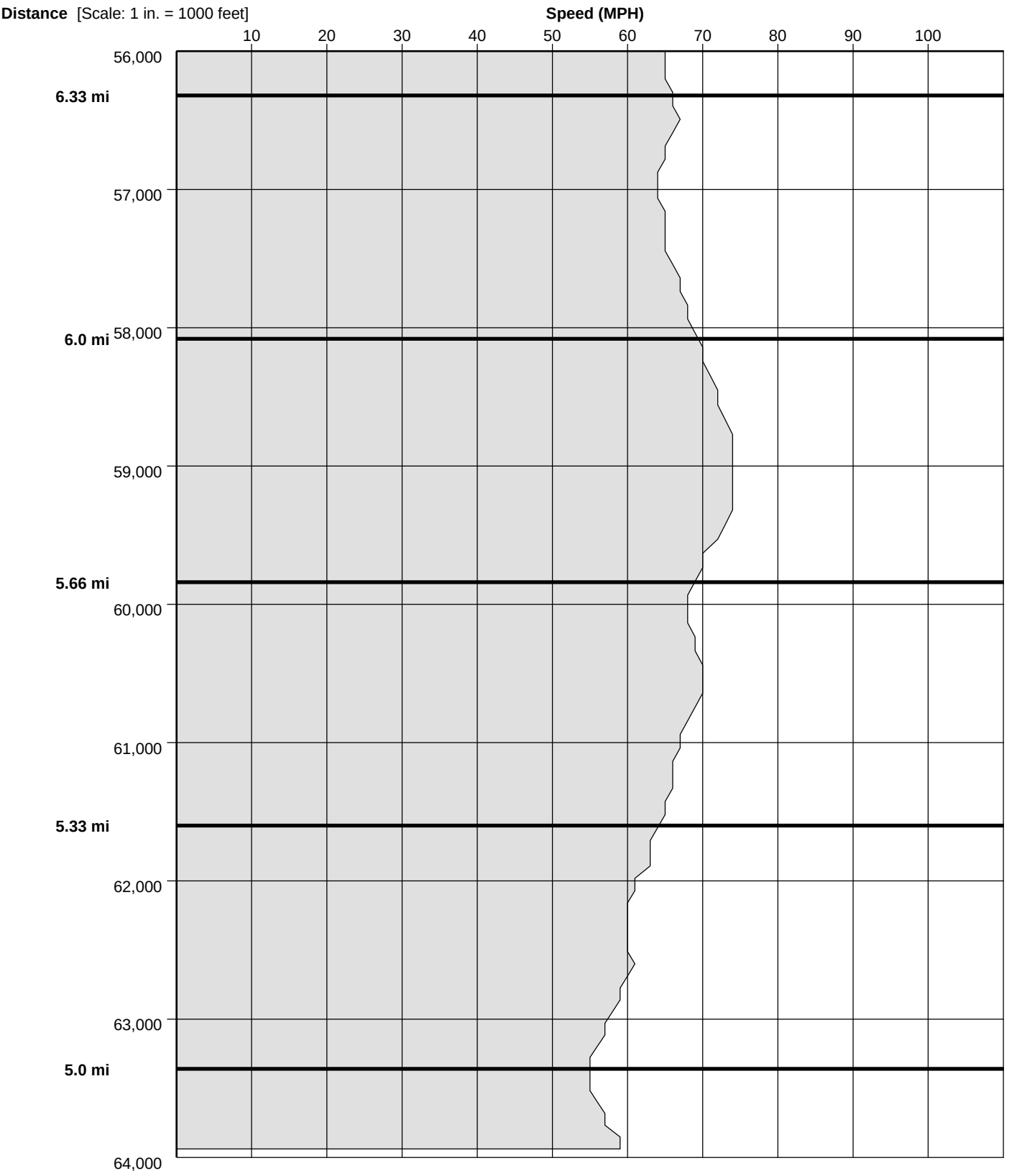
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 25**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

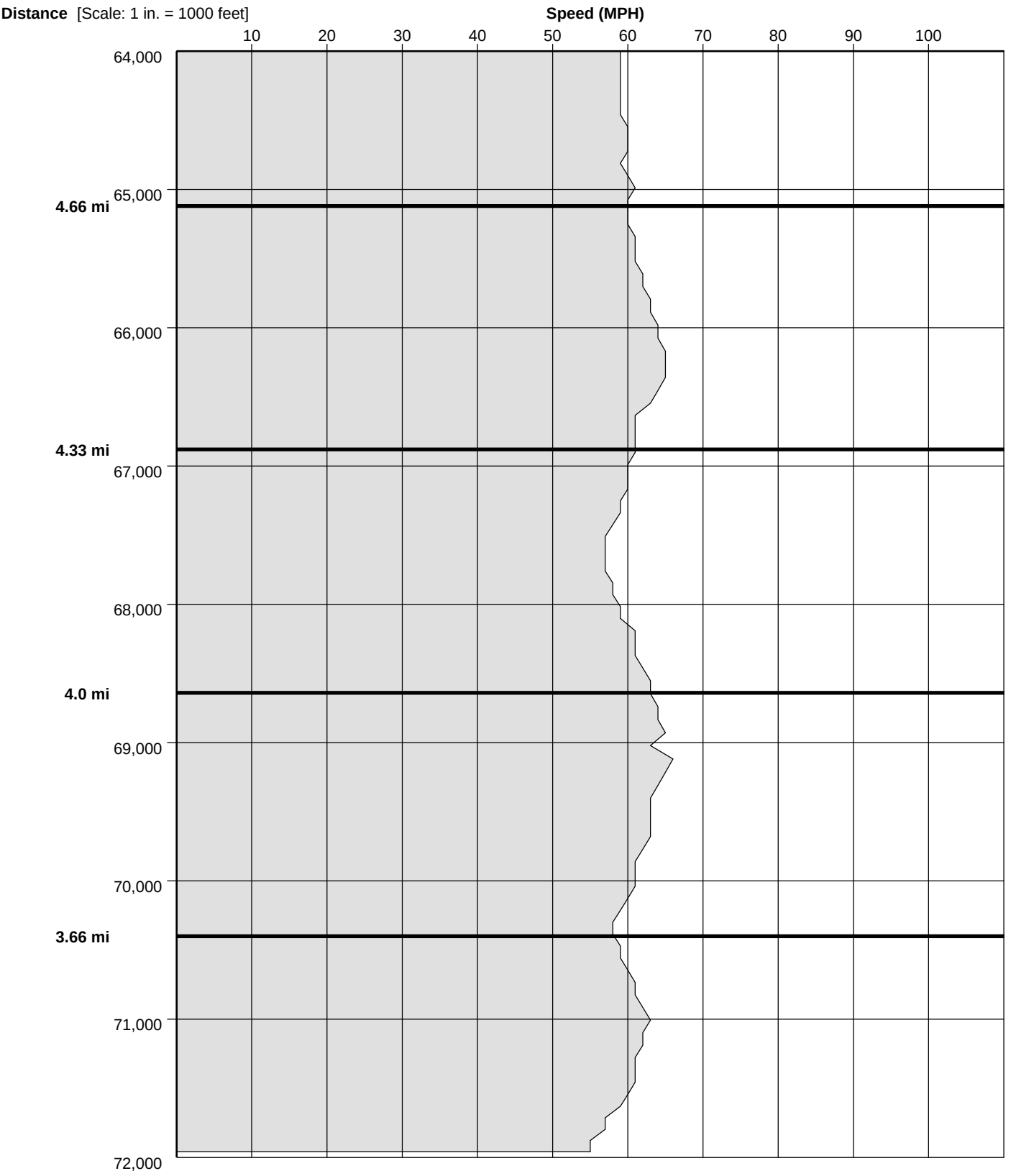
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 26**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

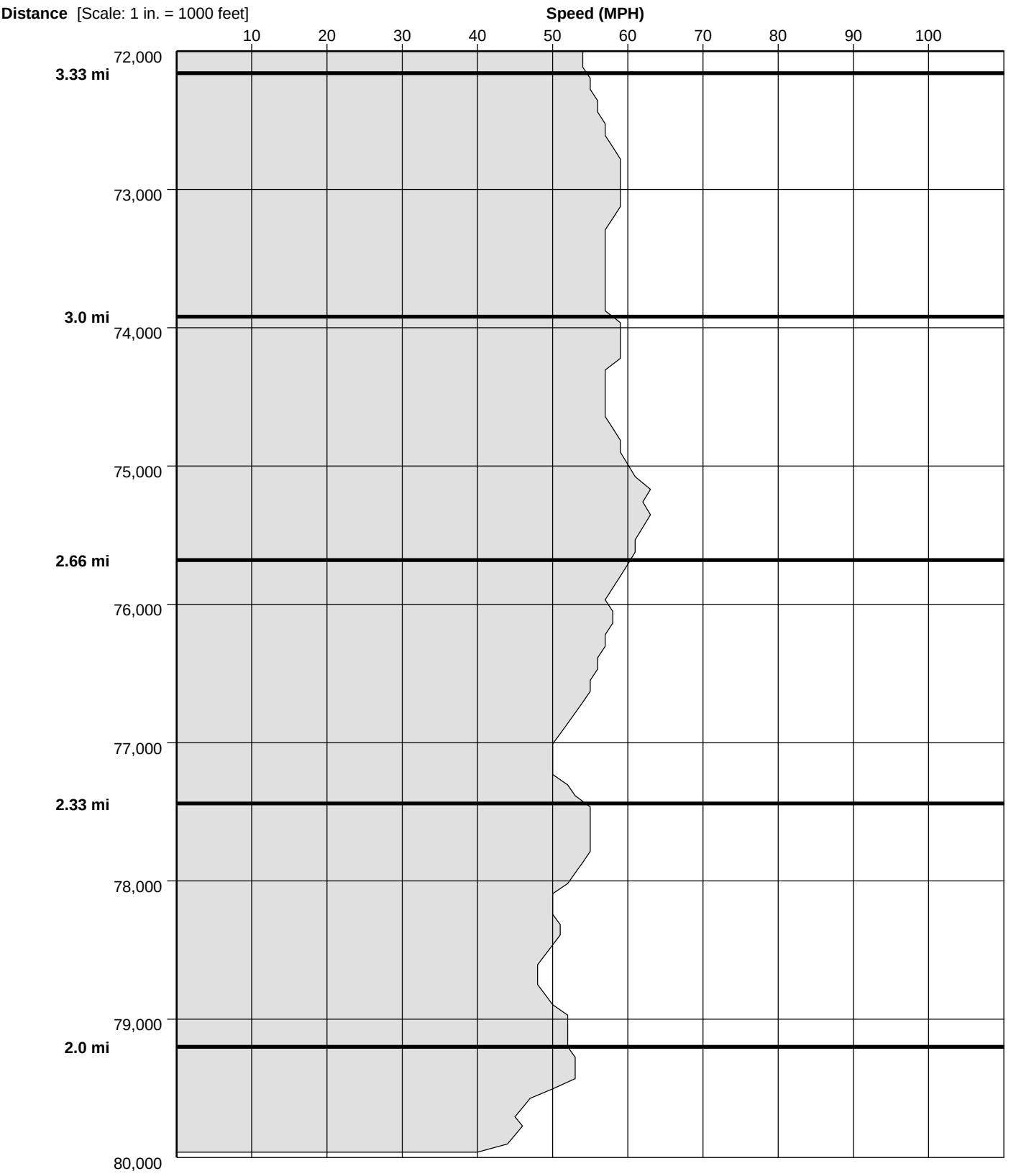
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 27**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

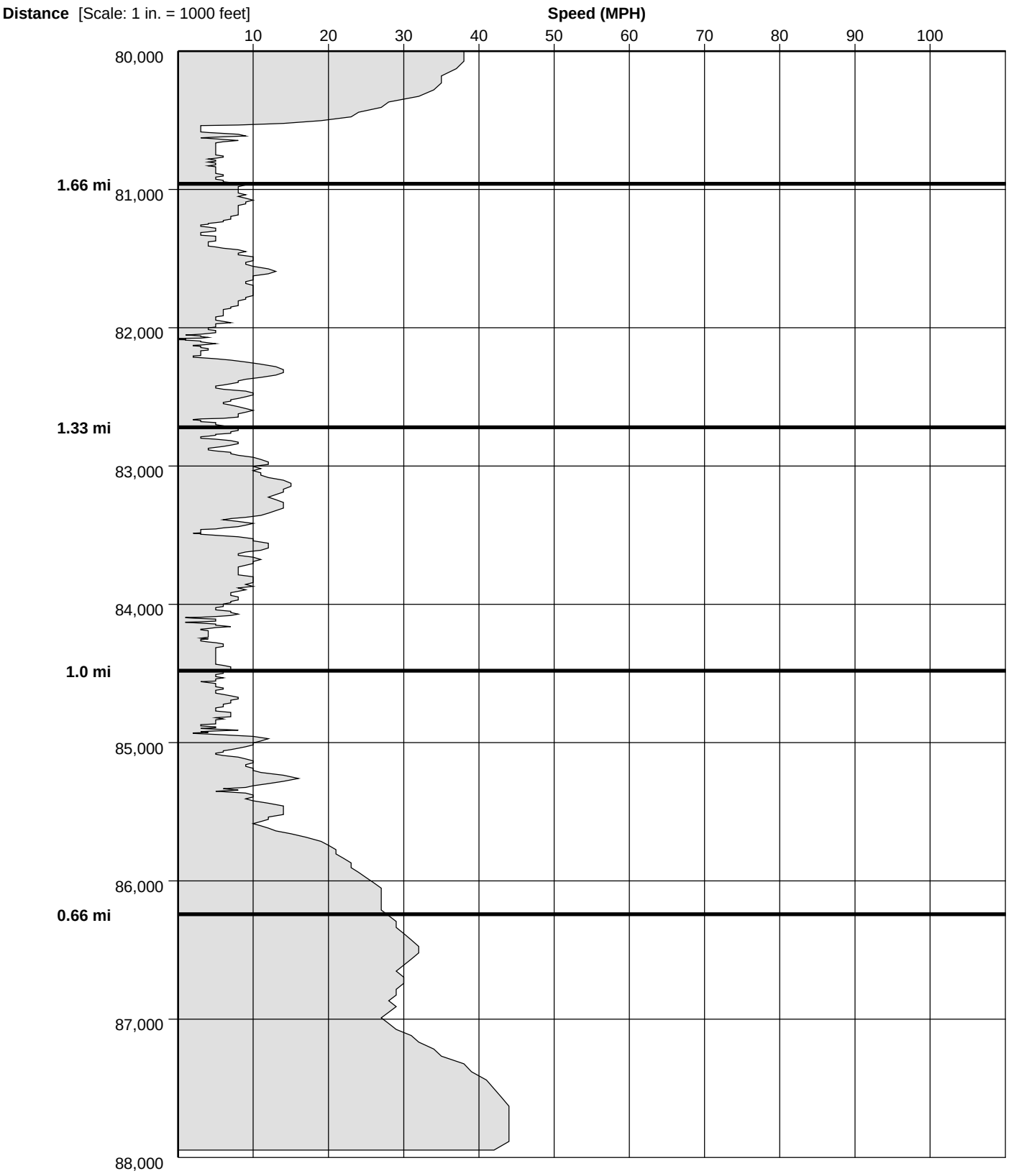
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 28**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

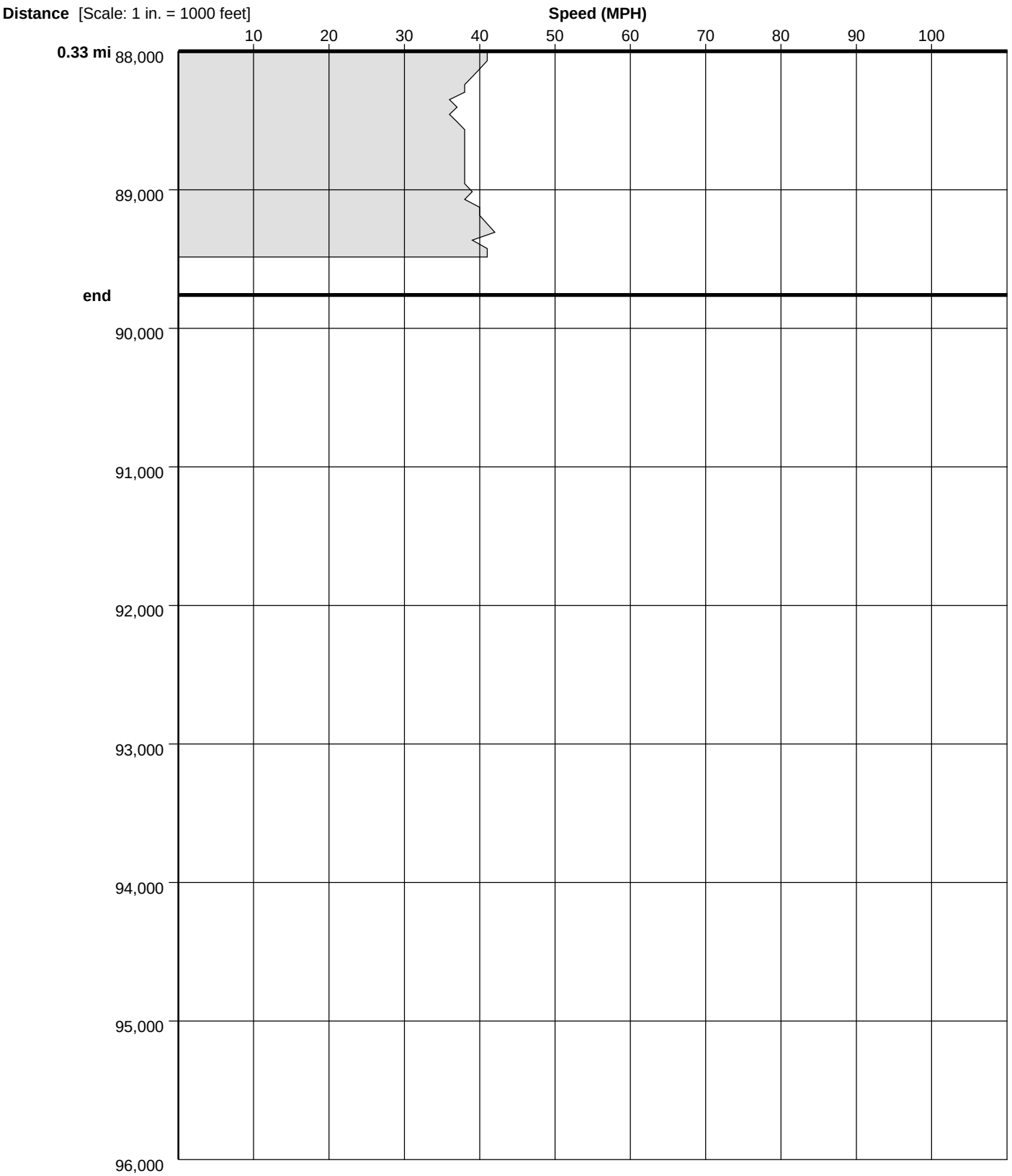
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 29**

Speed Profile

Run : I-75 SB-Hoyt-SB-002 Start Time: 16:53 (This is a Before Run)



I-75 SB Hoyt

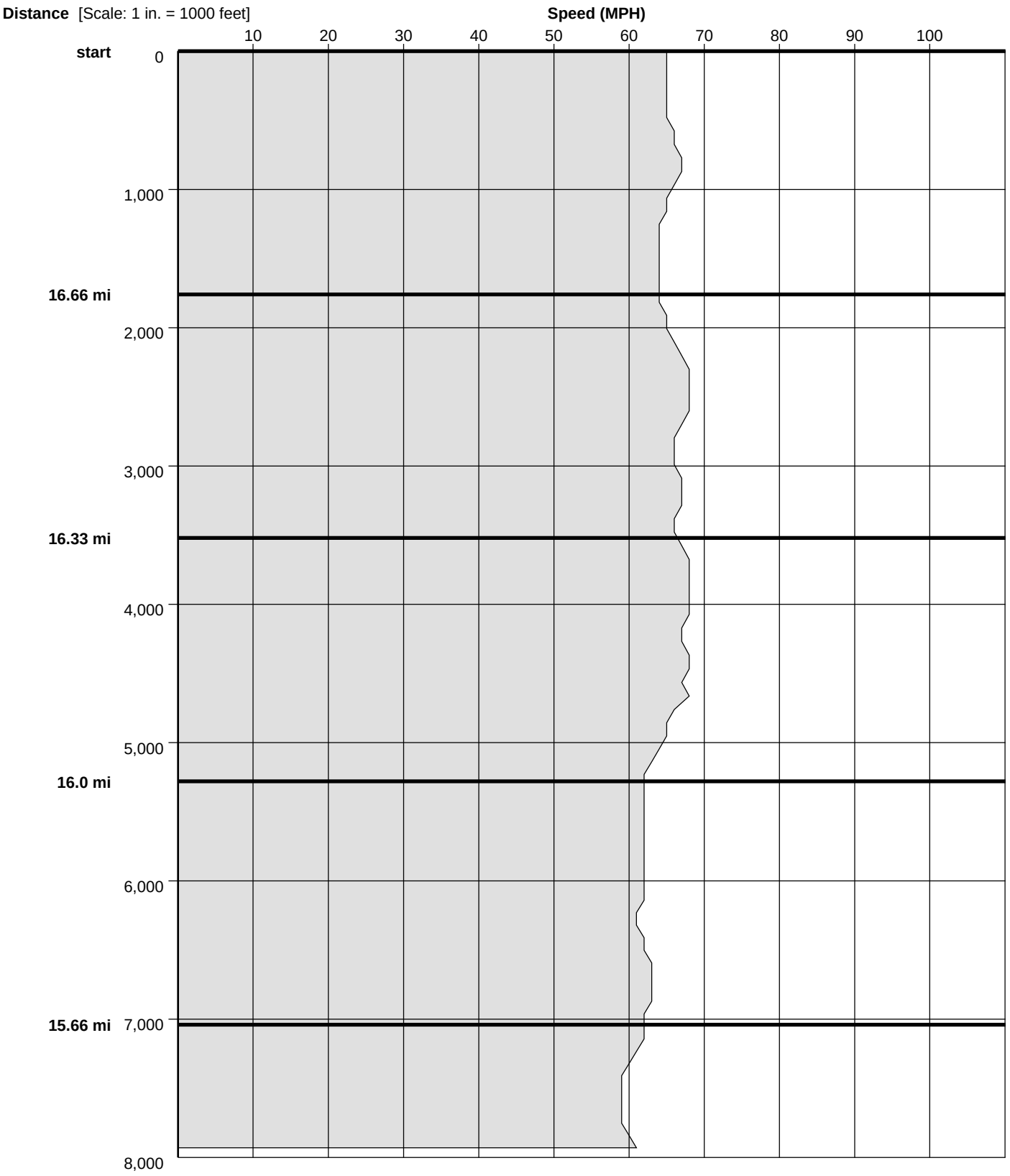
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 30**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

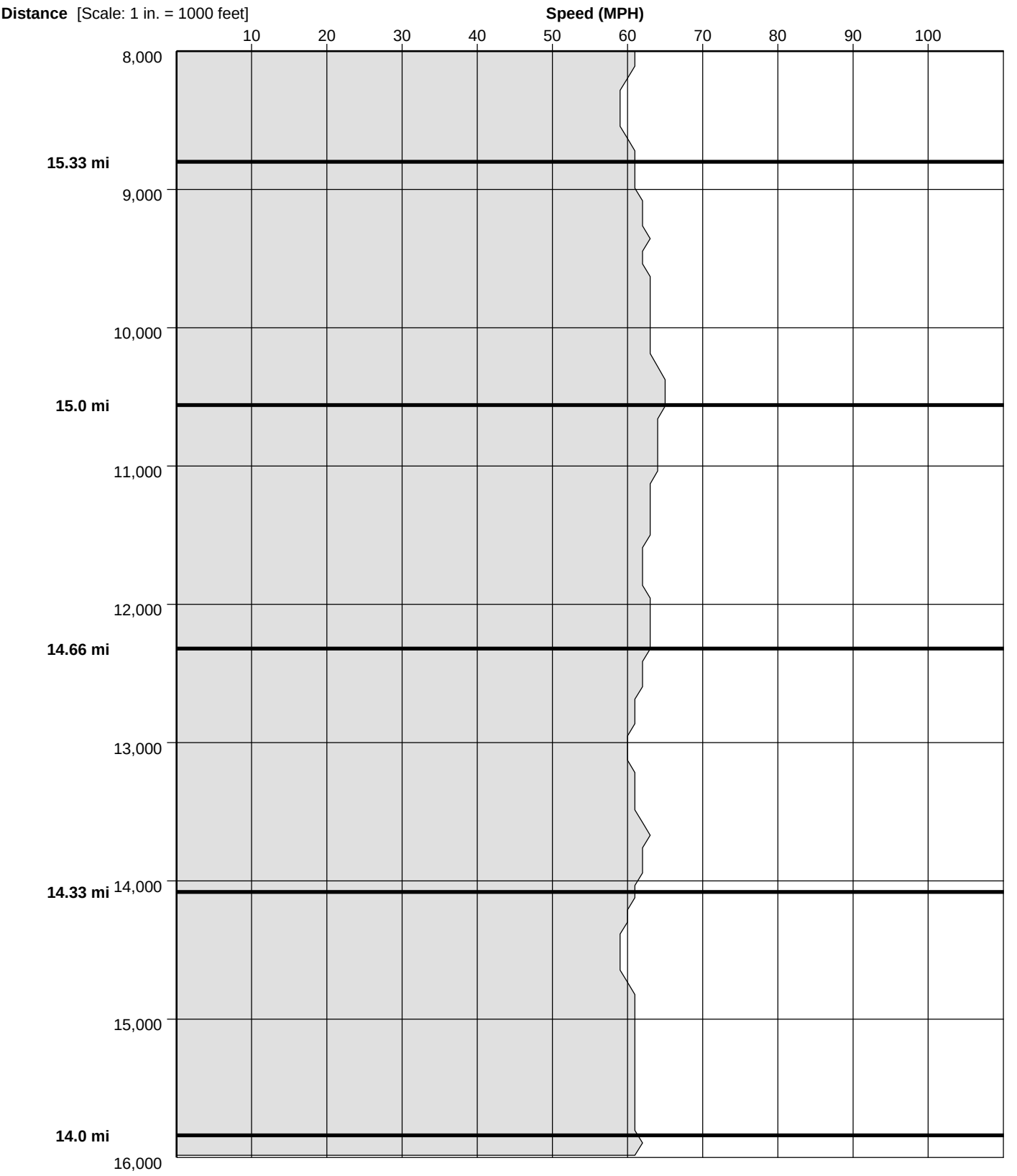
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 31**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

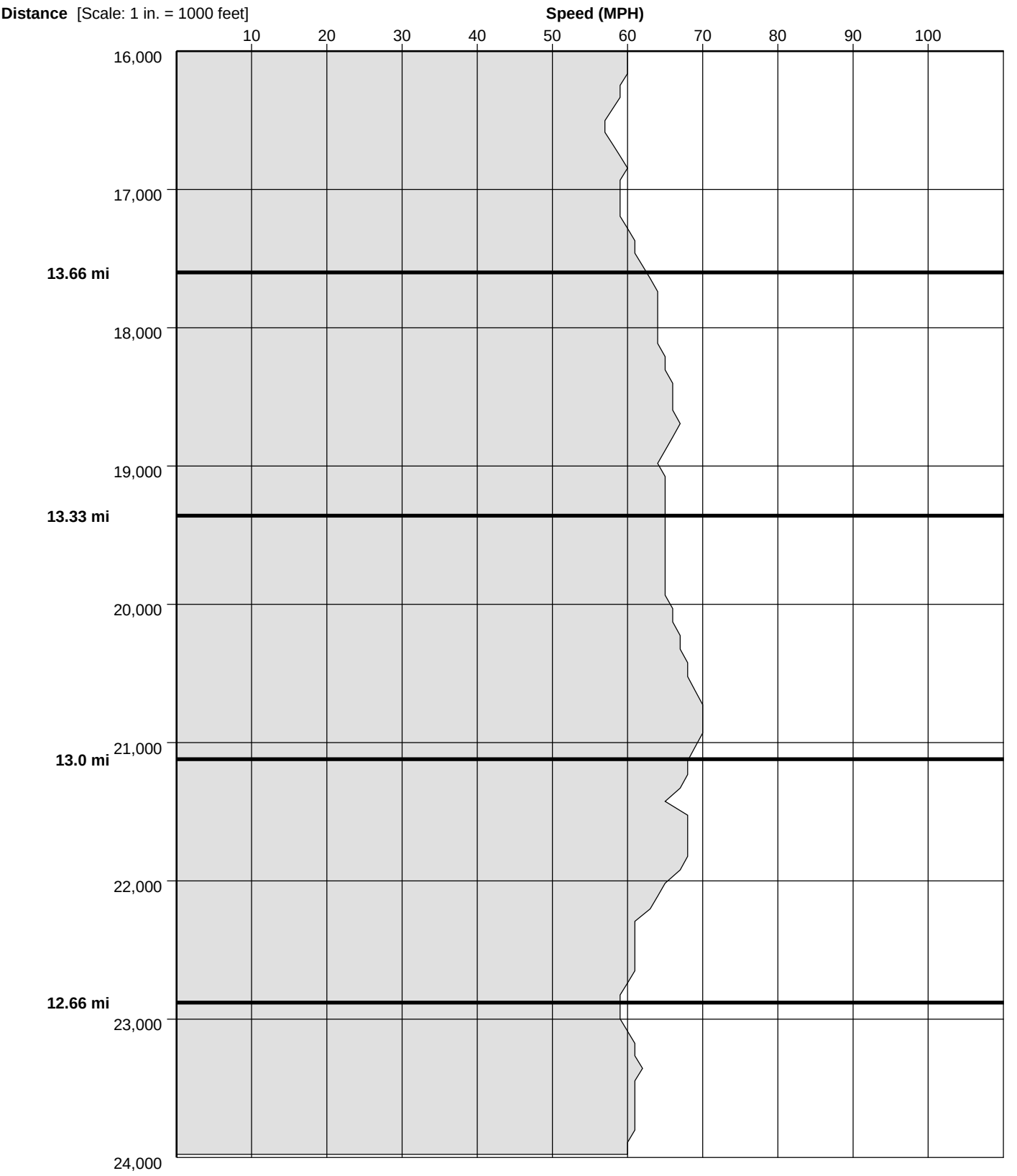
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 32**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

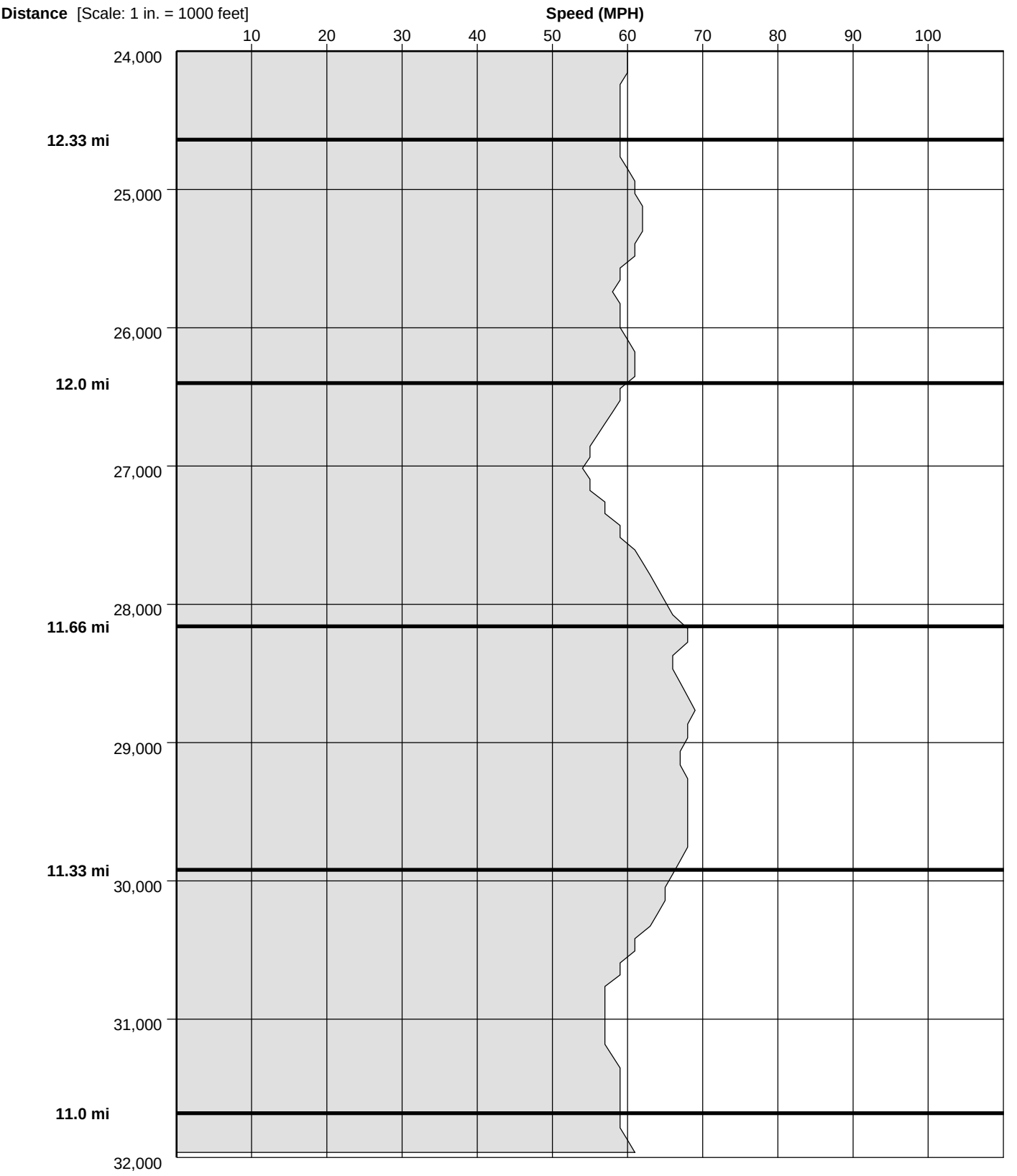
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 33**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

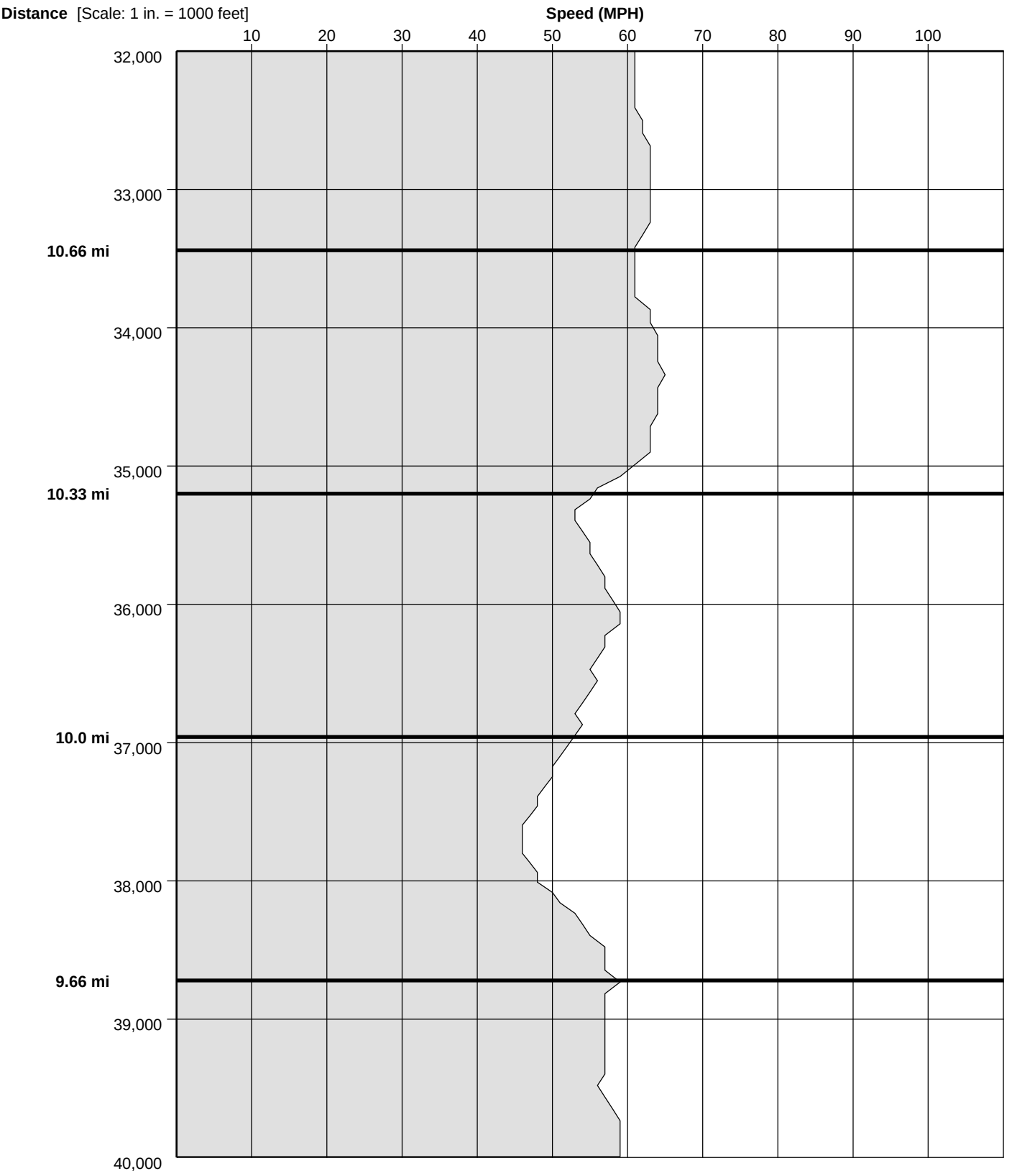
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 34**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

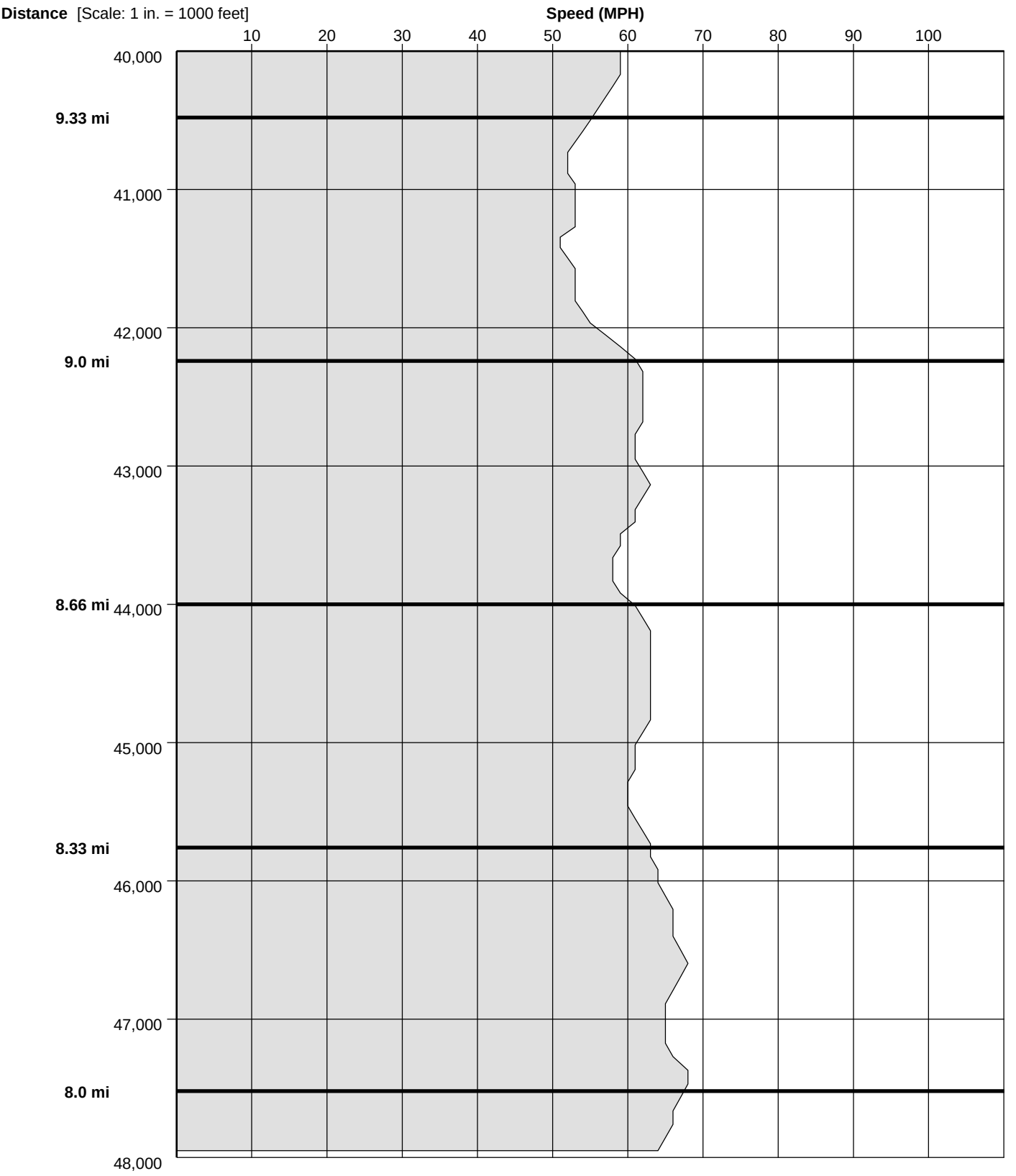
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 35**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

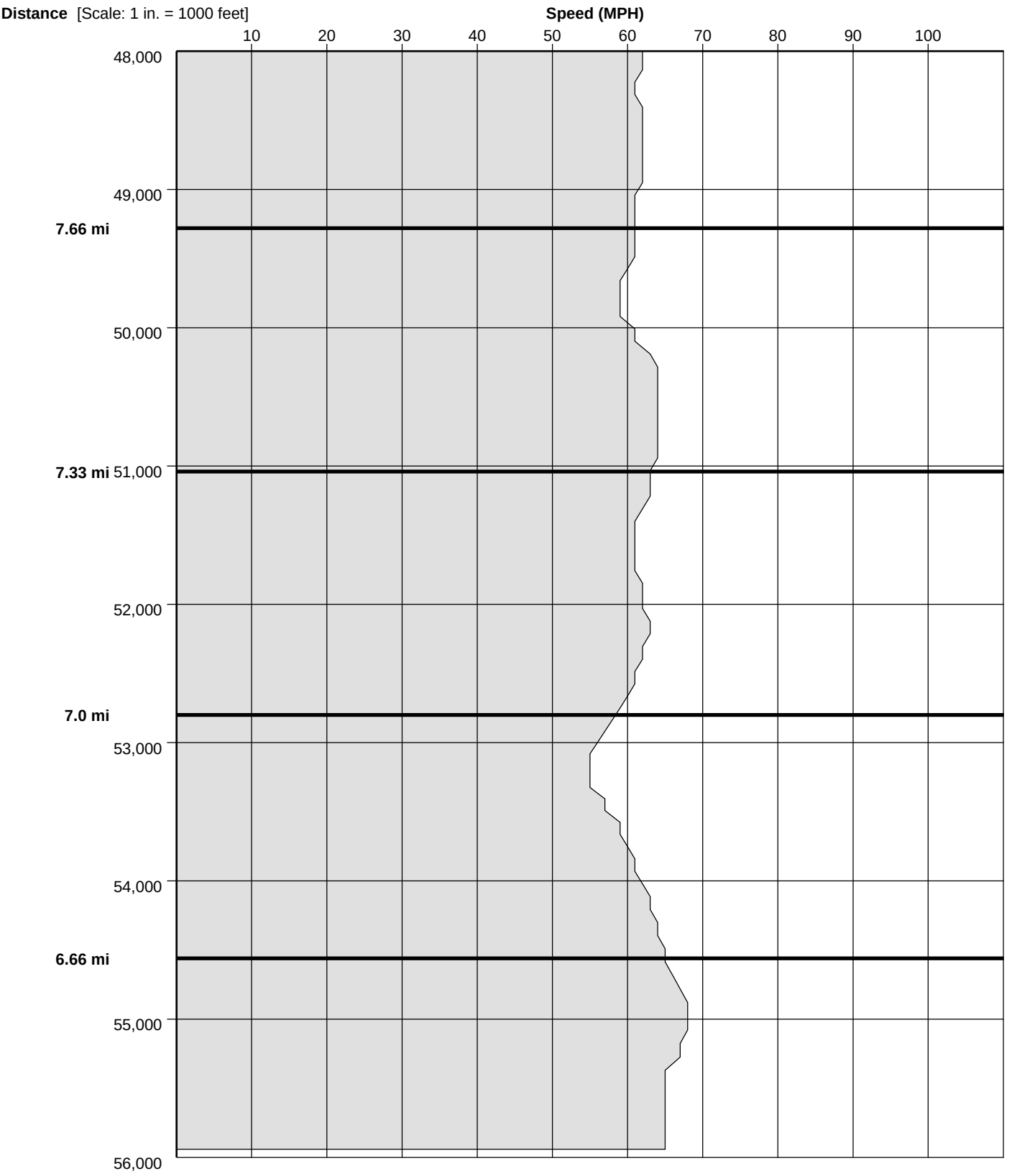
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 36**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

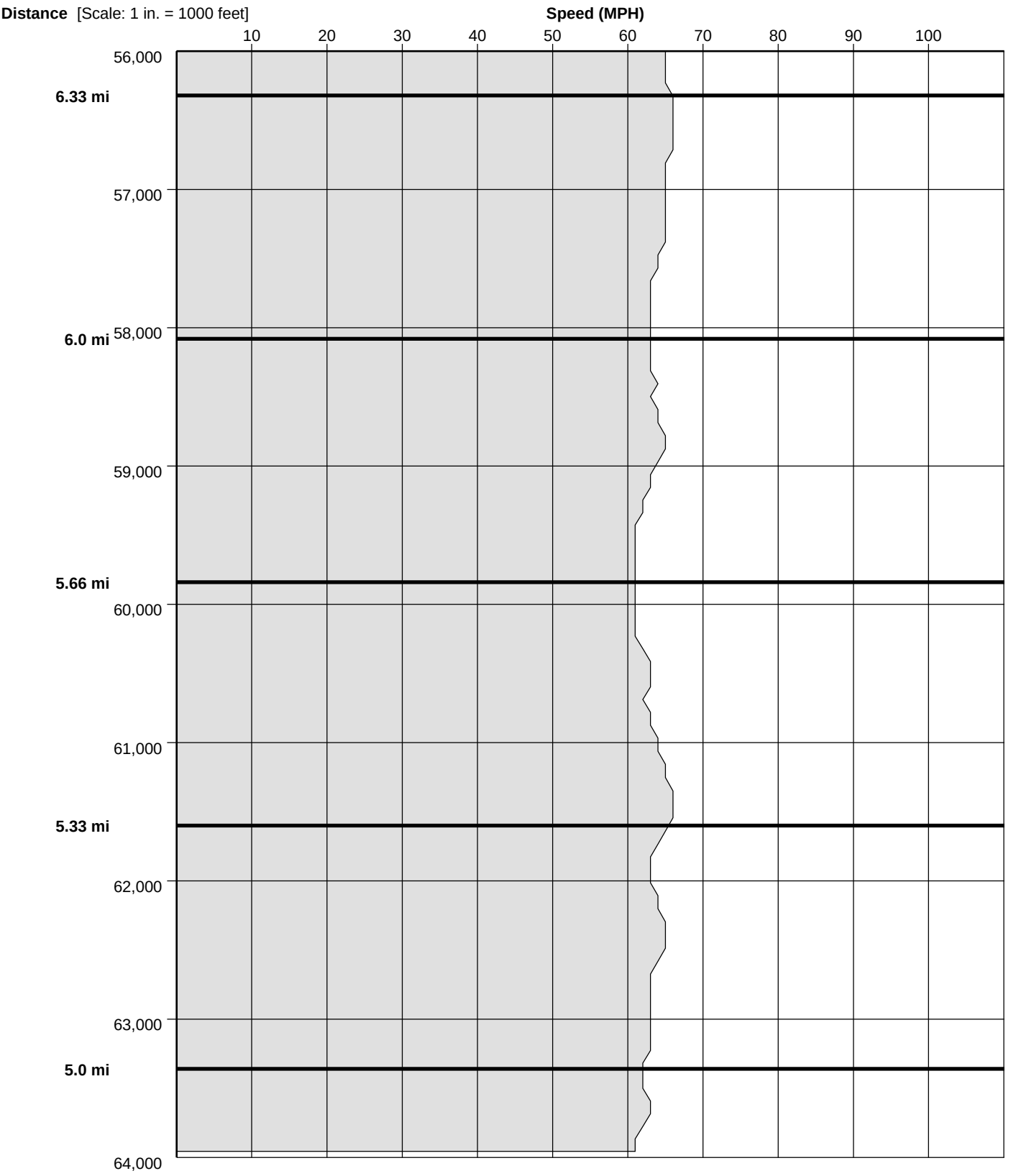
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 37**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

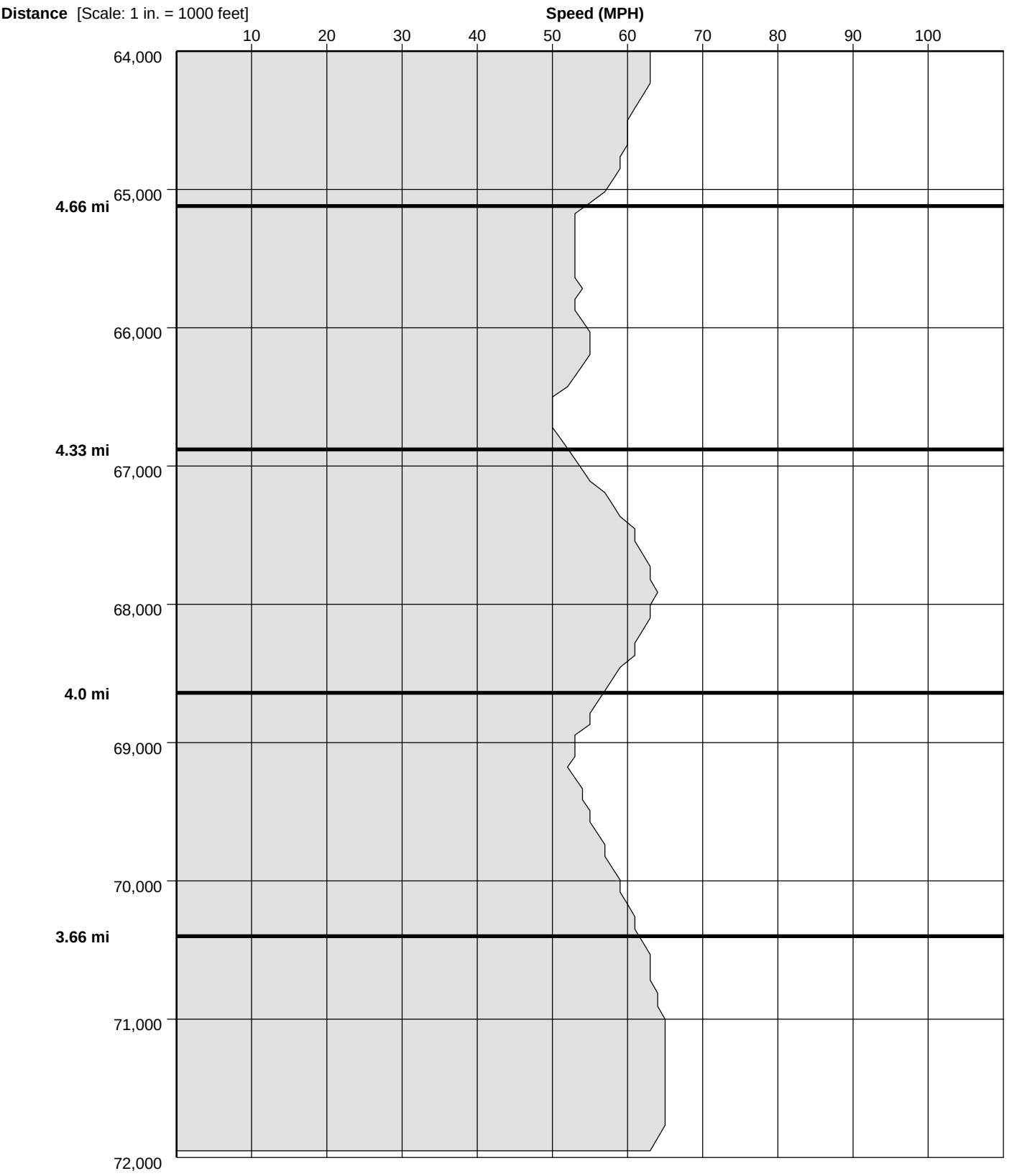
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 38**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

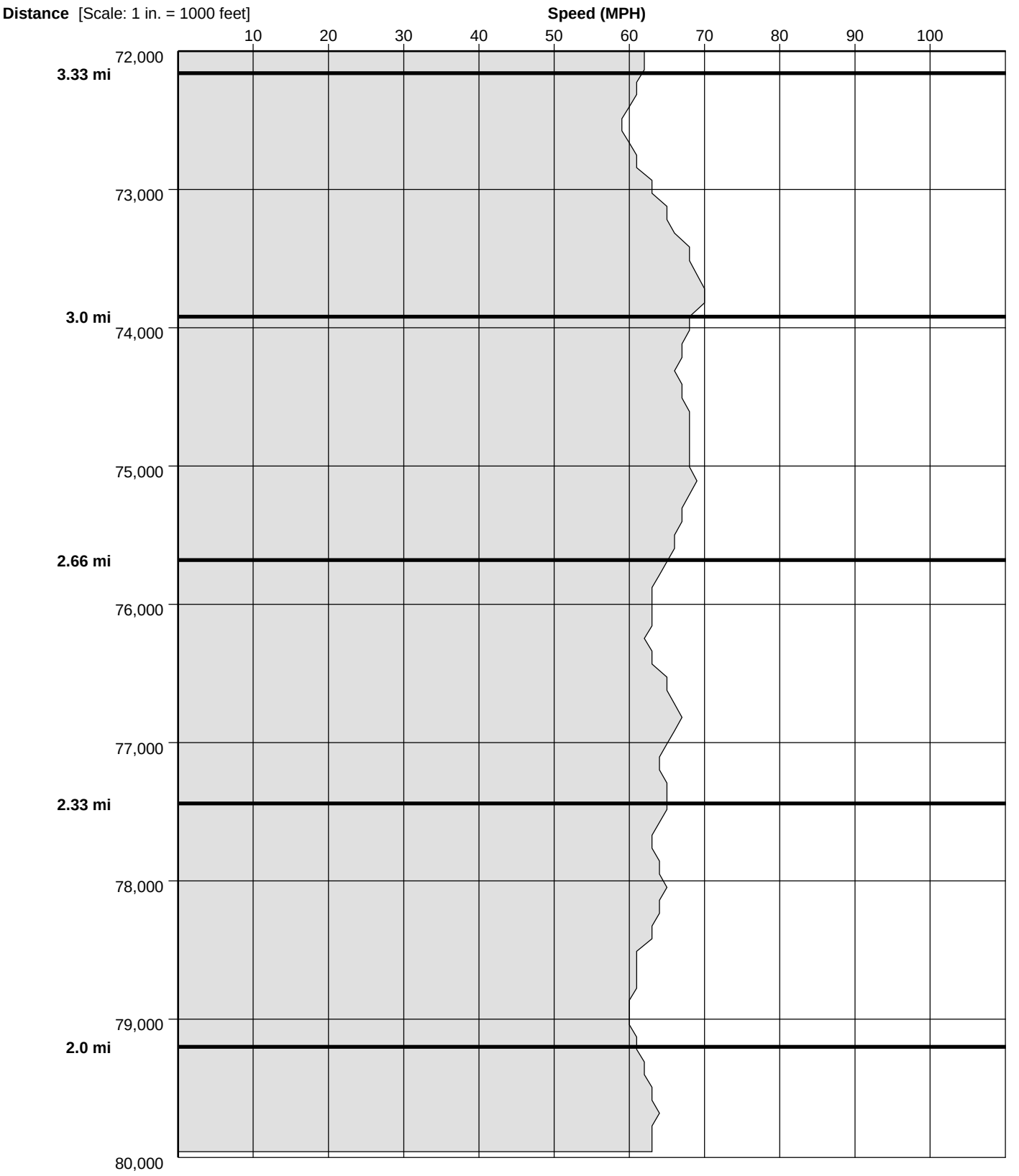
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 39**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

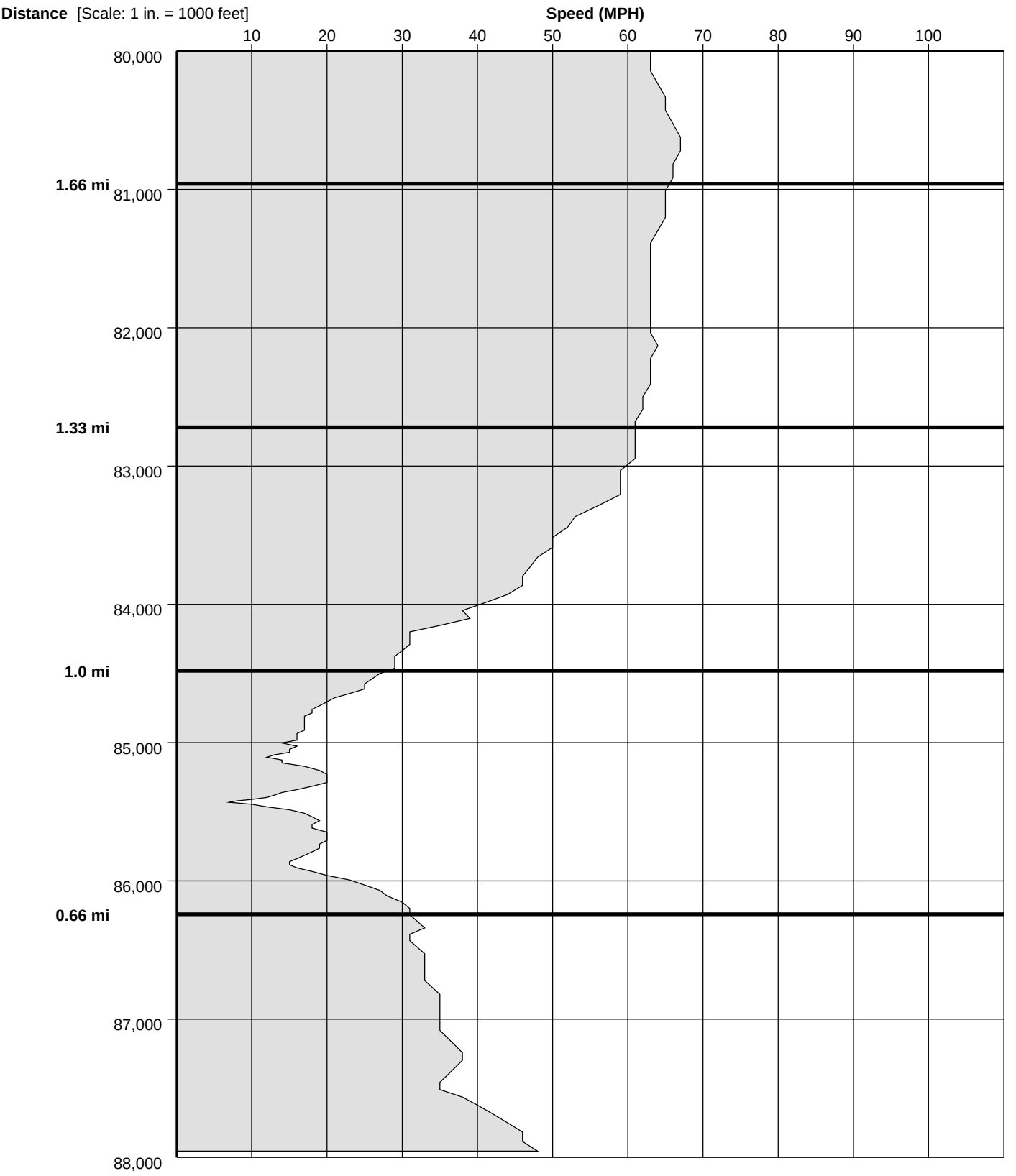
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 40**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



I-75 SB Hoyt

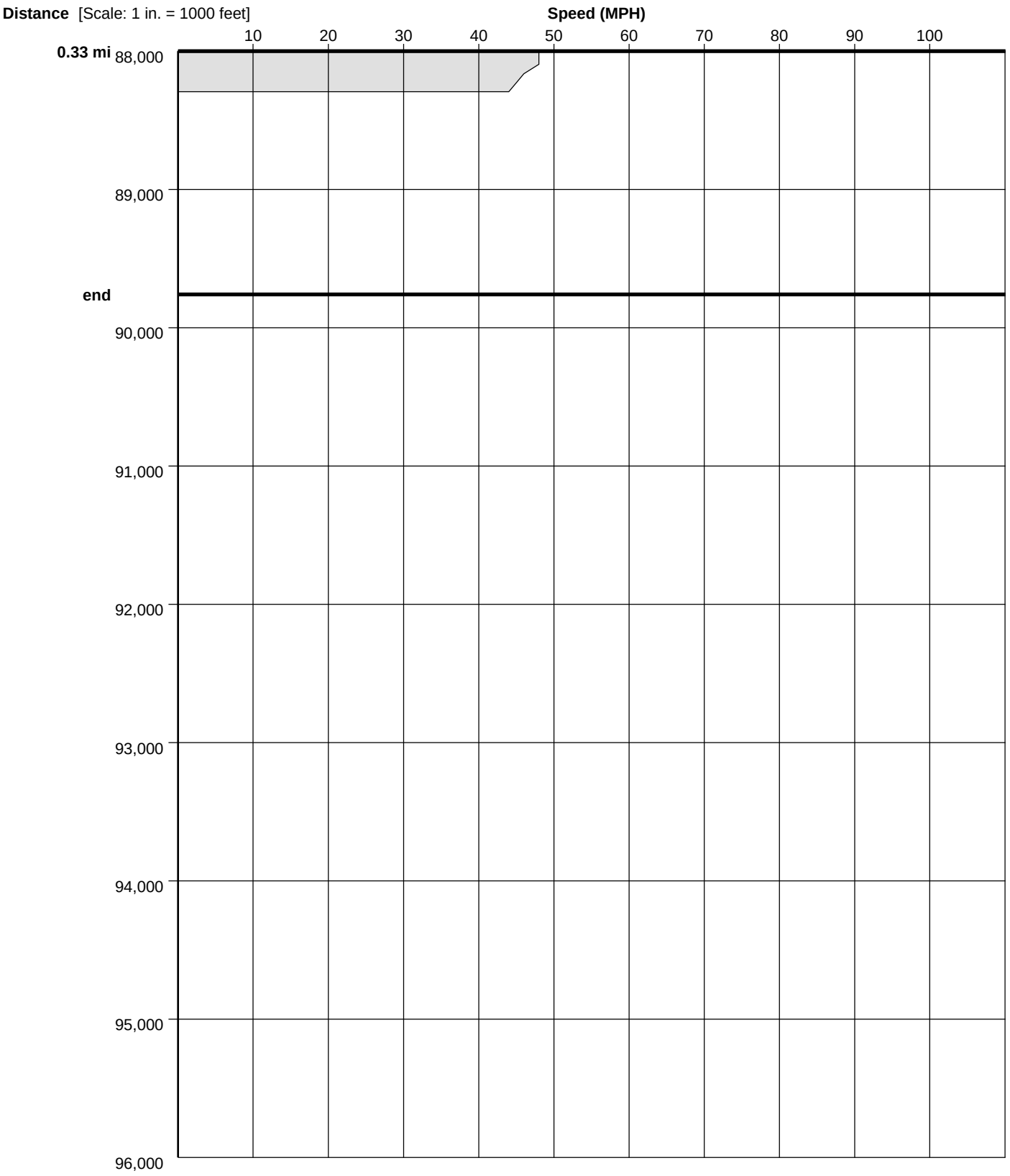
12-18-06

Heading Third Line

Study Name **: I-75 SB Hoyt**
Study Date **: 12/21/2006**
Page No. **: 41**

Speed Profile

Run : I-75 SB-Hoyt-SB-003 Start Time: 18:02 (This is a Before Run)



PC-Travel for Windows Reports for study: I-75 SB Jerry

I-75 SB Jerry

12-18-06

Heading Third Line

Study Summary

Runs Used in This Study

Node Info

#	Len	Name
1	0	start
2	1760	16.66 mi
3	1760	16.33 mi
4	1760	16.0 mi
5	1760	15.66 mi
6	1760	15.33 mi
7	1760	15.0 mi
8	1760	14.66 mi
9	1760	14.33 mi
10	1760	14.0 mi
11	1760	13.66 mi
12	1760	13.33 mi
13	1760	13.0 mi
14	1760	12.66 mi
15	1760	12.33 mi
16	1760	12.0 mi
17	1760	11.66 mi
18	1760	11.33 mi
19	1760	11.0 mi
20	1760	10.66 mi
21	1760	10.33 mi
22	1760	10.0 mi
23	1760	9.66 mi
24	1760	9.33 mi
25	1760	9.0 mi
26	1760	8.66 mi
27	1760	8.33 mi
28	1760	8.0 mi
29	1760	7.66 mi
30	1760	7.33 mi
31	1760	7.0 mi
32	1760	6.66 mi
33	1760	6.33 mi
34	1760	6.0 mi
35	1760	5.66 mi
36	1760	5.33 mi
37	1760	5.0 mi
38	1760	4.66 mi
39	1760	4.33 mi

40	1760	4.0 mi
41	1760	3.66 mi
42	1760	3.33 mi
43	1760	3.0 mi
44	1760	2.66 mi
45	1760	2.33 mi
46	1760	2.0 mi
47	1760	1.66 mi
48	1760	1.33 mi
49	1760	1.0 mi
50	1760	0.66 mi
51	1760	0.33 mi
52	1760	end

Length of Study Route = 89,760 feet

Run Title	Start Date	Start Time	Length	Before/ After	Run Type
I-75 SB-Jerry-SB-001	12/18/06	15:46	87956	Before	Secondary
I-75 SB-Jerry-SB-002	12/18/06	16:35	89904	Before	Secondary
I-75 SB-Jerry-SB-003	12/18/06	17:38	88421	Before	Secondary

Notes:

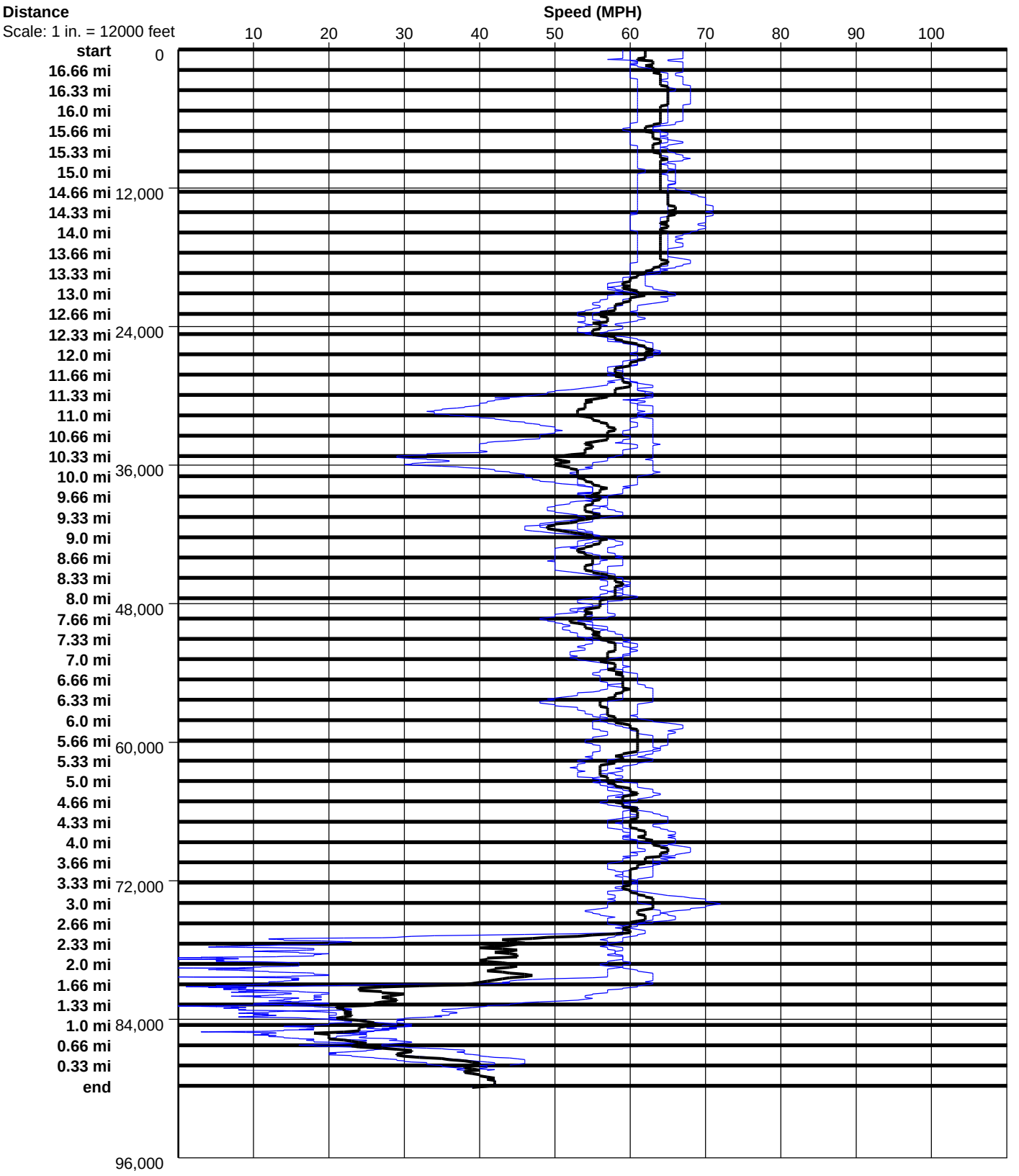
I-75 SB Jerry

12-18-06

Heading Third Line

Study Name : **I-75 SB Jerry**
Study Date : **12/21/2006**
Page No. : **4**

Speed/Distance Profiles of All Runs



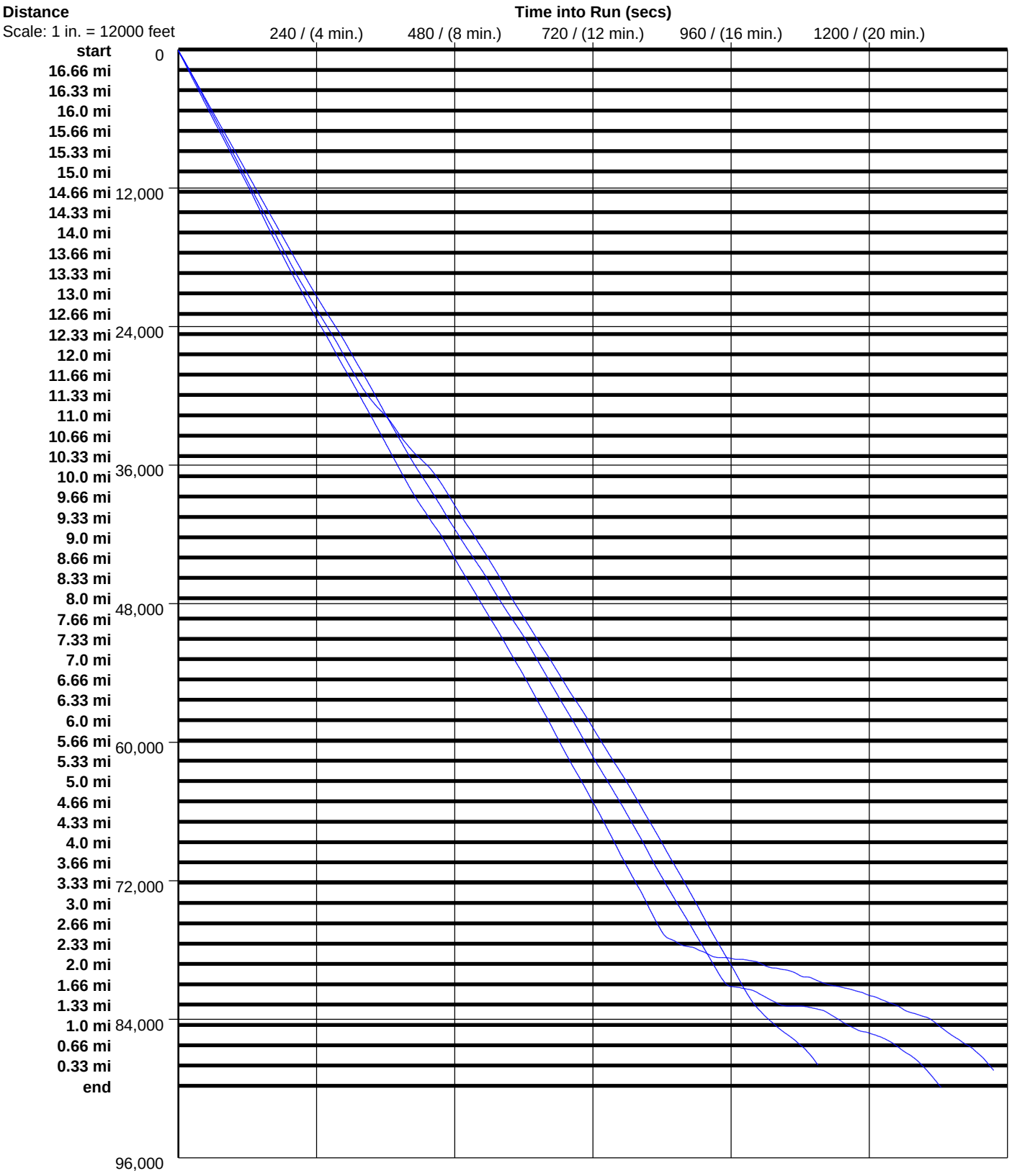
I-75 SB Jerry

12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 5**

Time/Space Trajectories of All Runs



I-75 SB Jerry

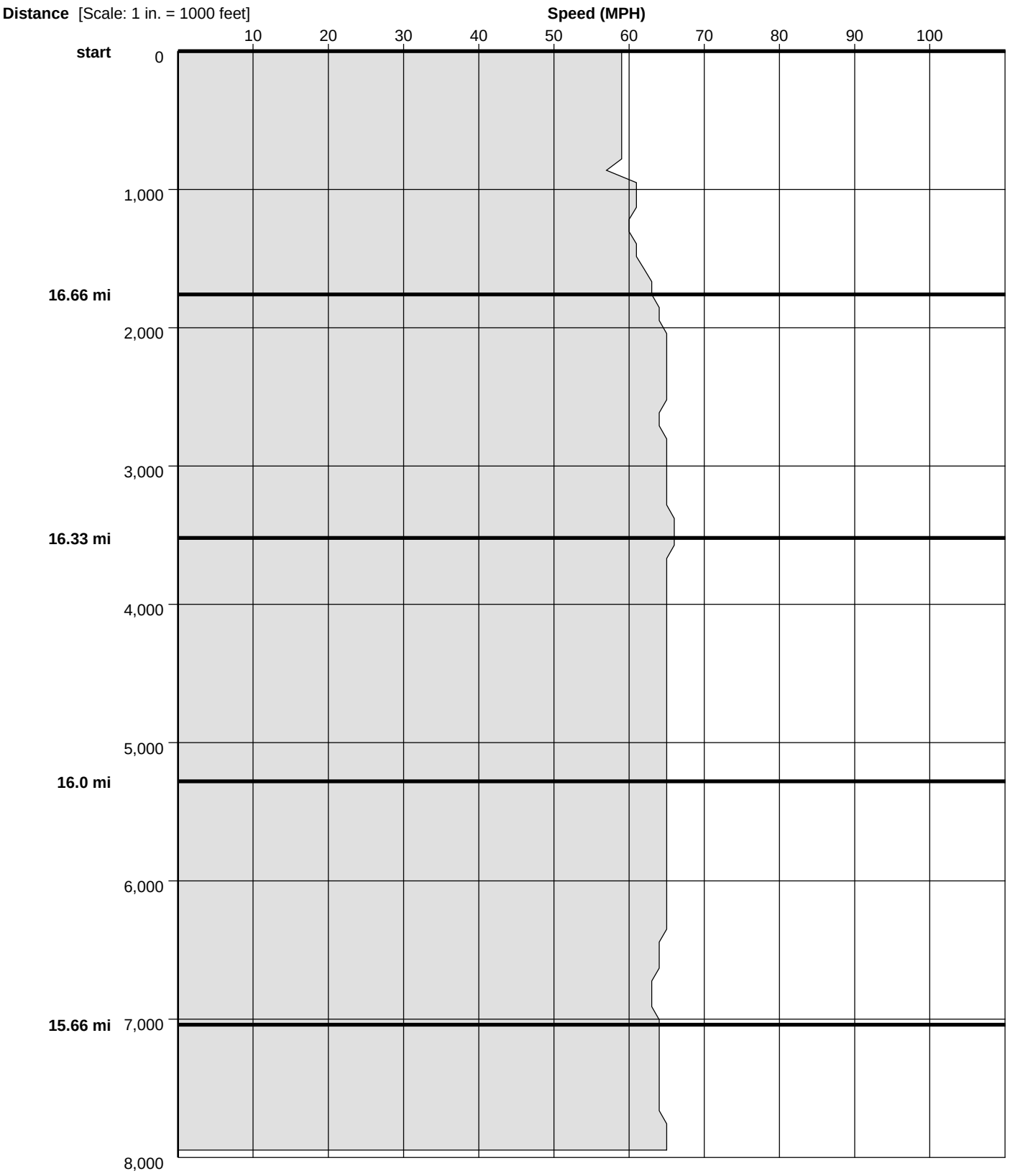
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 6**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

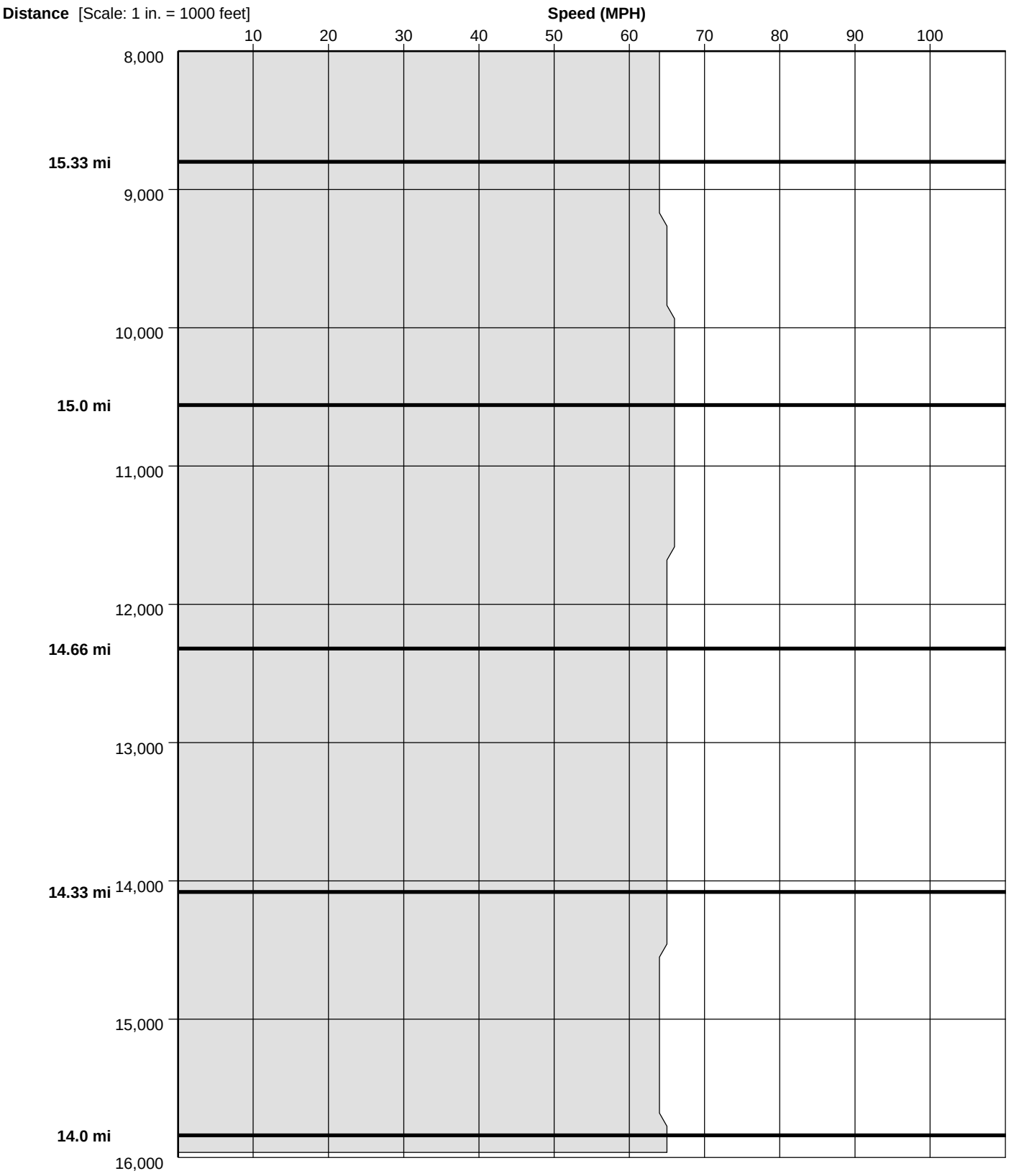
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 7**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

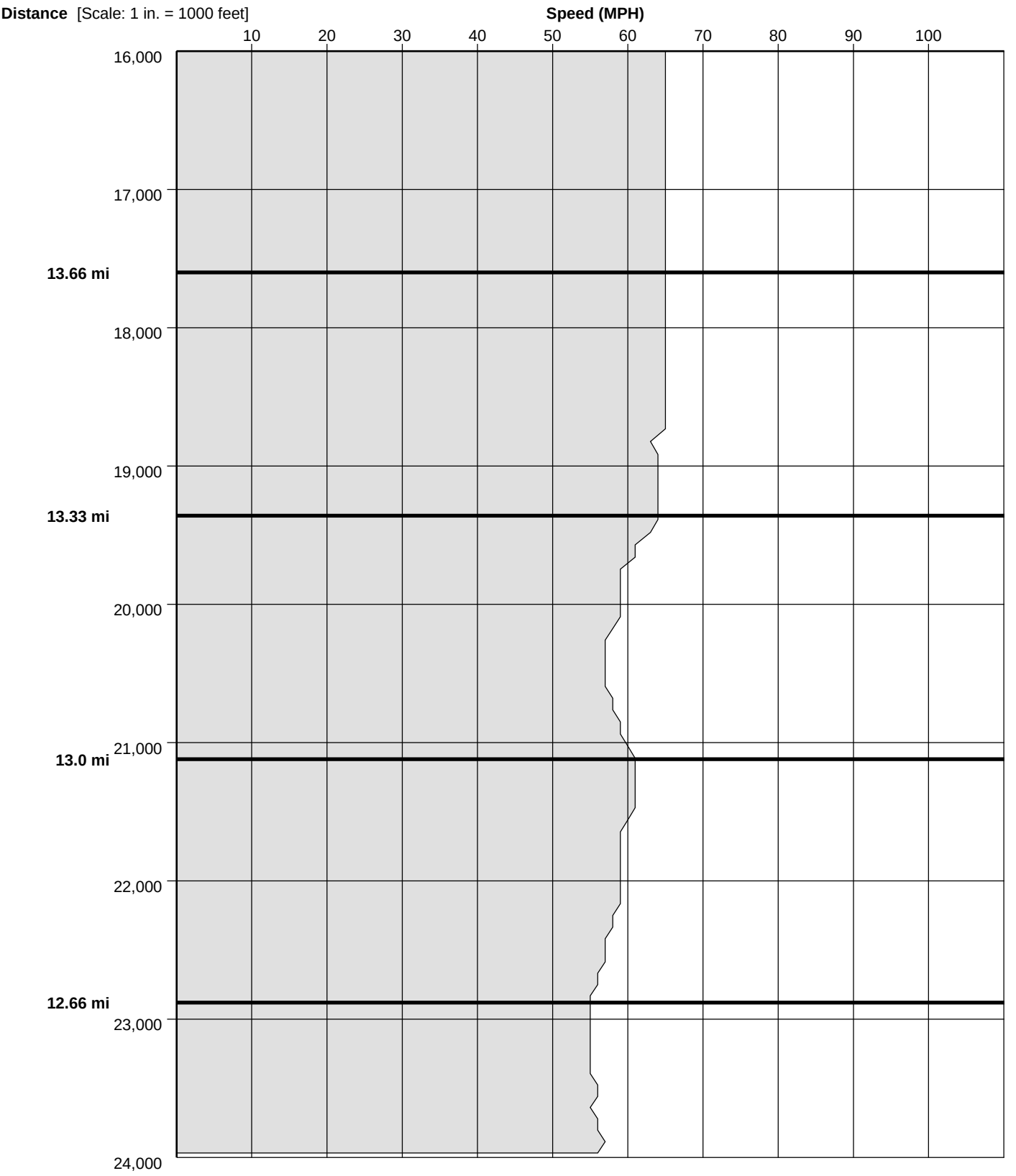
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 8**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

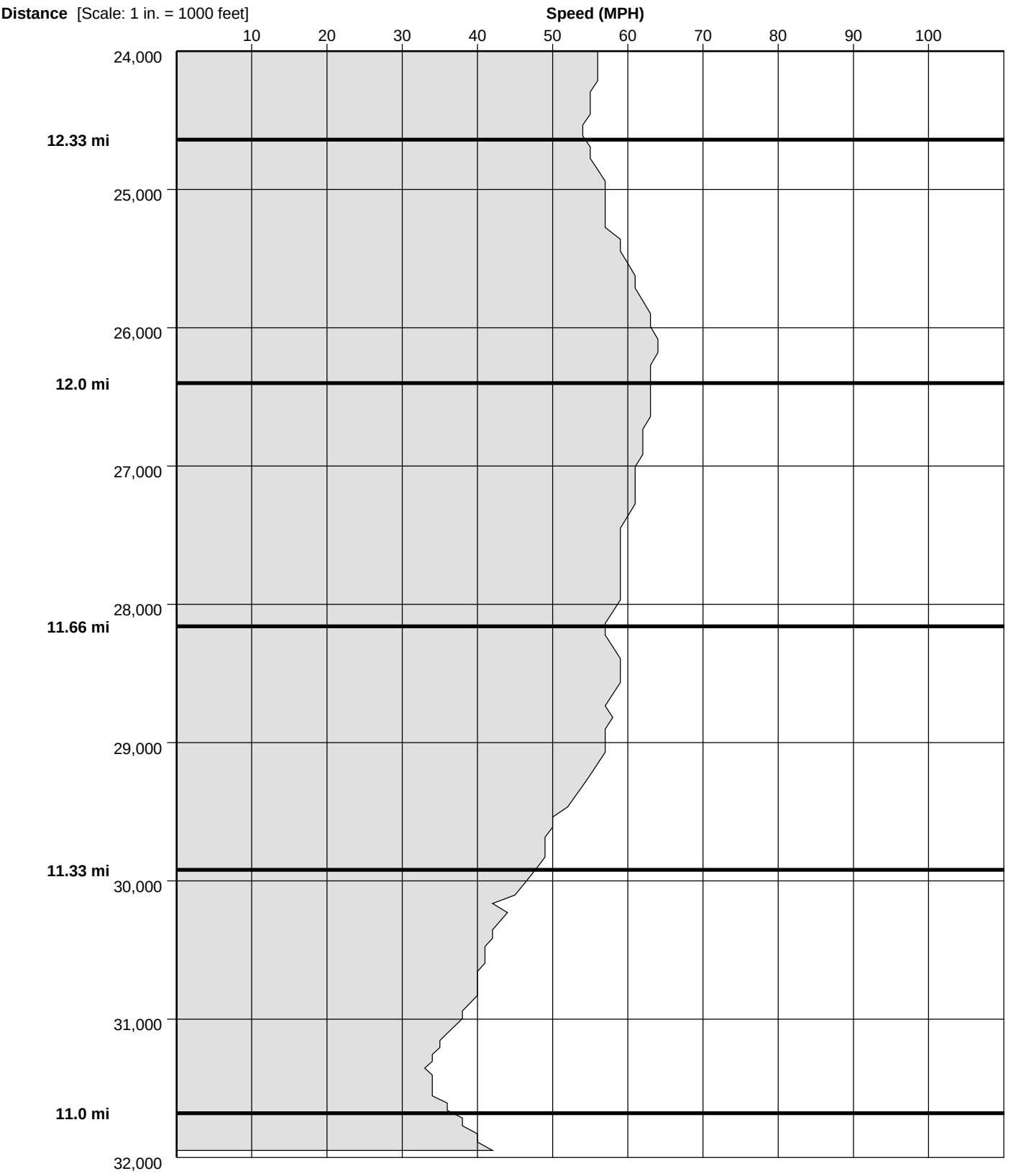
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 9**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

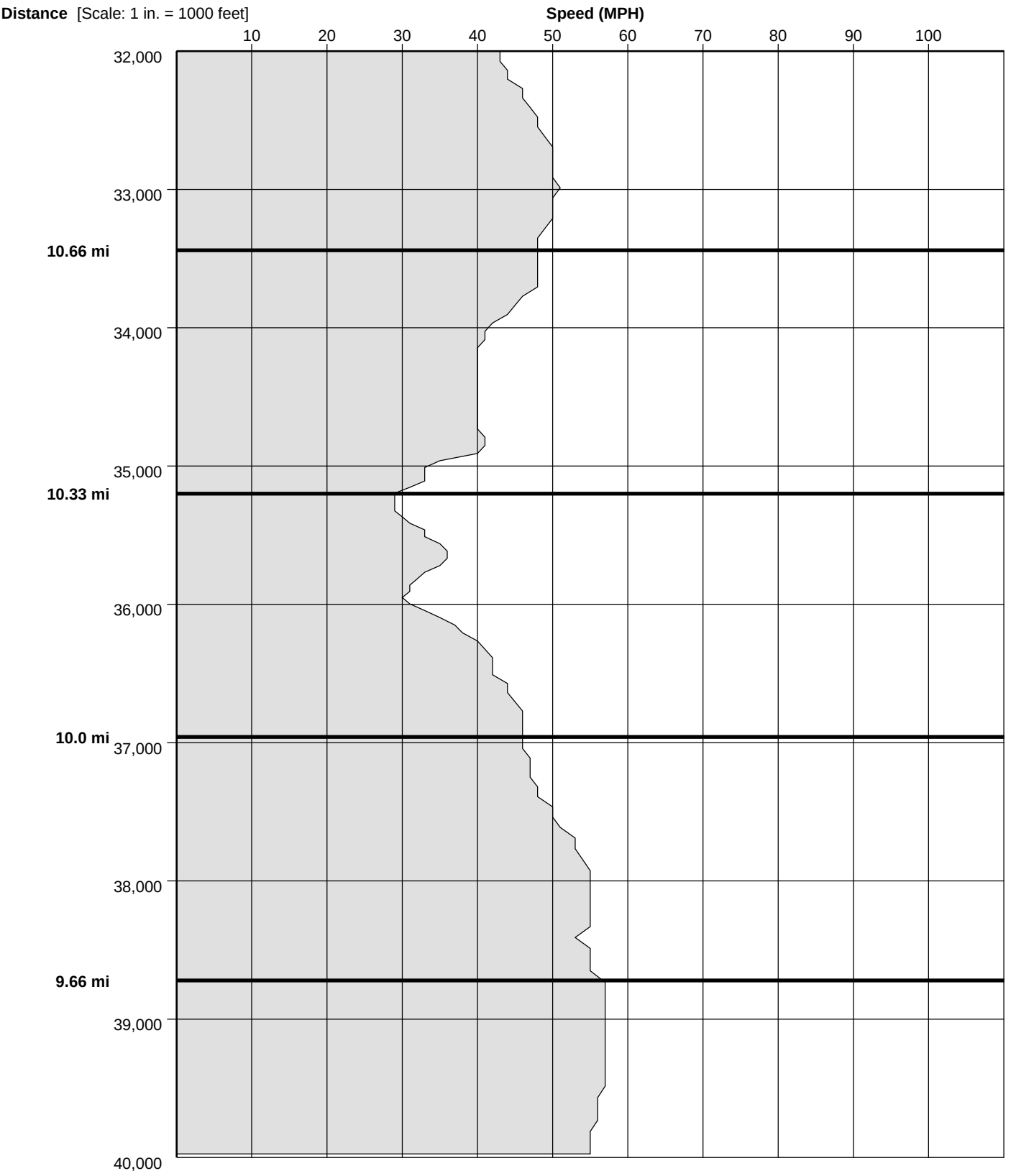
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 10**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

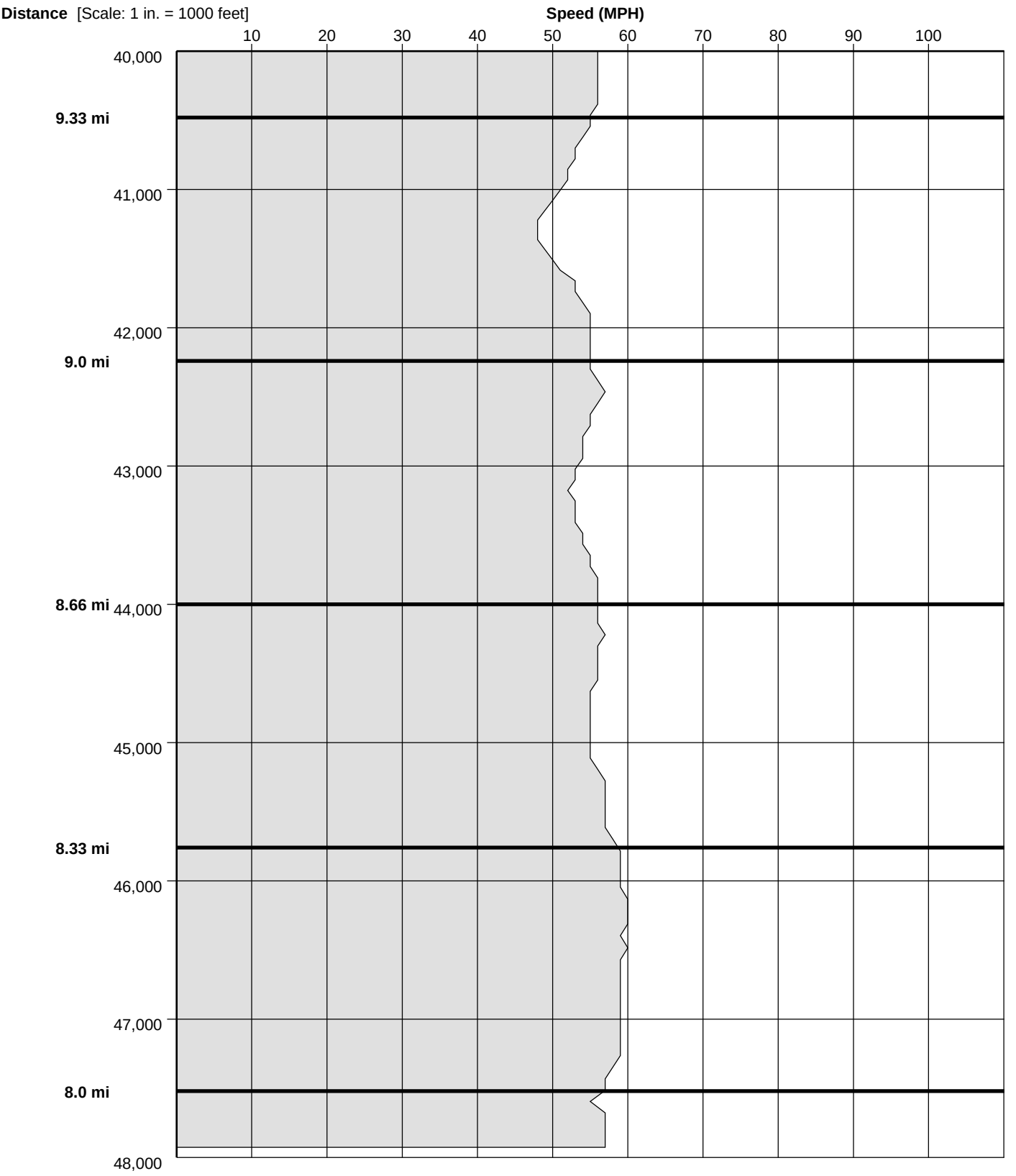
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 11**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

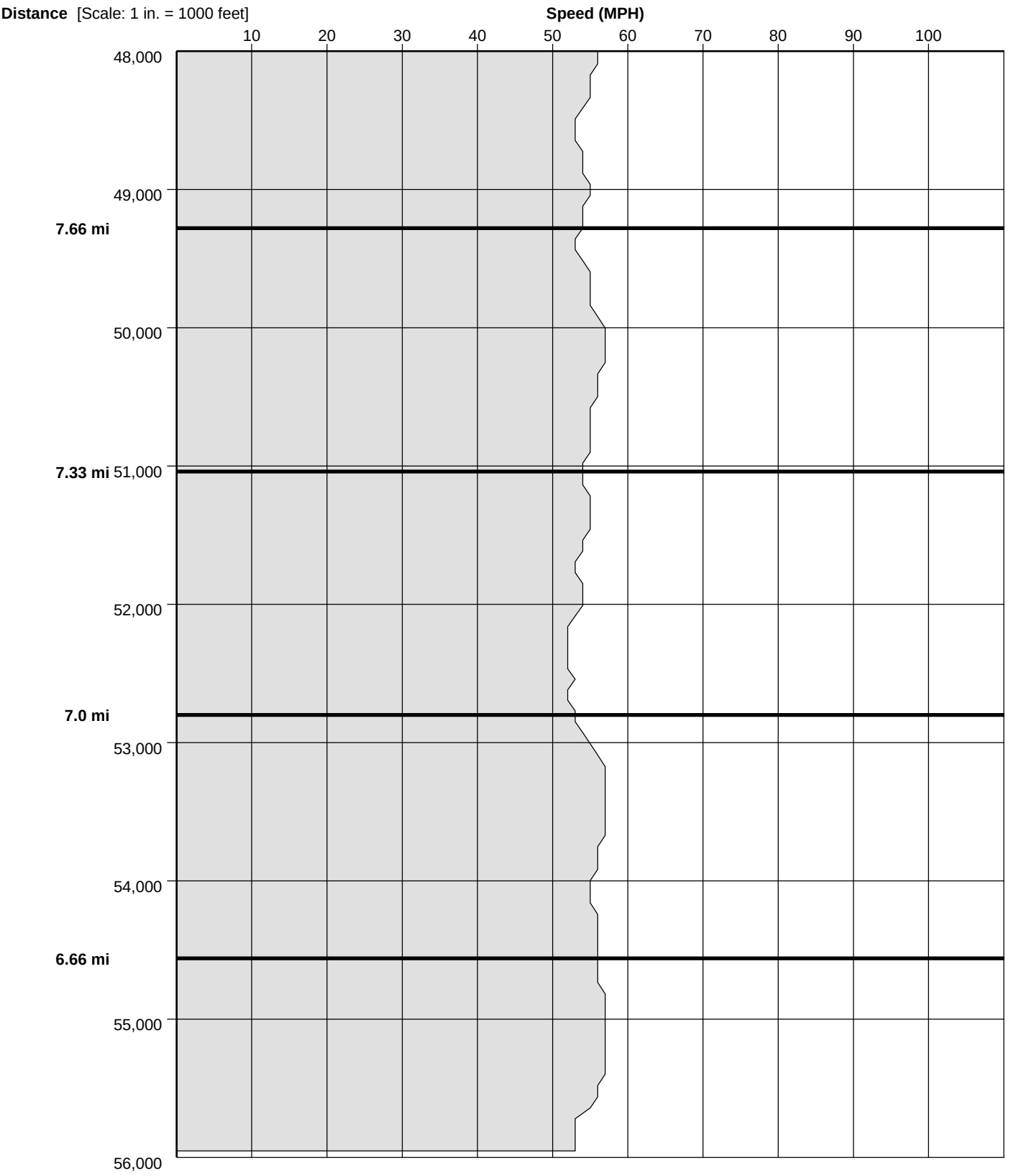
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 12**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

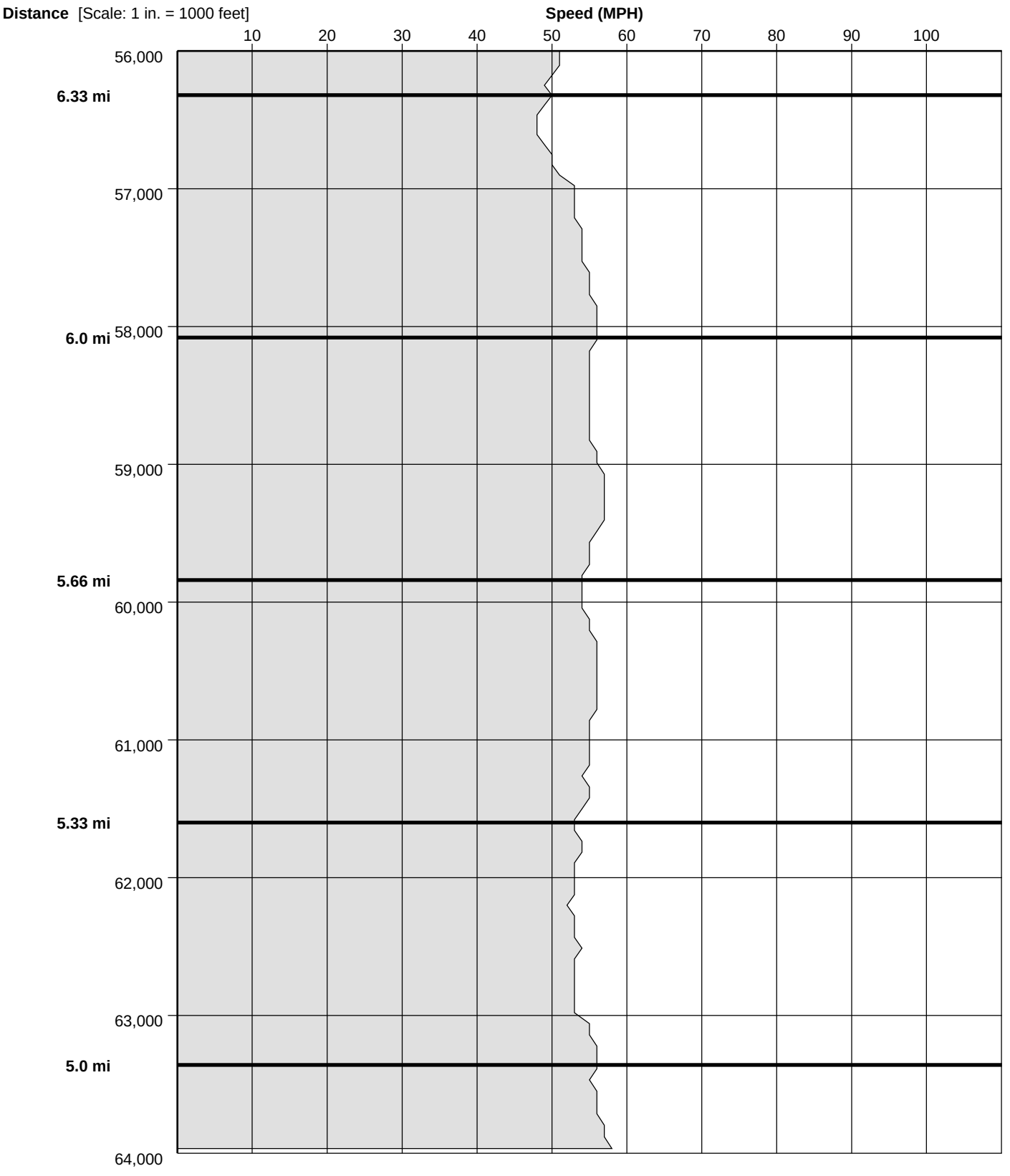
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 13**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

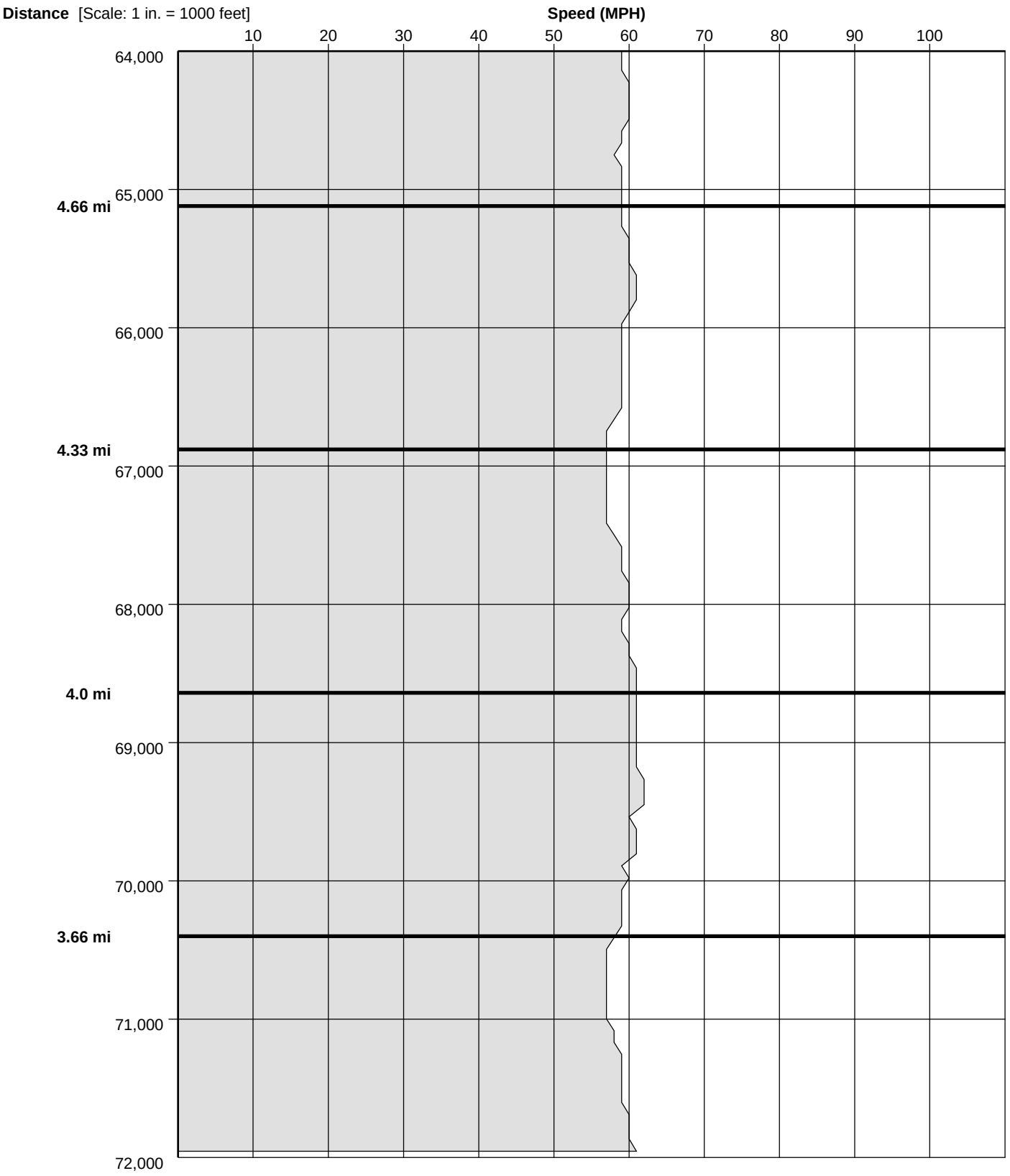
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 14**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

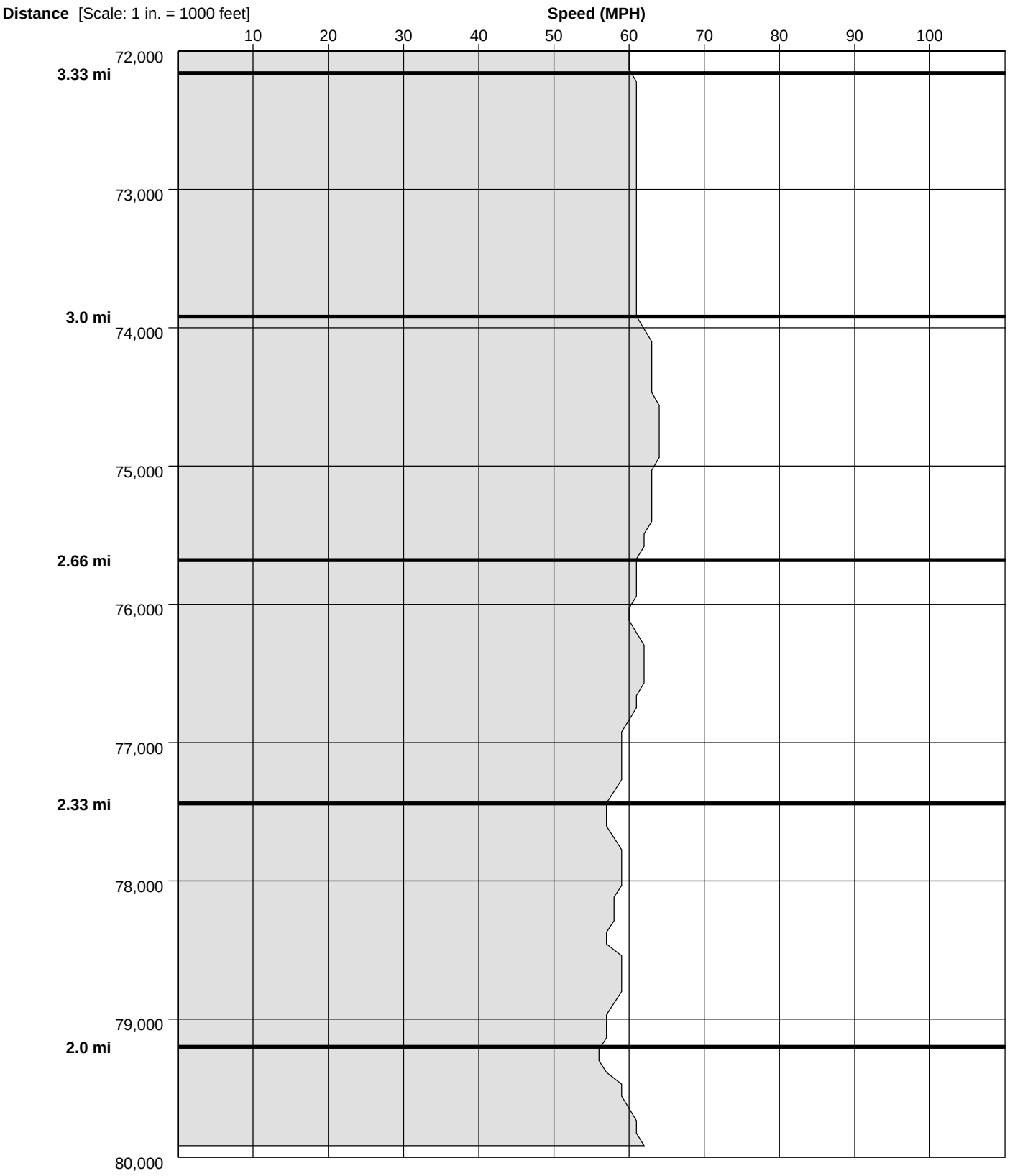
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 15**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

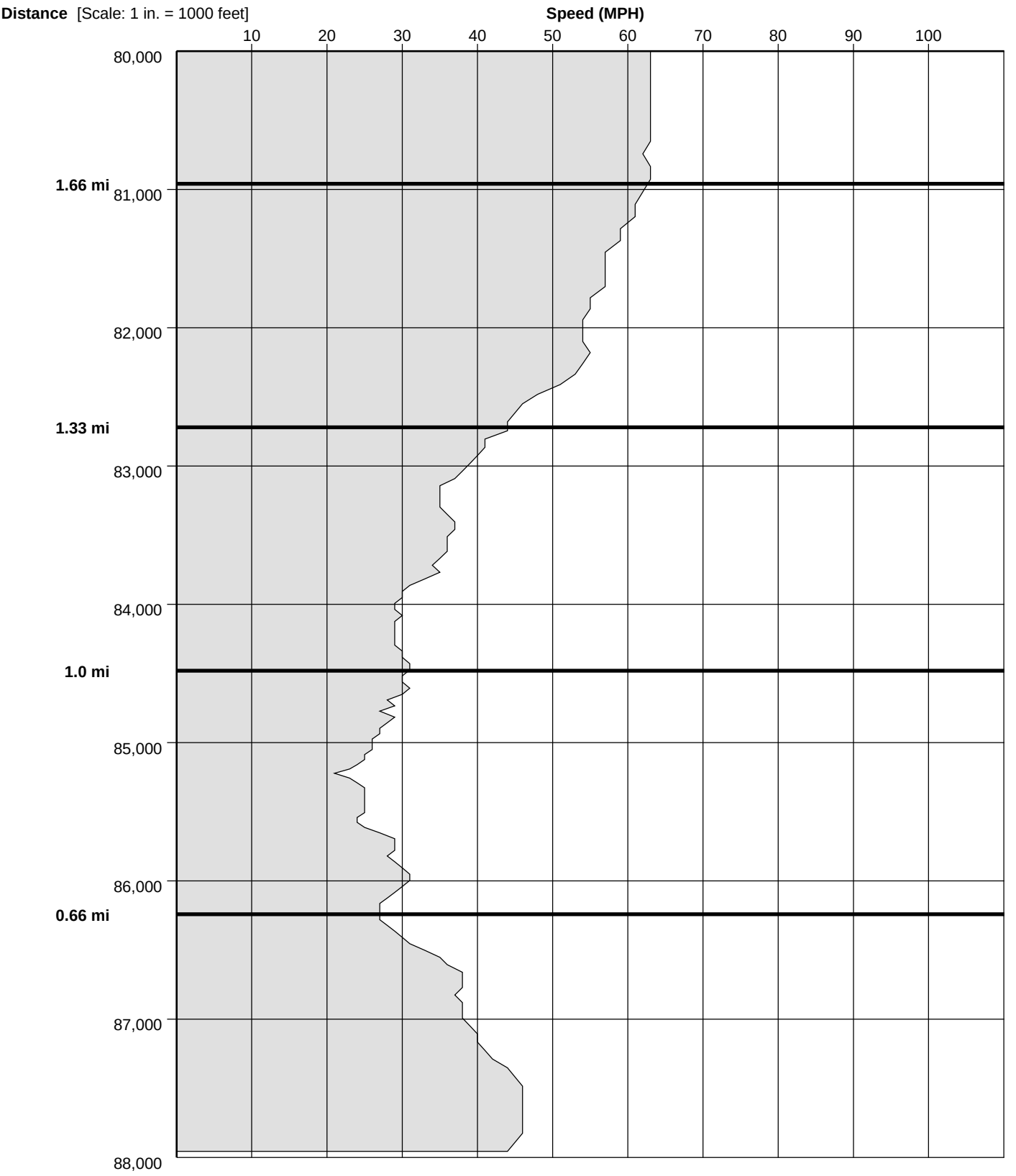
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 16**

Speed Profile

Run : I-75 SB-Jerry-SB-001 Start Time: 15:46 (This is a Before Run)



I-75 SB Jerry

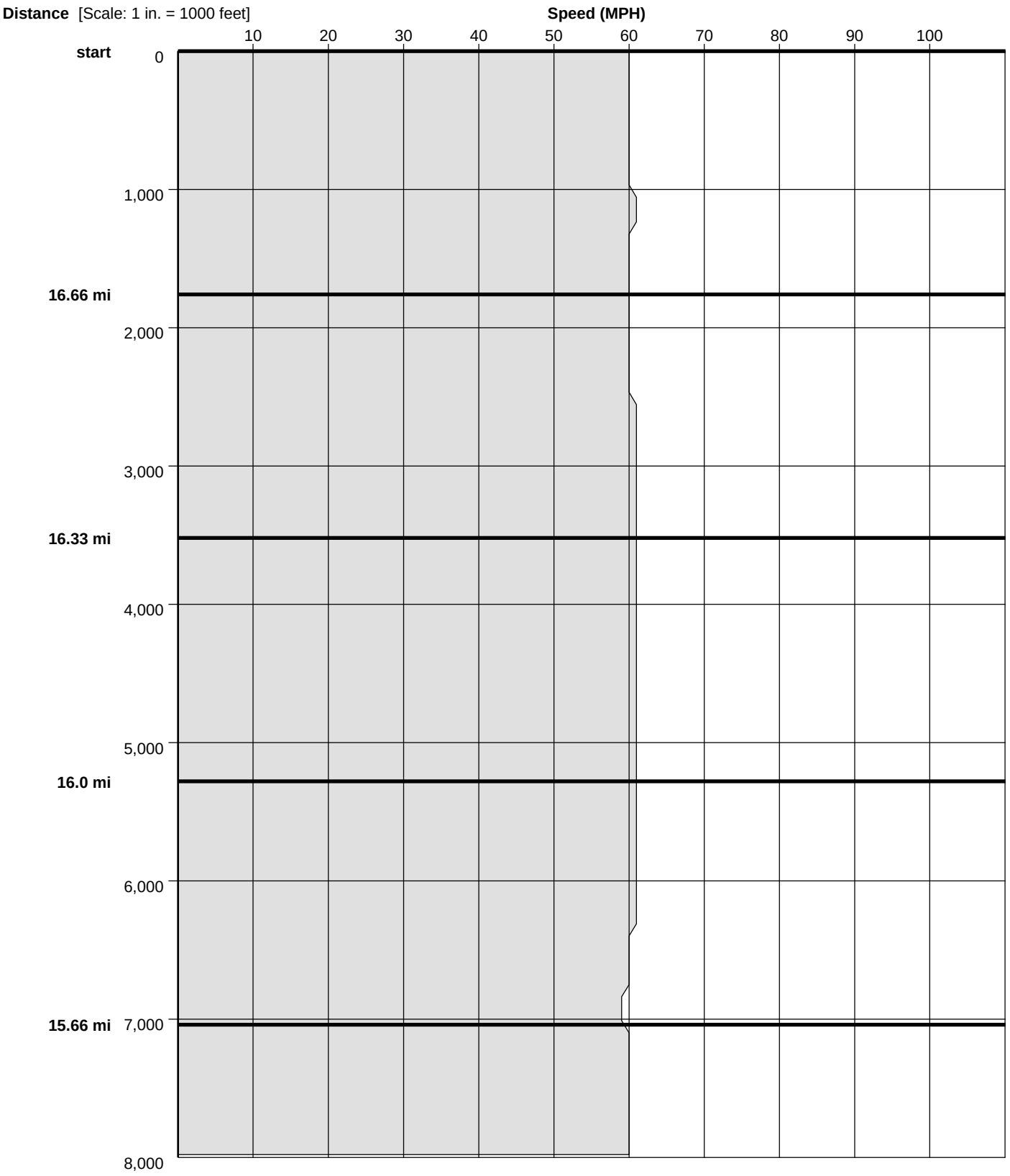
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 17**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

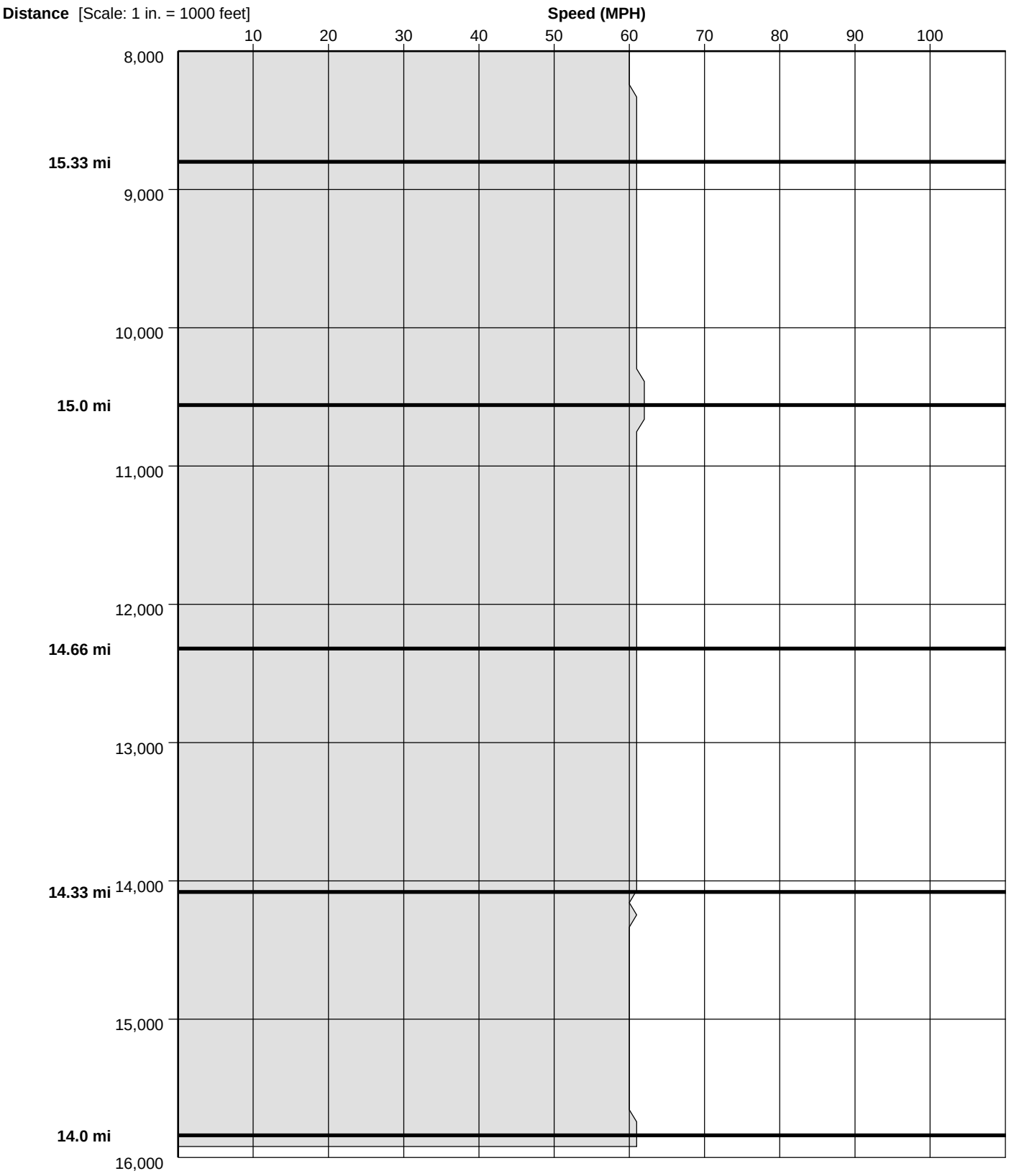
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 18**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

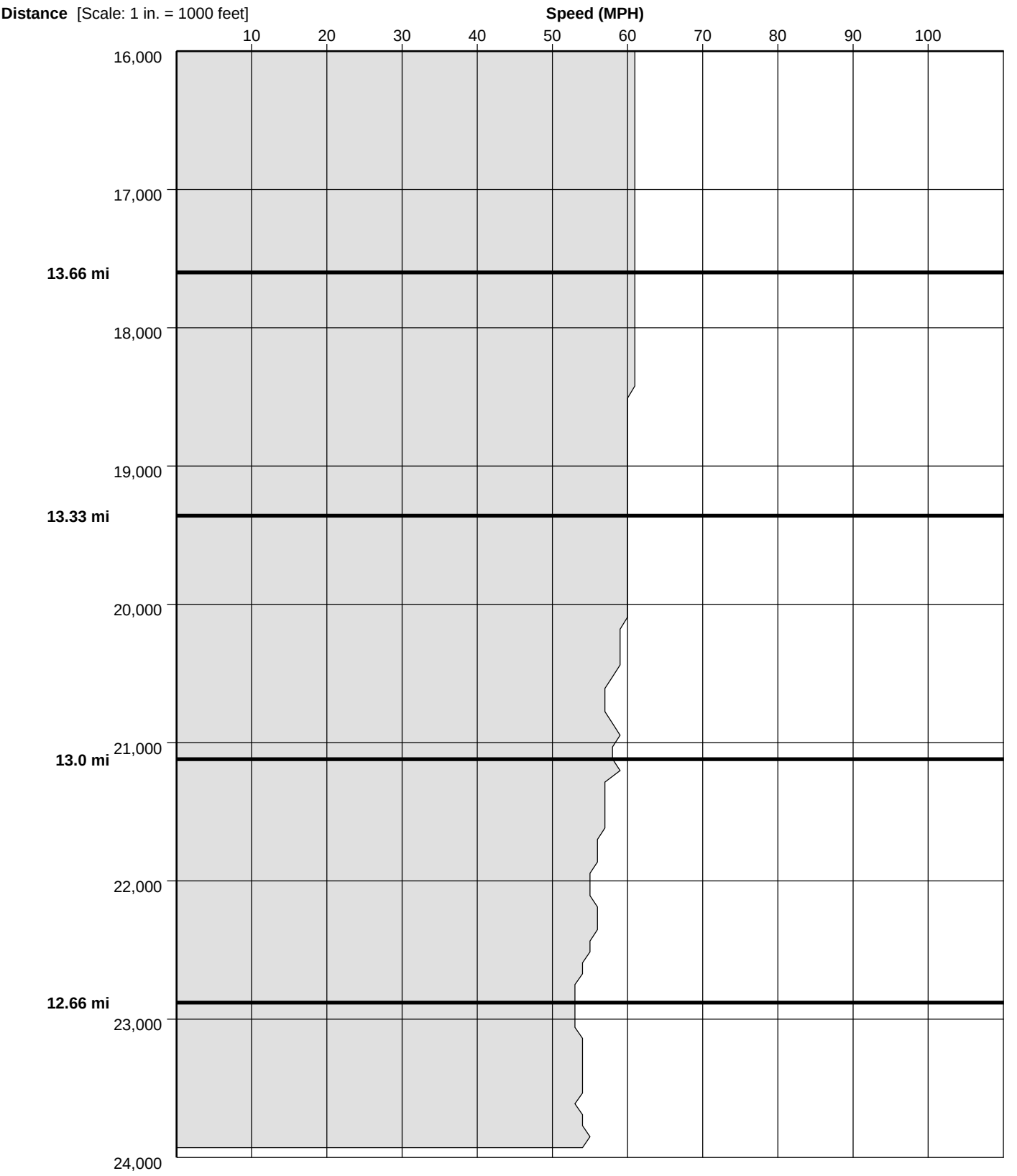
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 19**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

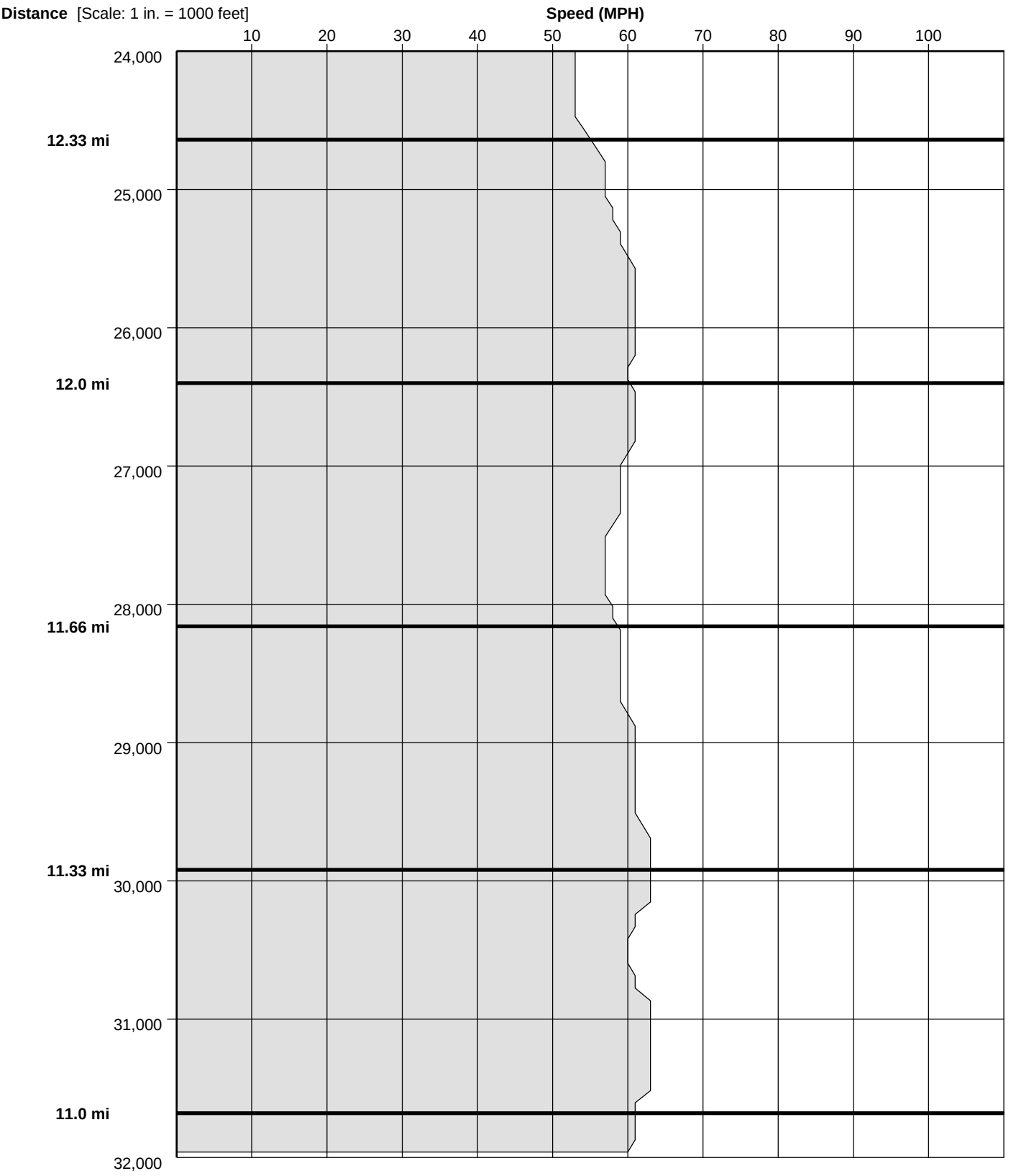
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 20**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

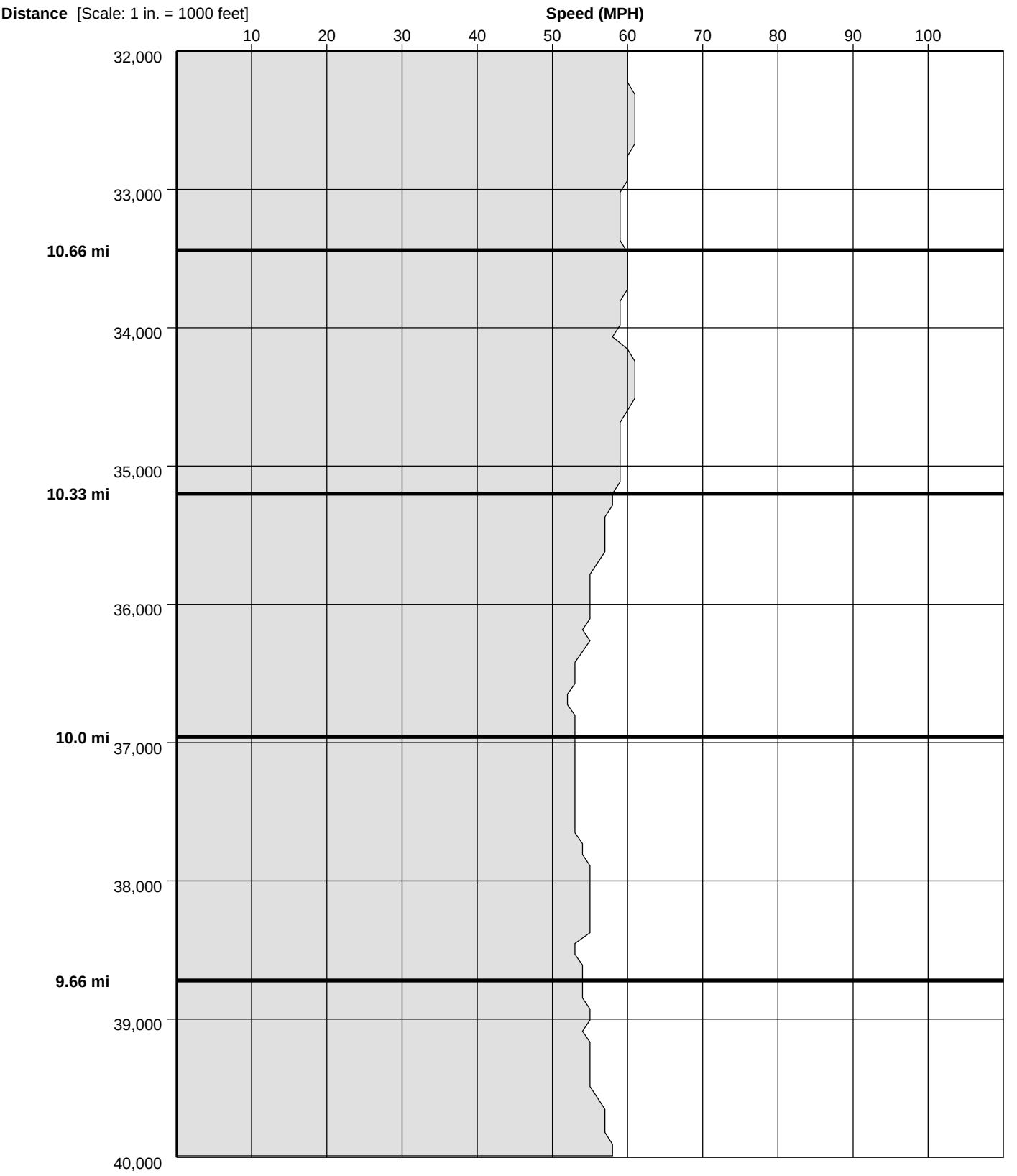
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 21**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

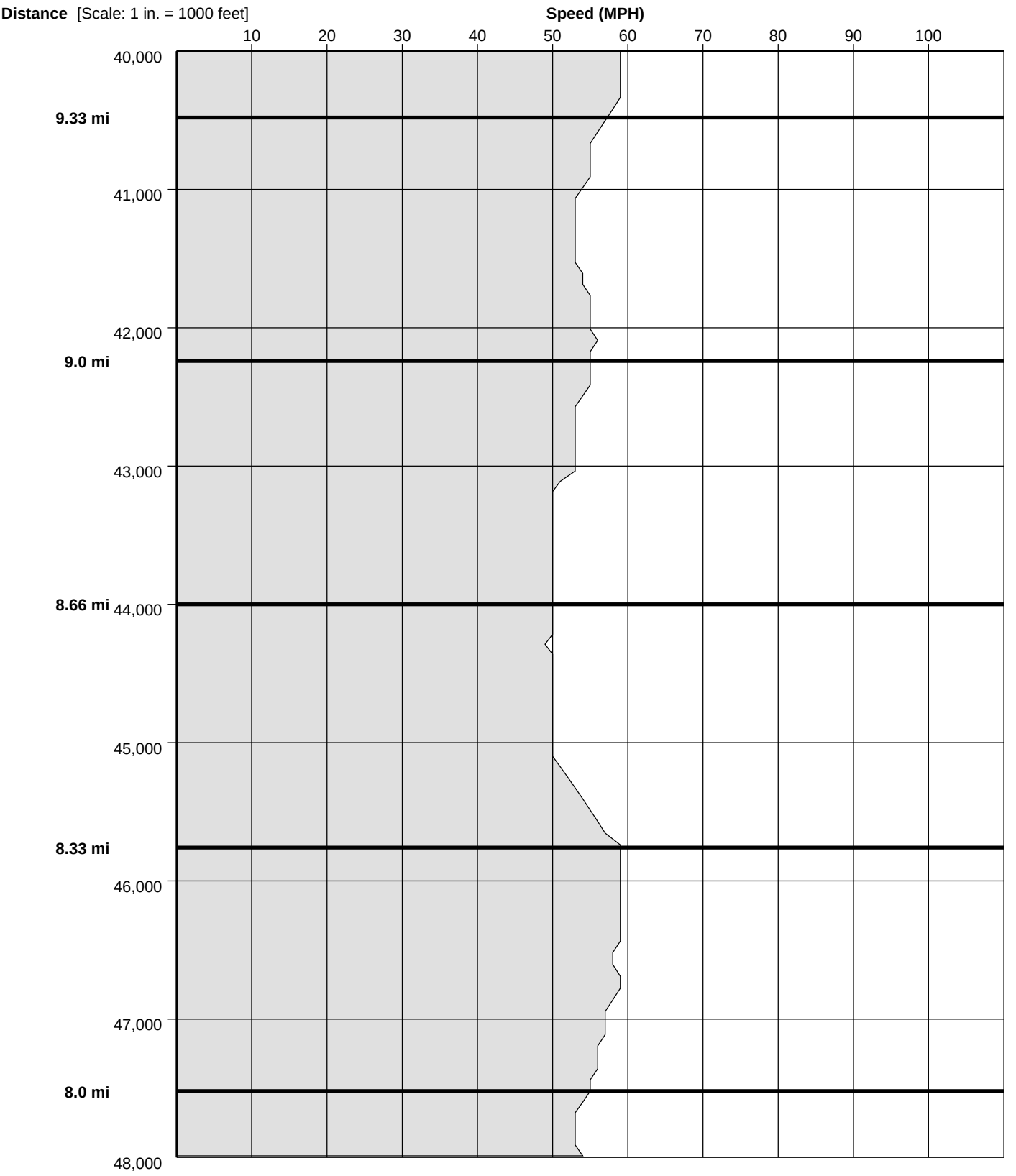
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 22**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

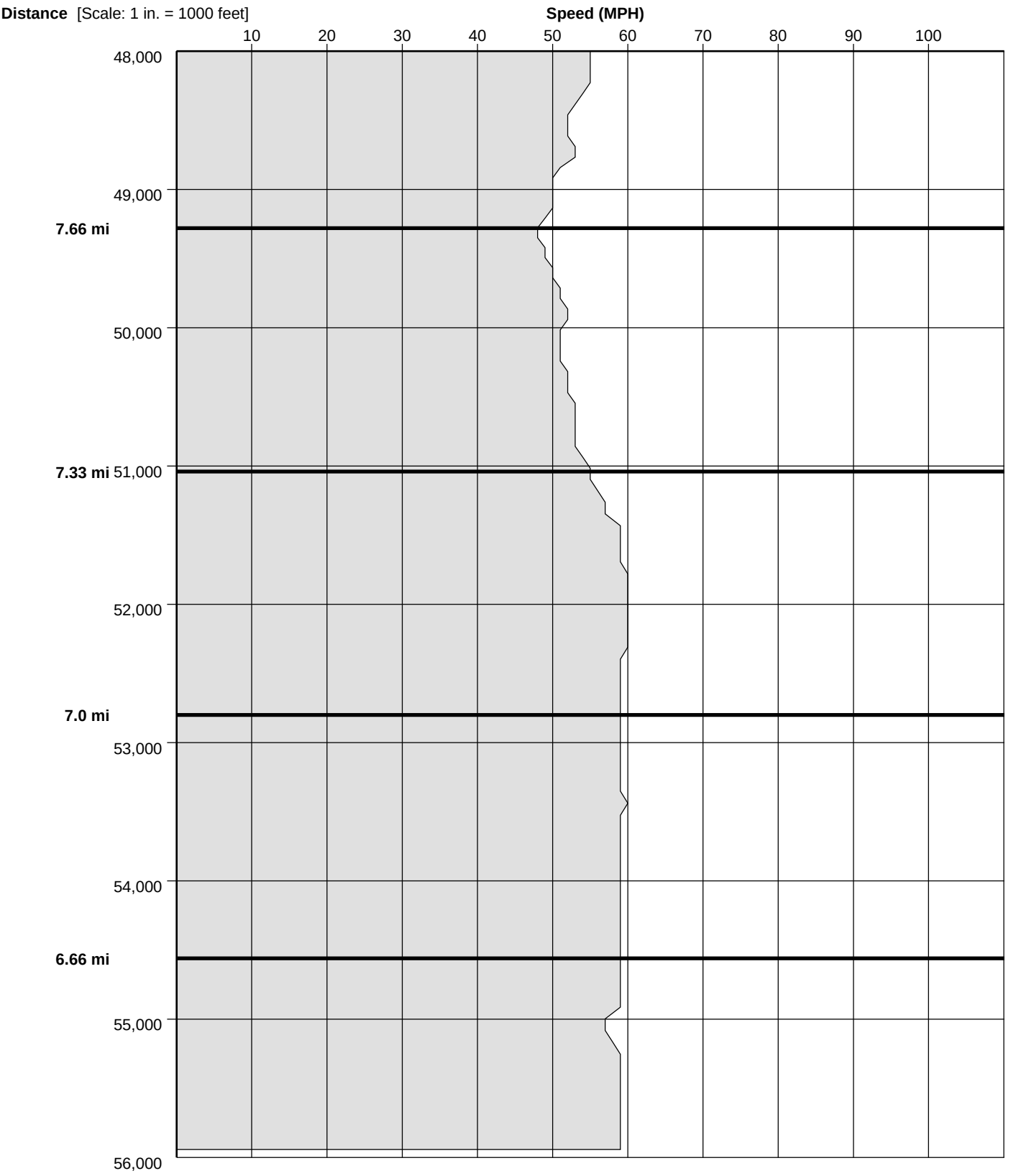
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 23**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

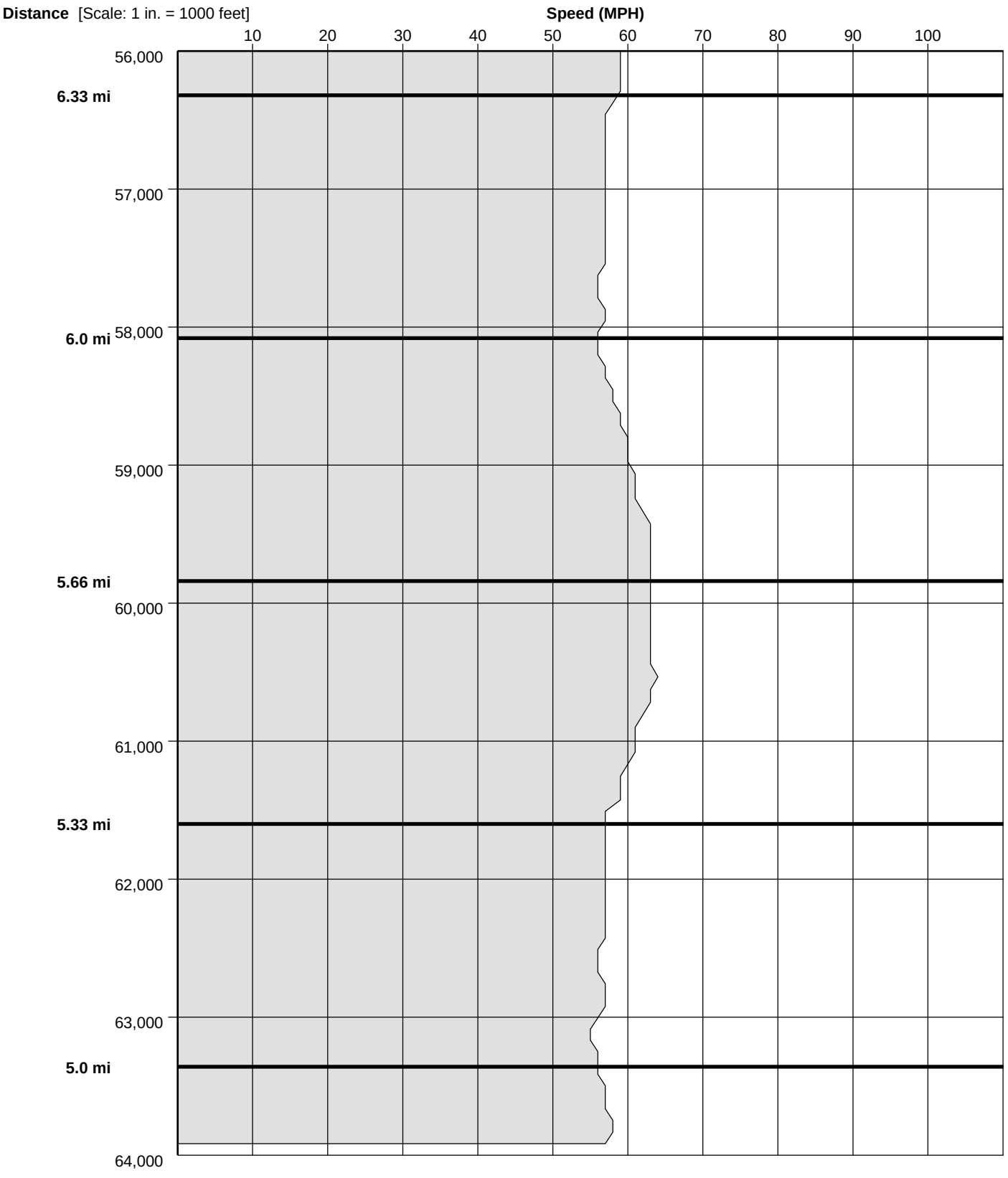
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 24**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

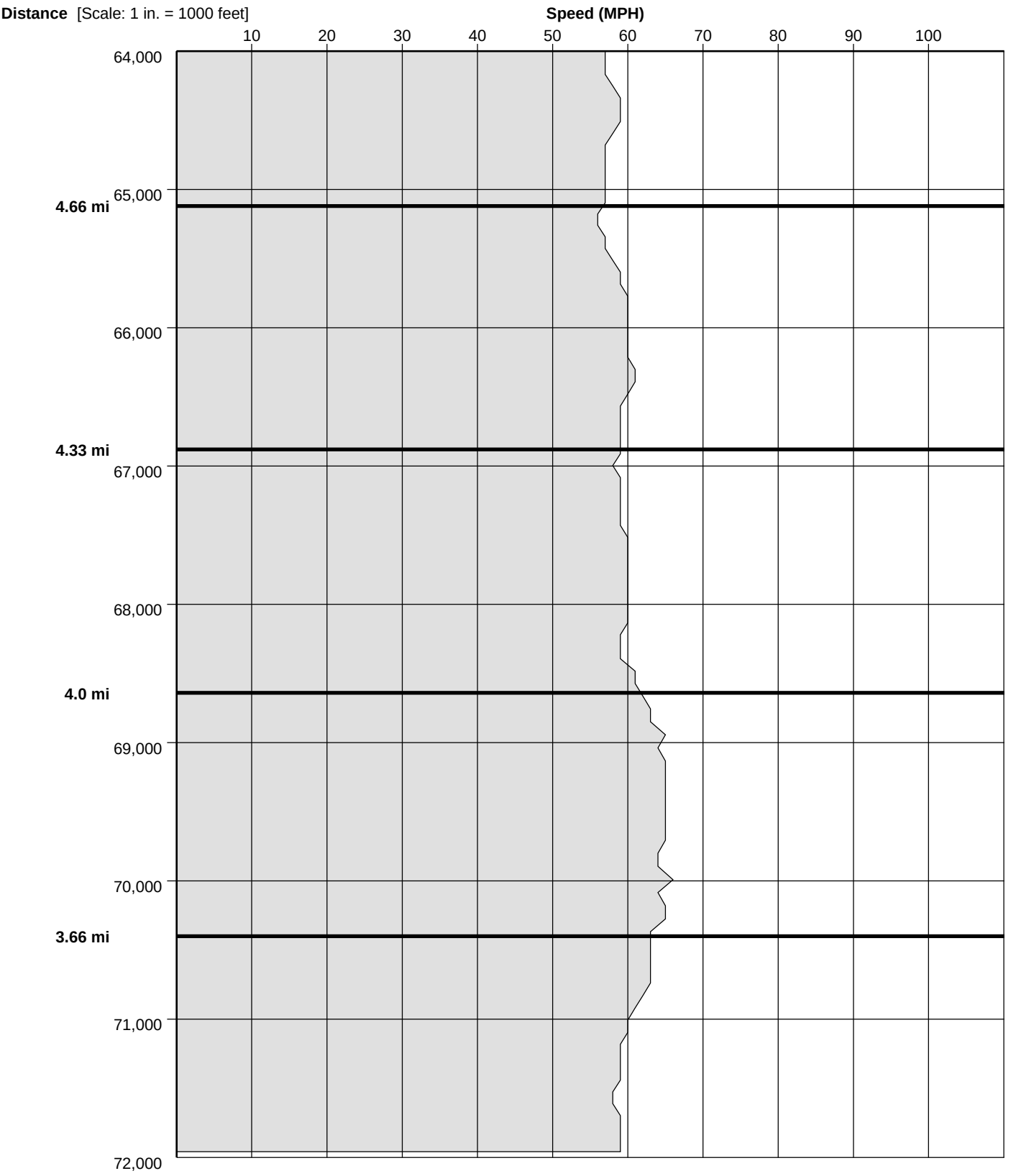
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 25**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

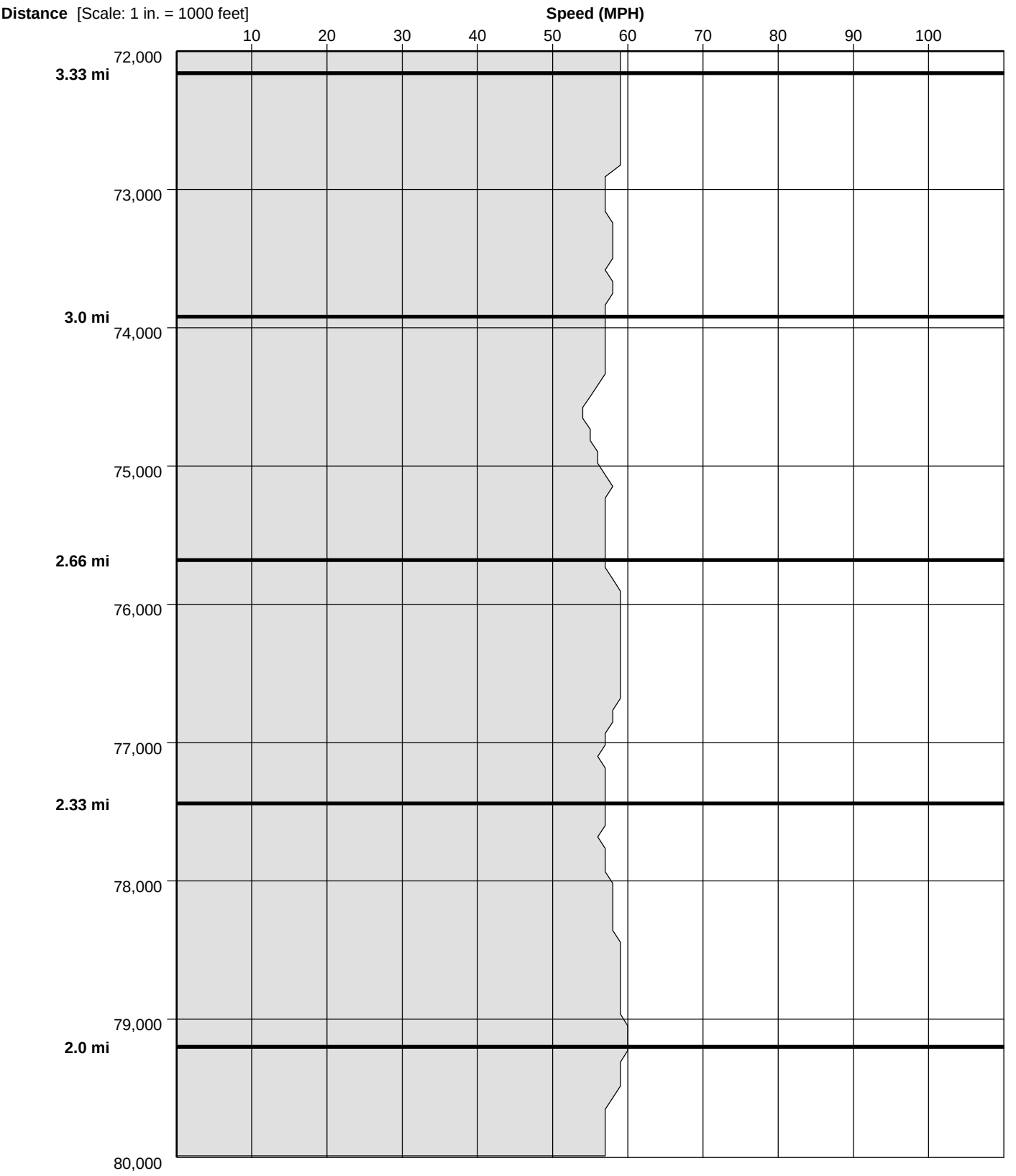
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 26**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

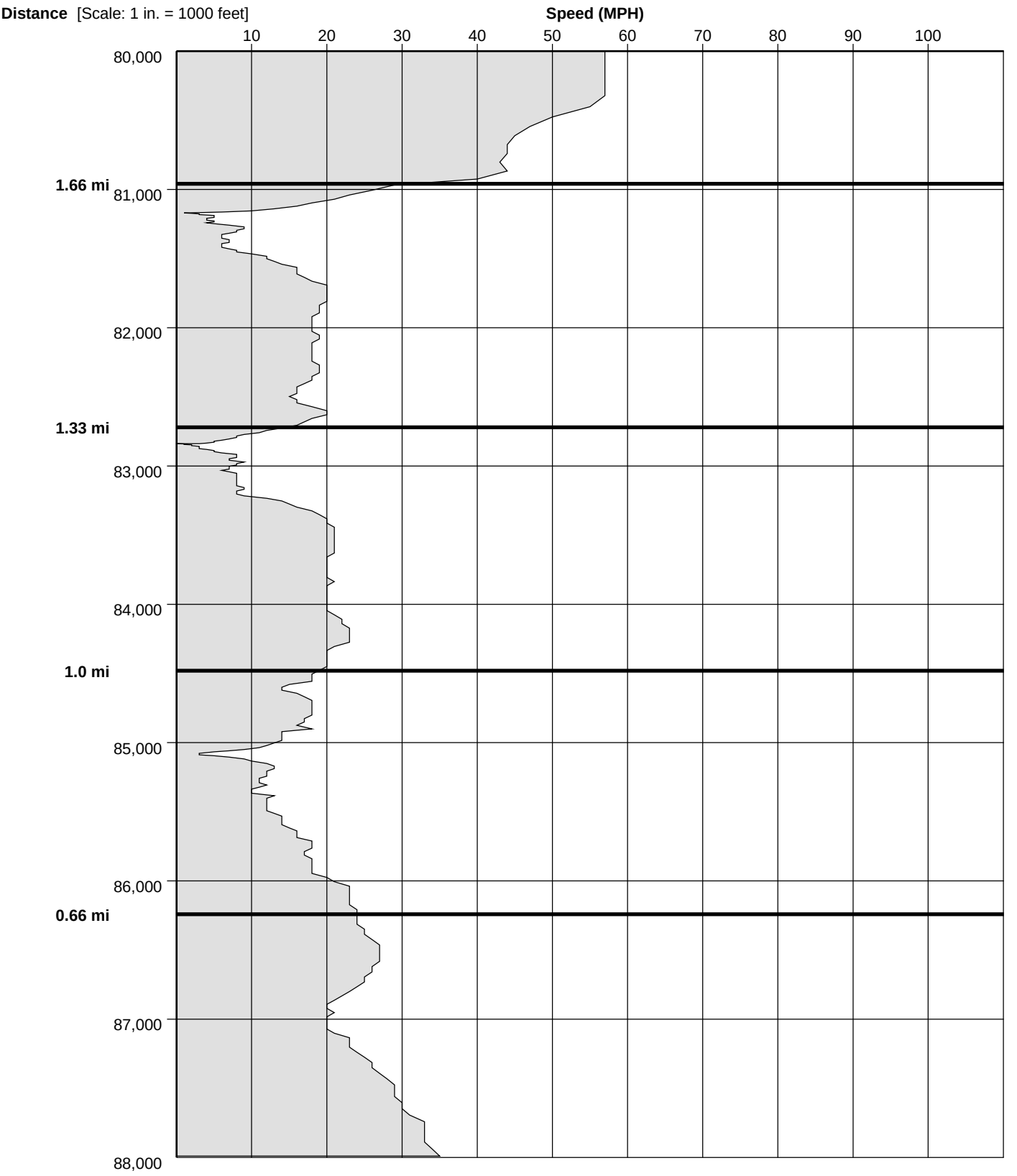
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 27**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

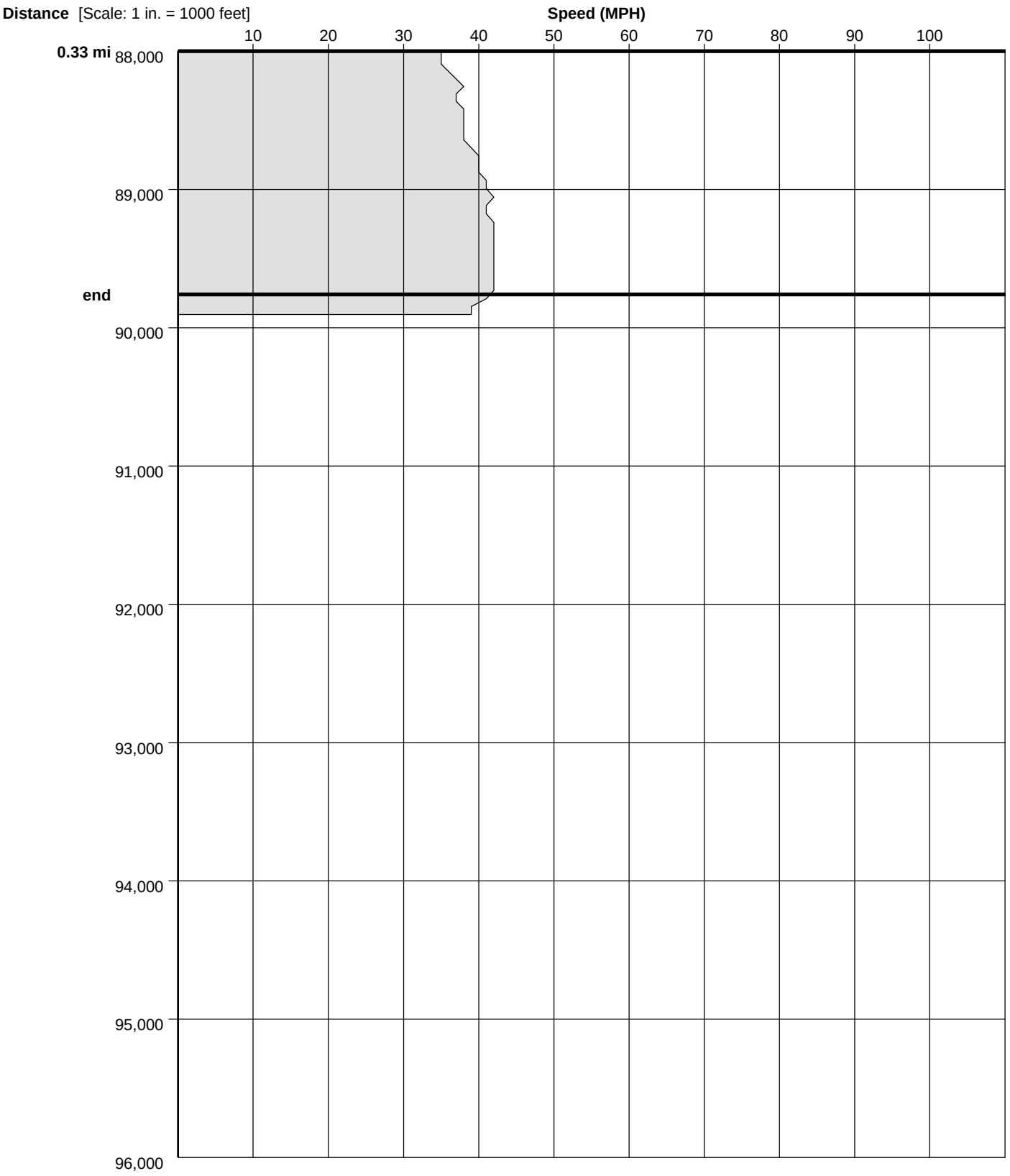
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 28**

Speed Profile

Run : I-75 SB-Jerry-SB-002 Start Time: 16:35 (This is a Before Run)



I-75 SB Jerry

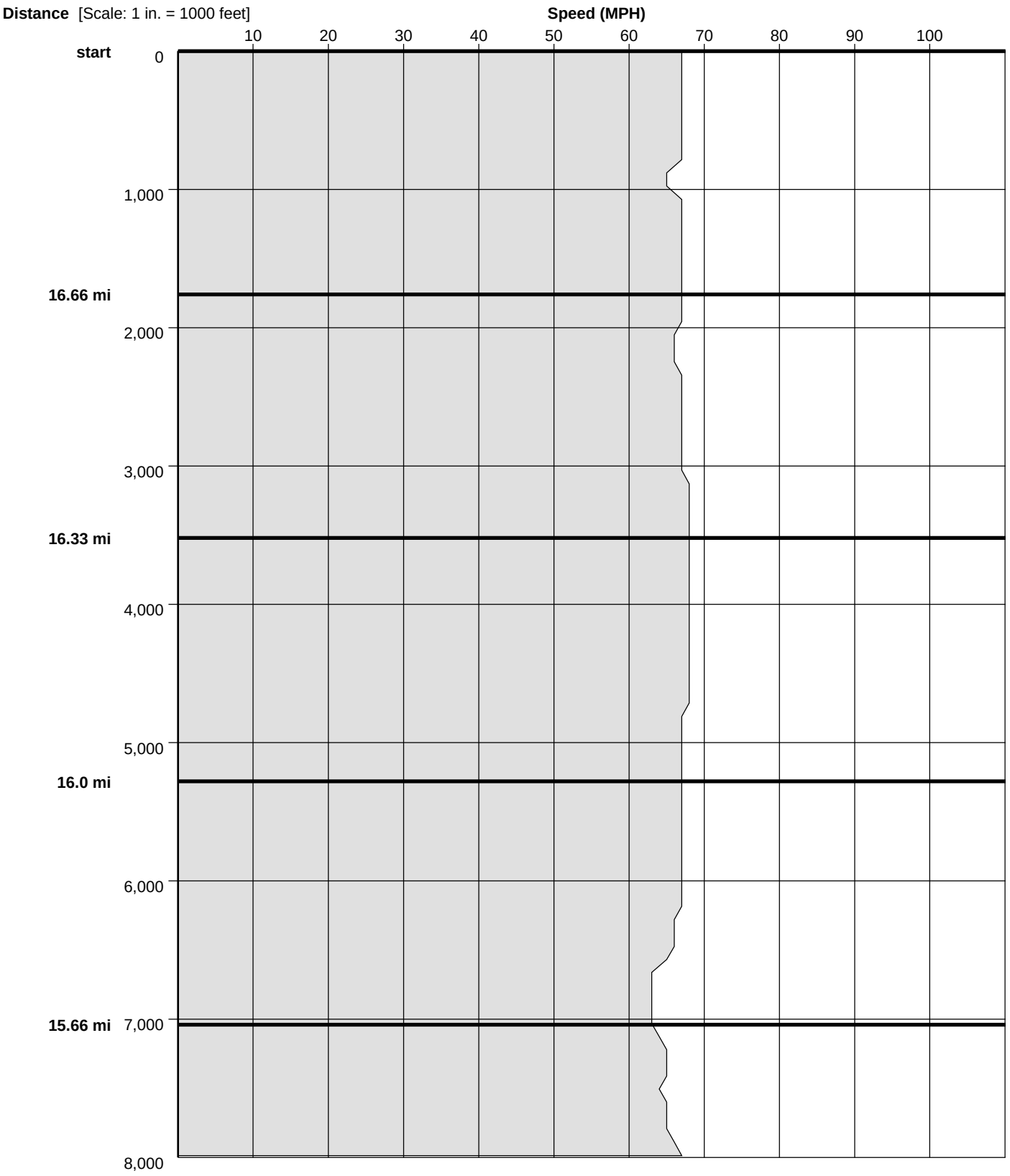
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 29**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

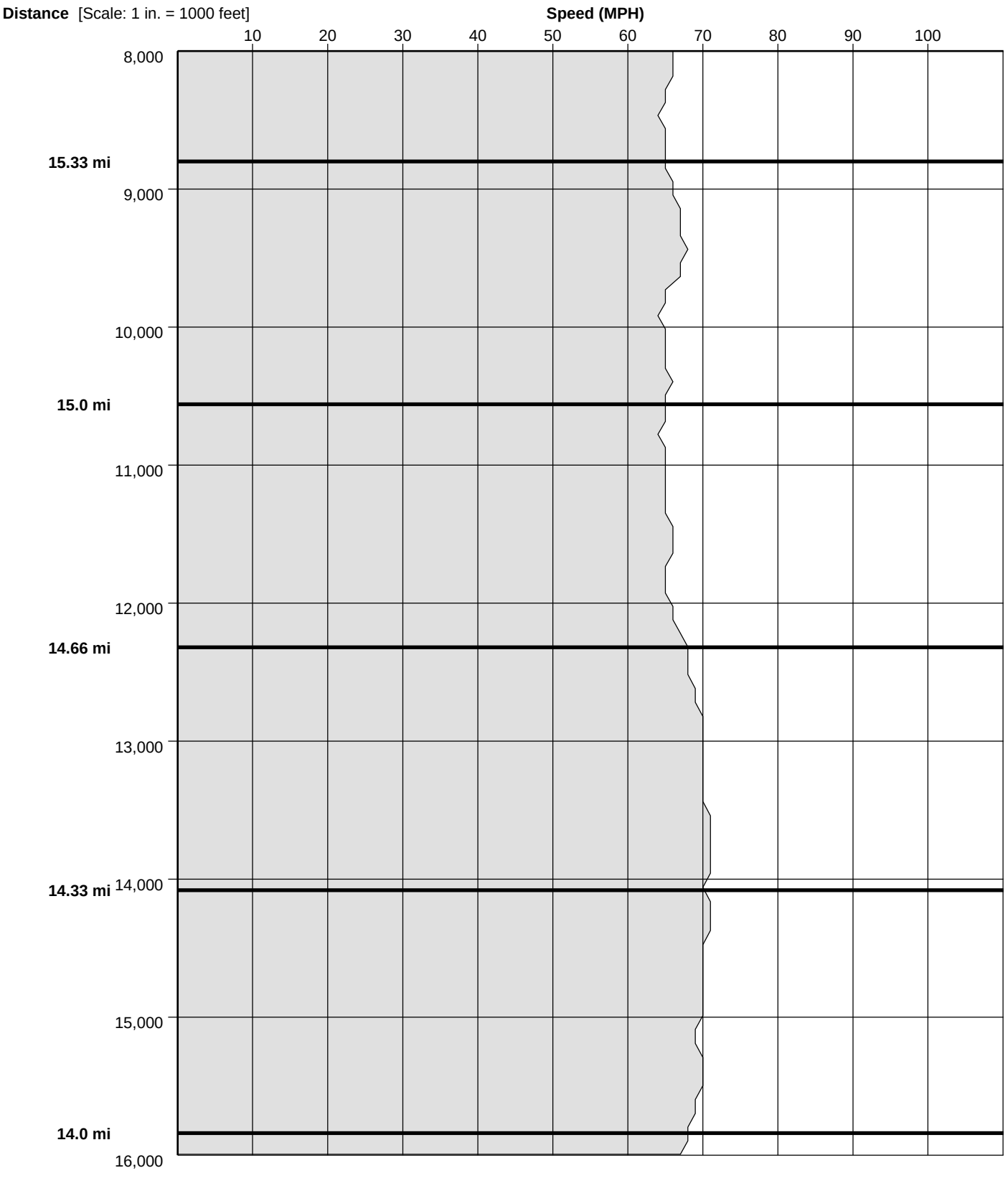
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 30**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

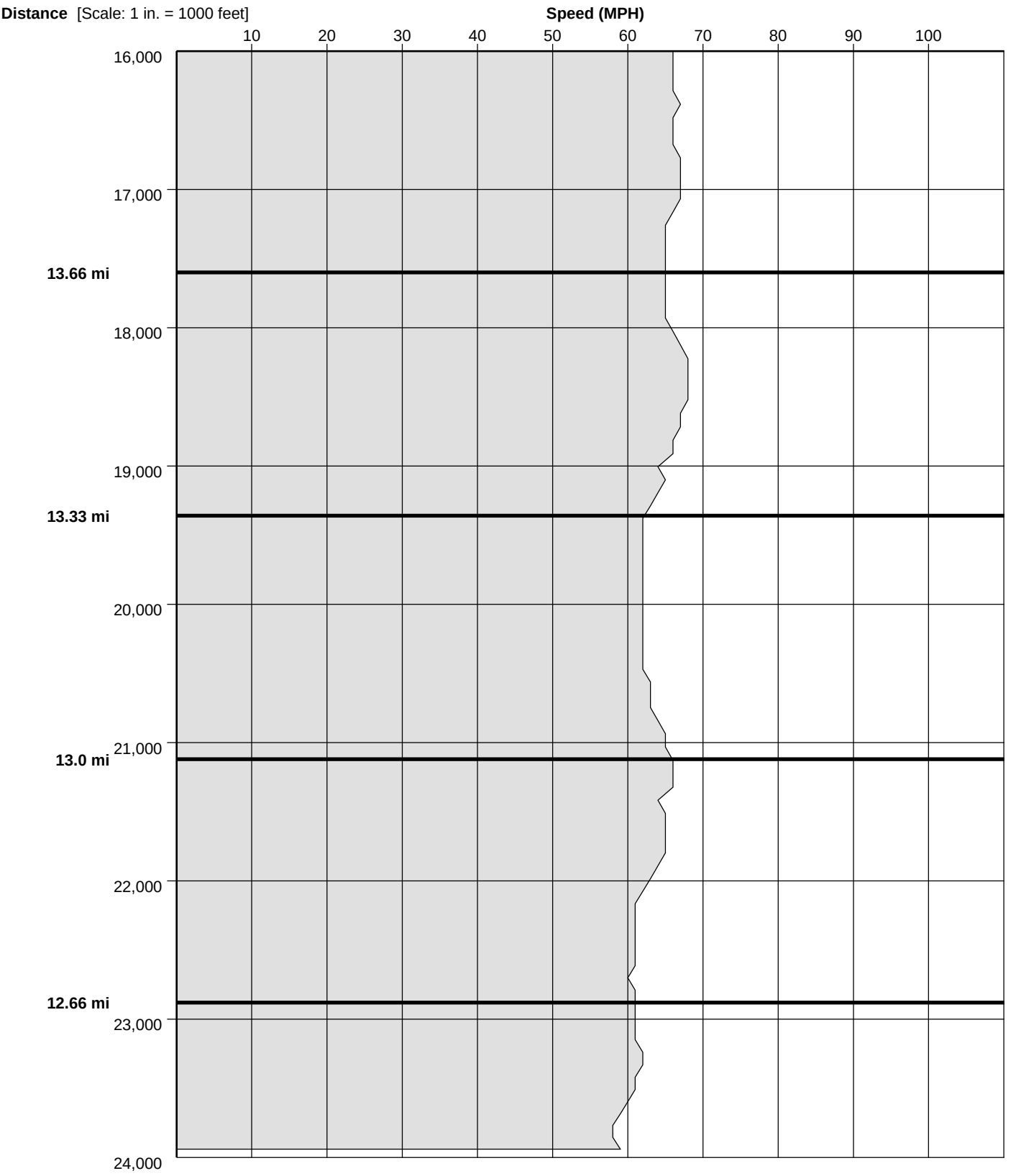
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 31**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

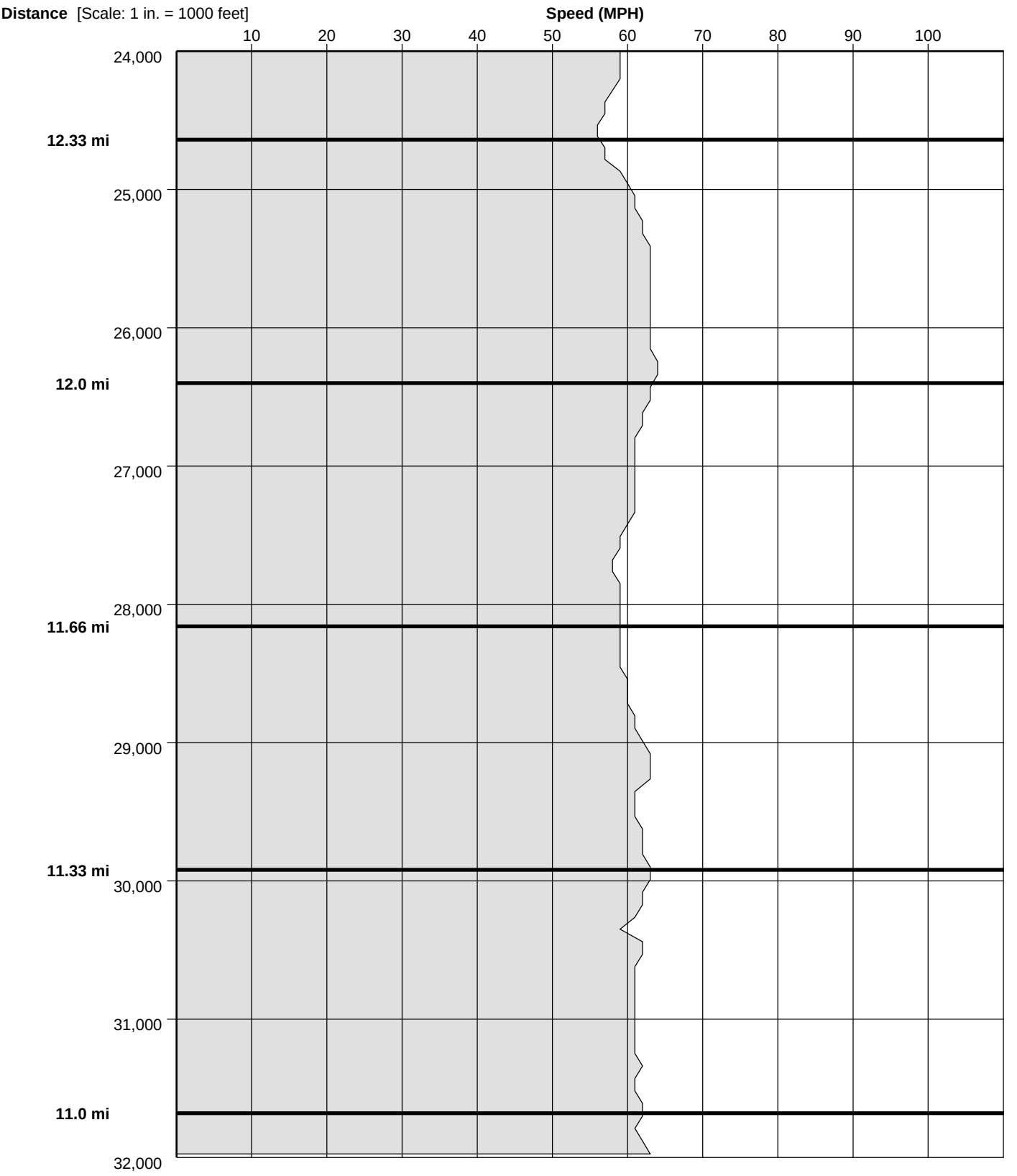
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 32**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

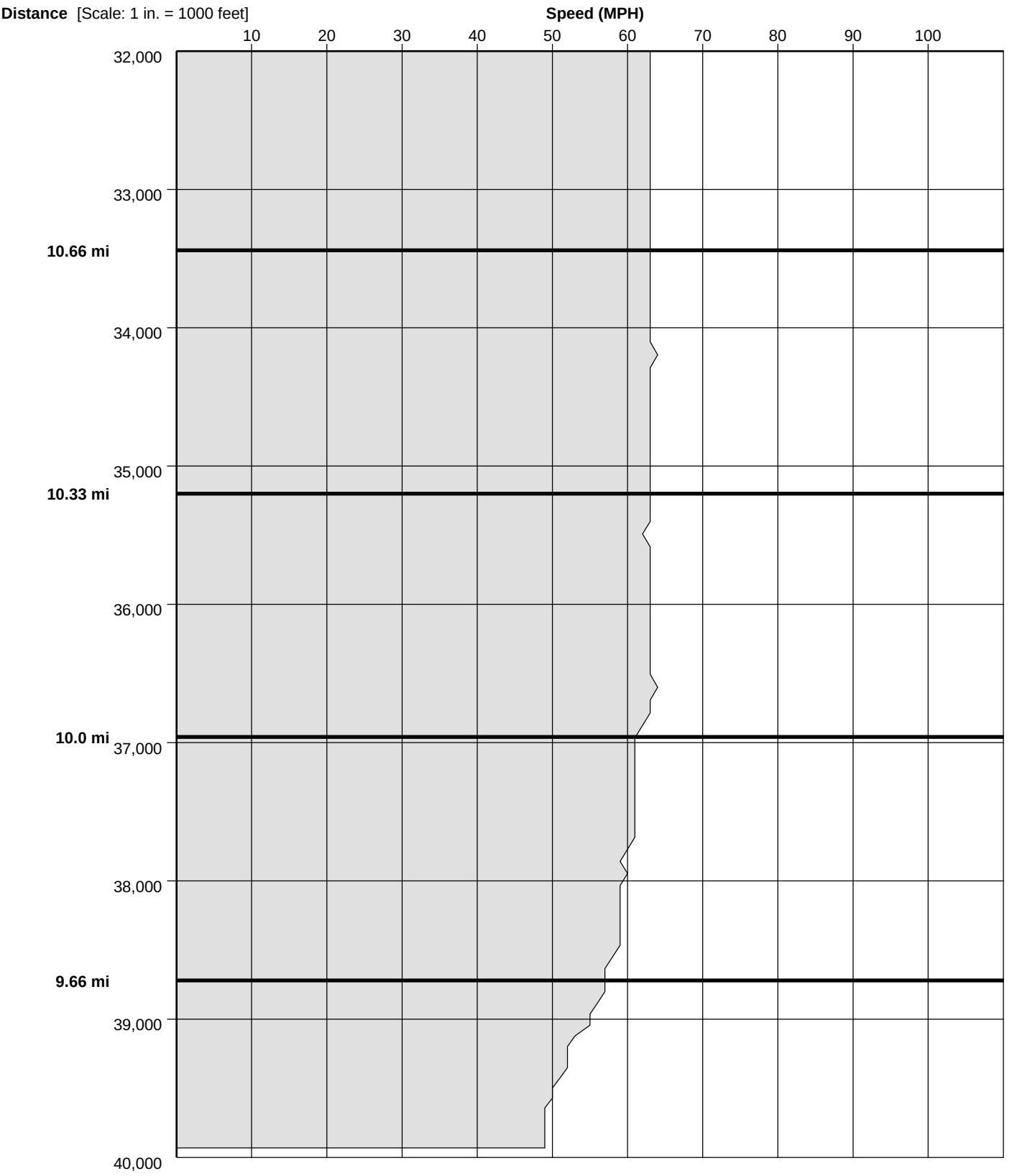
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 33**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

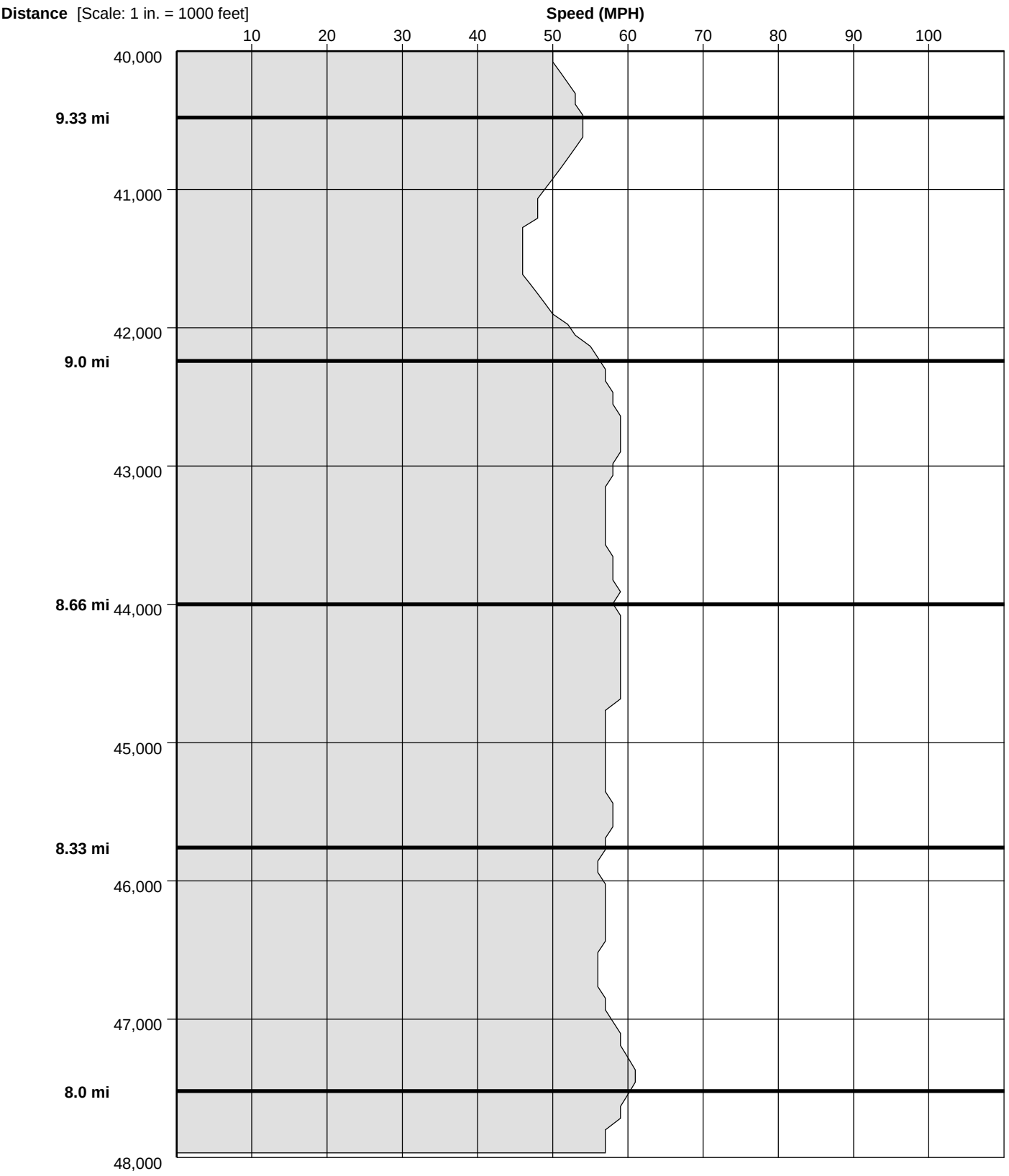
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 34**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

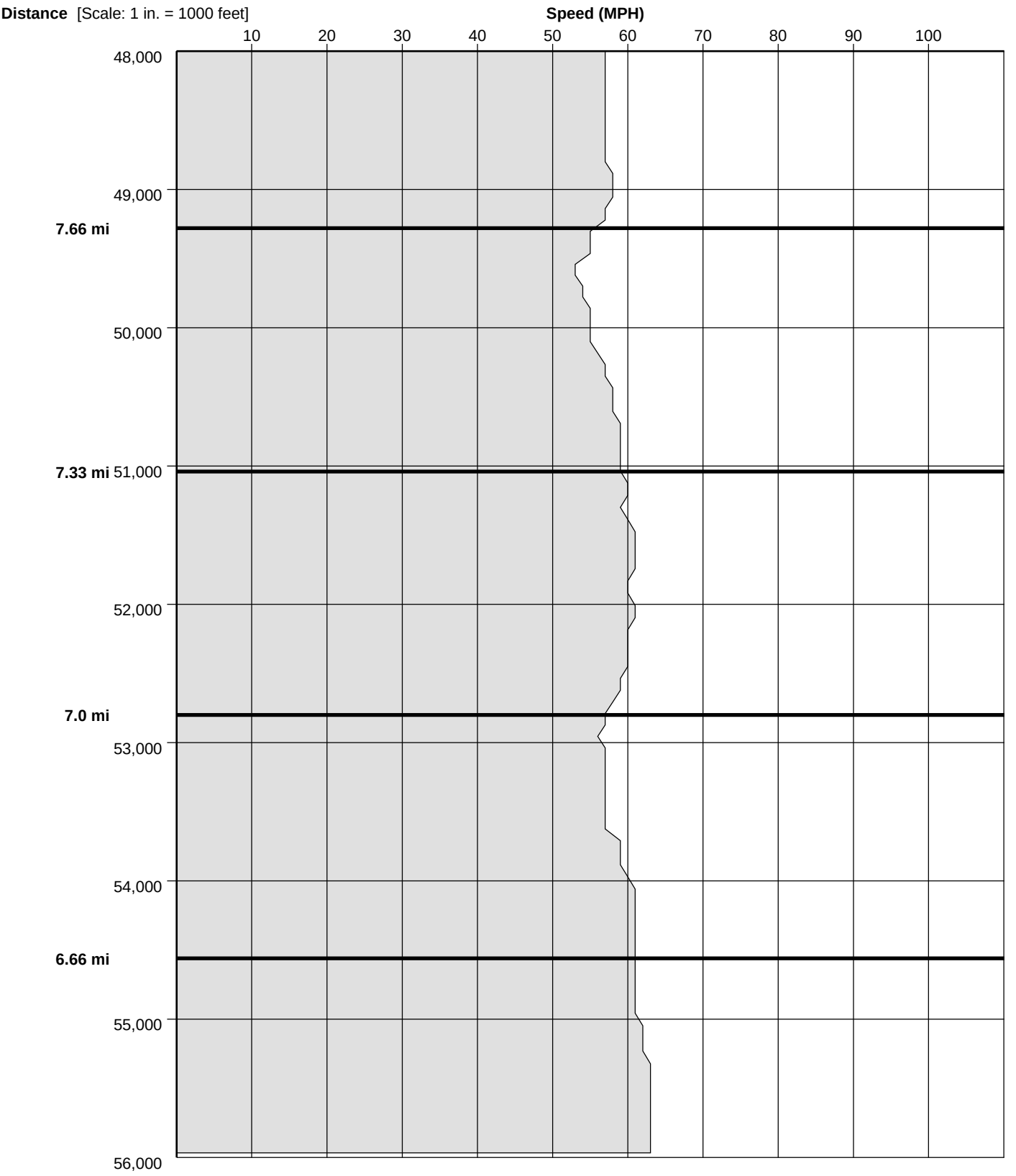
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 35**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

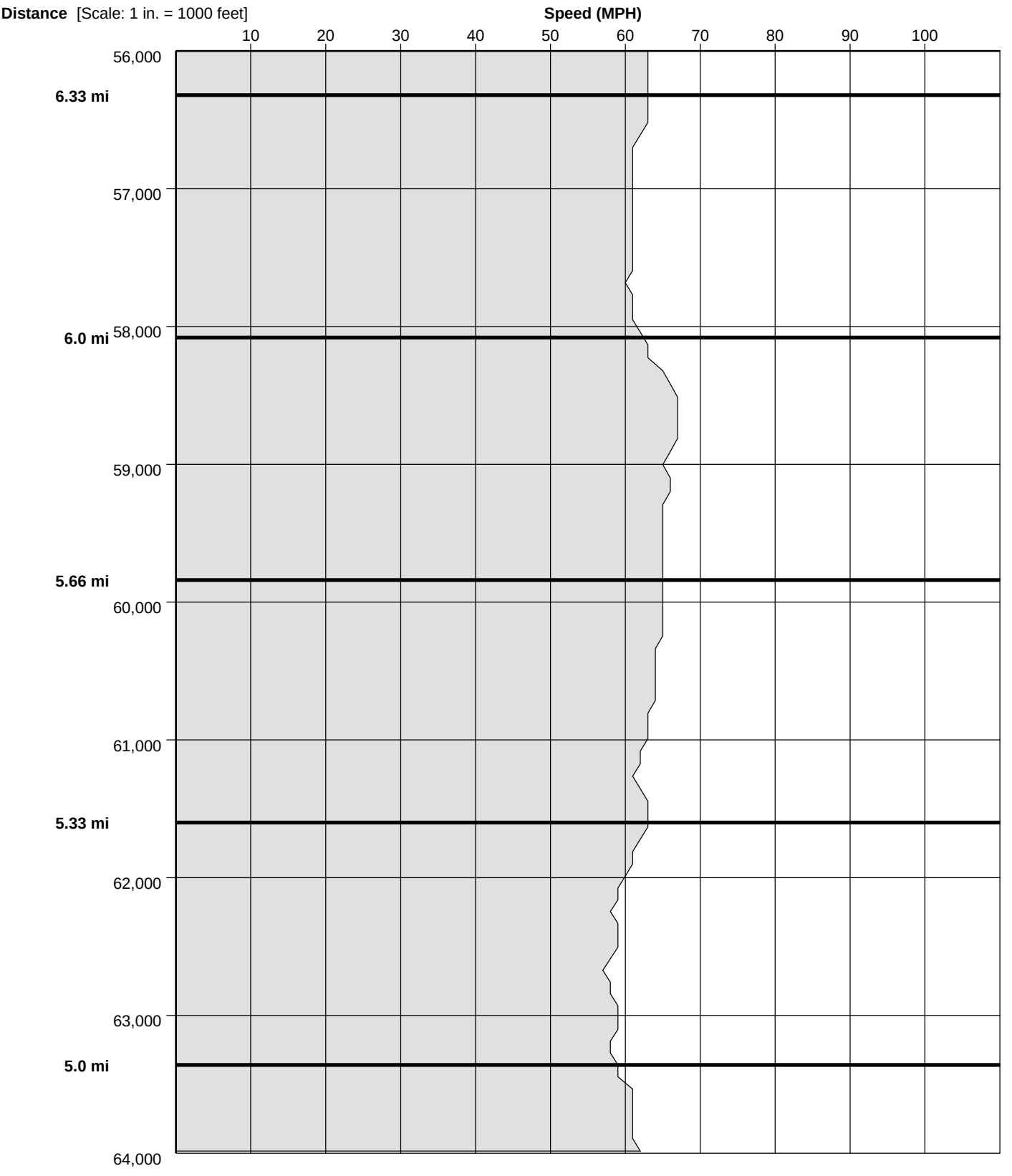
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 36**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

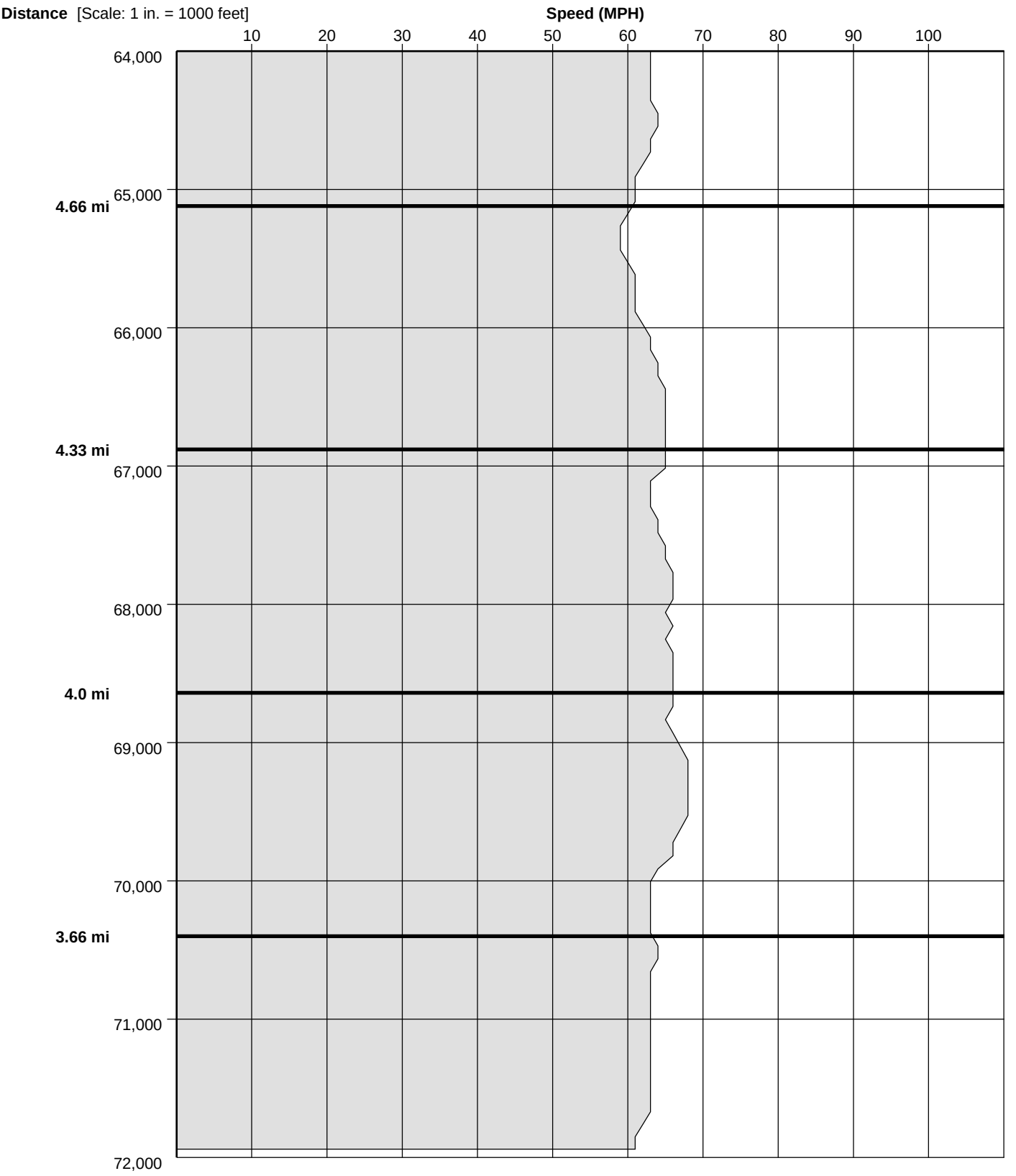
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 37**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

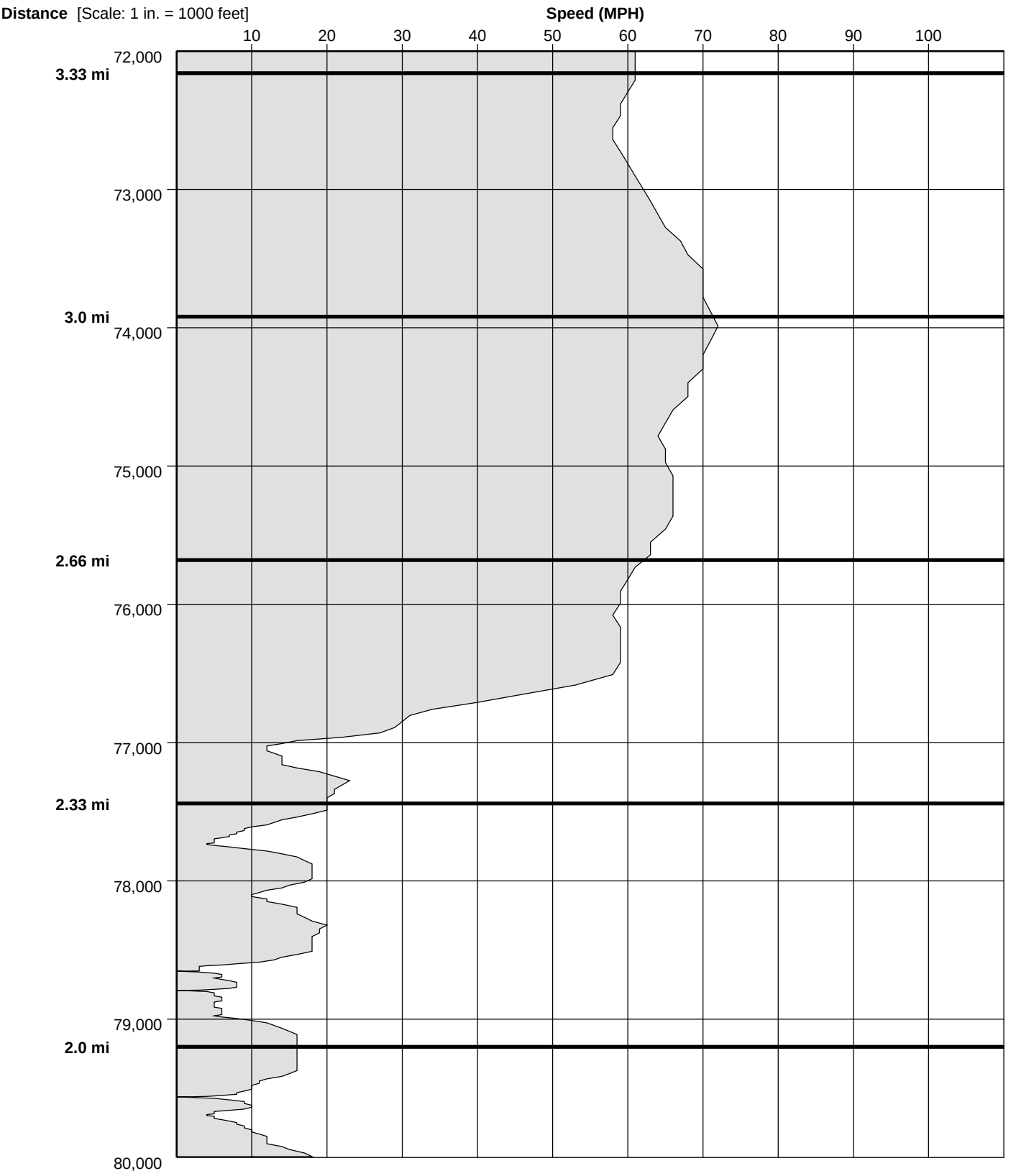
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 38**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

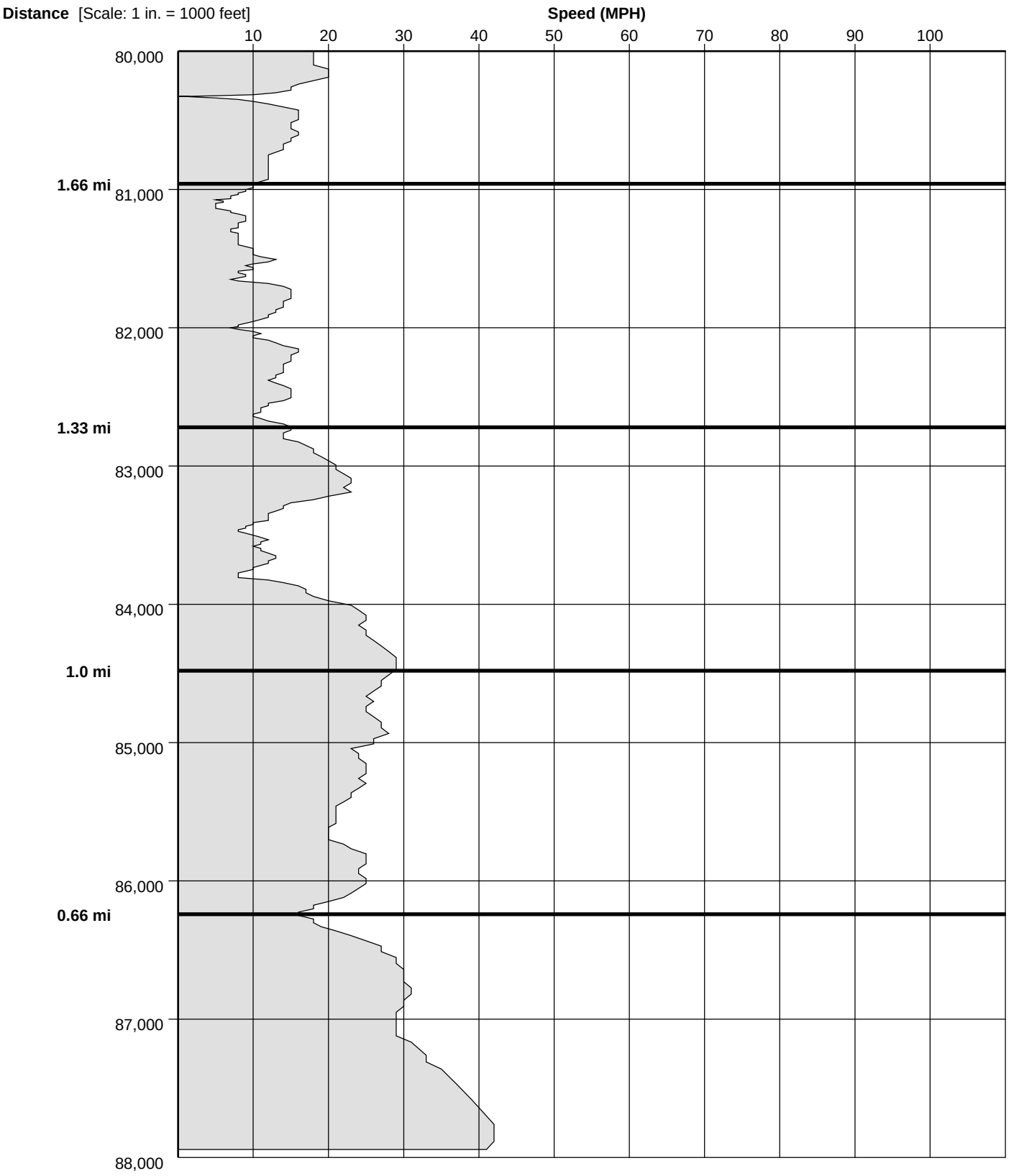
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 39**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



I-75 SB Jerry

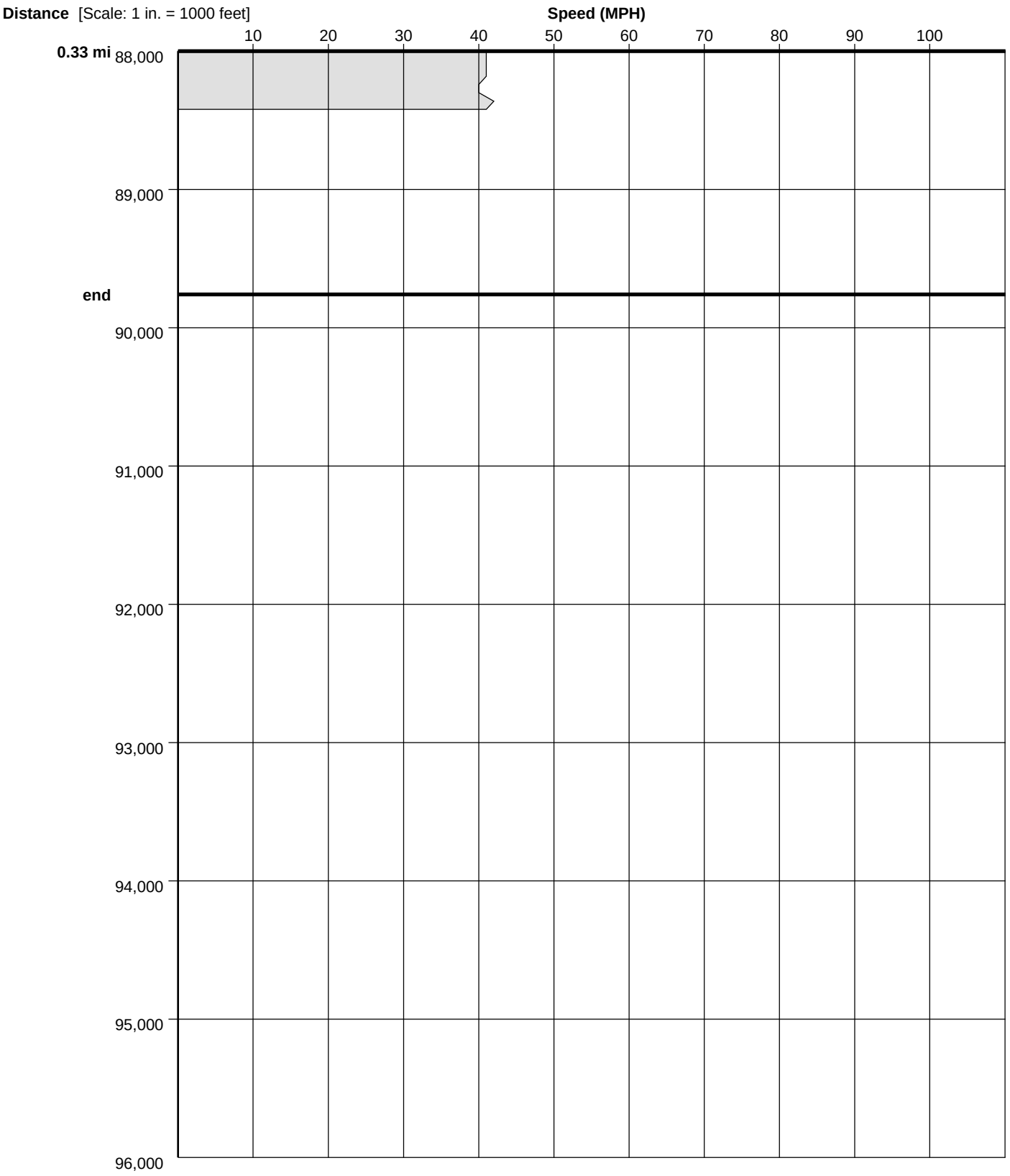
12-18-06

Heading Third Line

Study Name **: I-75 SB Jerry**
Study Date **: 12/21/2006**
Page No. **: 40**

Speed Profile

Run : I-75 SB-Jerry-SB-003 Start Time: 17:38 (This is a Before Run)



PC-Travel for Windows Reports for study: I-75 SB Li

I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 2**

Study Summary

Runs Used in This Study

Node Info

#	Len	Name
1	0	start
2	1760	16.66 mi
3	1760	16.33 mi
4	1760	16.0 mi
5	1760	15.66 mi
6	1760	15.33 mi
7	1760	15.0 mi
8	1760	14.66 mi
9	1760	14.33 mi
10	1760	14.0 mi
11	1760	13.66 mi
12	1760	13.33 mi
13	1760	13.0 mi
14	1760	12.66 mi
15	1760	12.33 mi
16	1760	12.0 mi
17	1760	11.66 mi
18	1760	11.33 mi
19	1760	11.0 mi
20	1760	10.66 mi
21	1760	10.33 mi
22	1760	10.0 mi
23	1760	9.66 mi
24	1760	9.33 mi
25	1760	9.0 mi
26	1760	8.66 mi
27	1760	8.33 mi
28	1760	8.0 mi
29	1760	7.66 mi
30	1760	7.33 mi
31	1760	7.0 mi
32	1760	6.66 mi
33	1760	6.33 mi
34	1760	6.0 mi
35	1760	5.66 mi
36	1760	5.33 mi
37	1760	5.0 mi
38	1760	4.66 mi
39	1760	4.33 mi

40	1760	4.0 mi
41	1760	3.66 mi
42	1760	3.33 mi
43	1760	3.0 mi
44	1760	2.66 mi
45	1760	2.33 mi
46	1760	2.0 mi
47	1760	1.66 mi
48	1760	1.33 mi
49	1760	1.0 mi
50	1760	0.66 mi
51	1760	0.33 mi
52	1760	end

Length of Study Route = 89,760 feet

Run Title	Start Date	Start Time	Length	Before/ After	Run Type
I-75 SB-Li-SB-001	12/18/06	15:52	86649	Before	Secondary
I-75 SB-Li-SB-002	12/18/06	16:42	88035	Before	Secondary
I-75 SB-Li-SB-003	12/18/06	18:00	88556	Before	Secondary

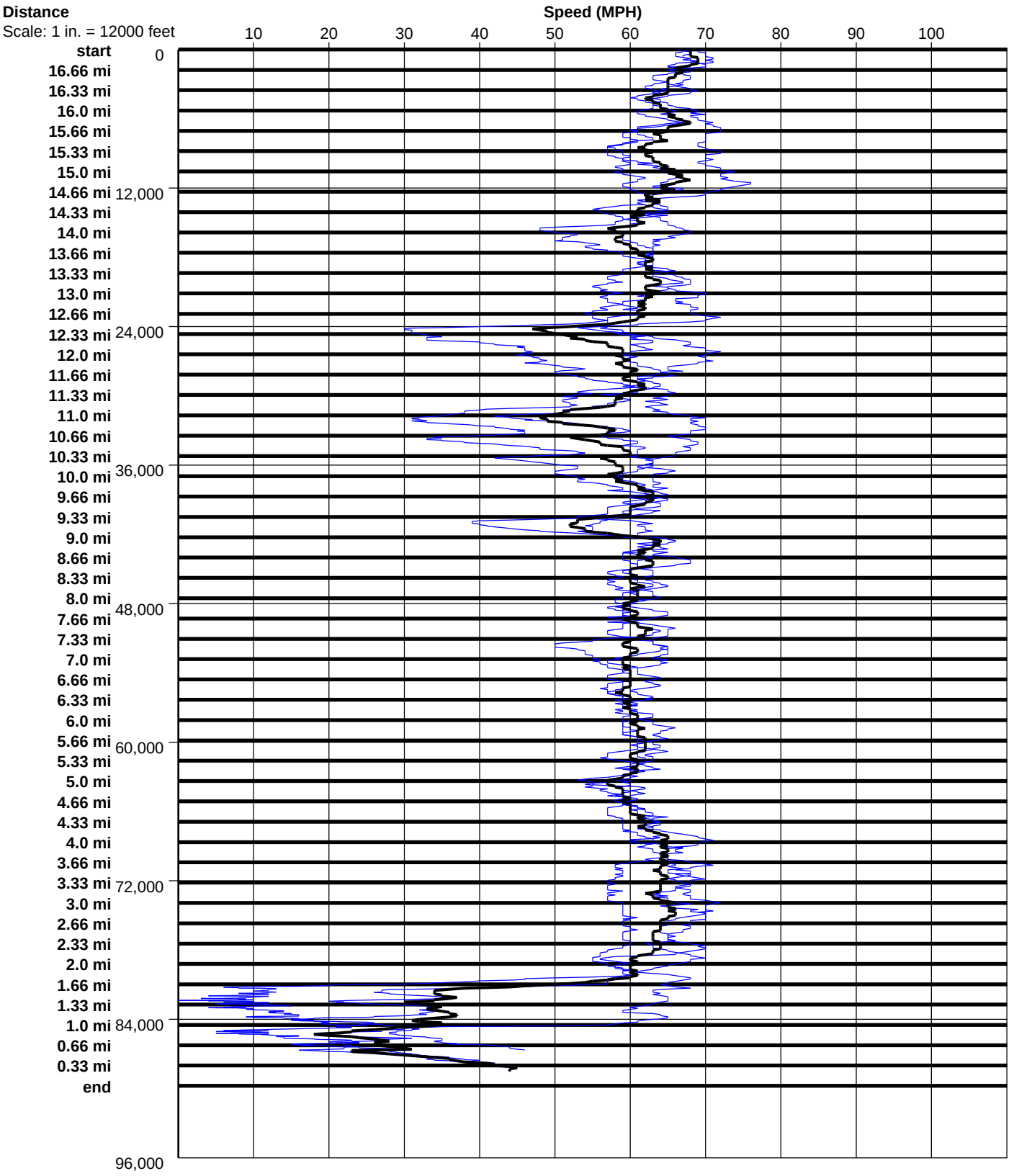
Notes:

I-75 SB Li

12-18-06

Study Name : **I-75 SB Li**
Study Date : **12/21/2006**
Page No. : **4**

Speed/Distance Profiles of All Runs

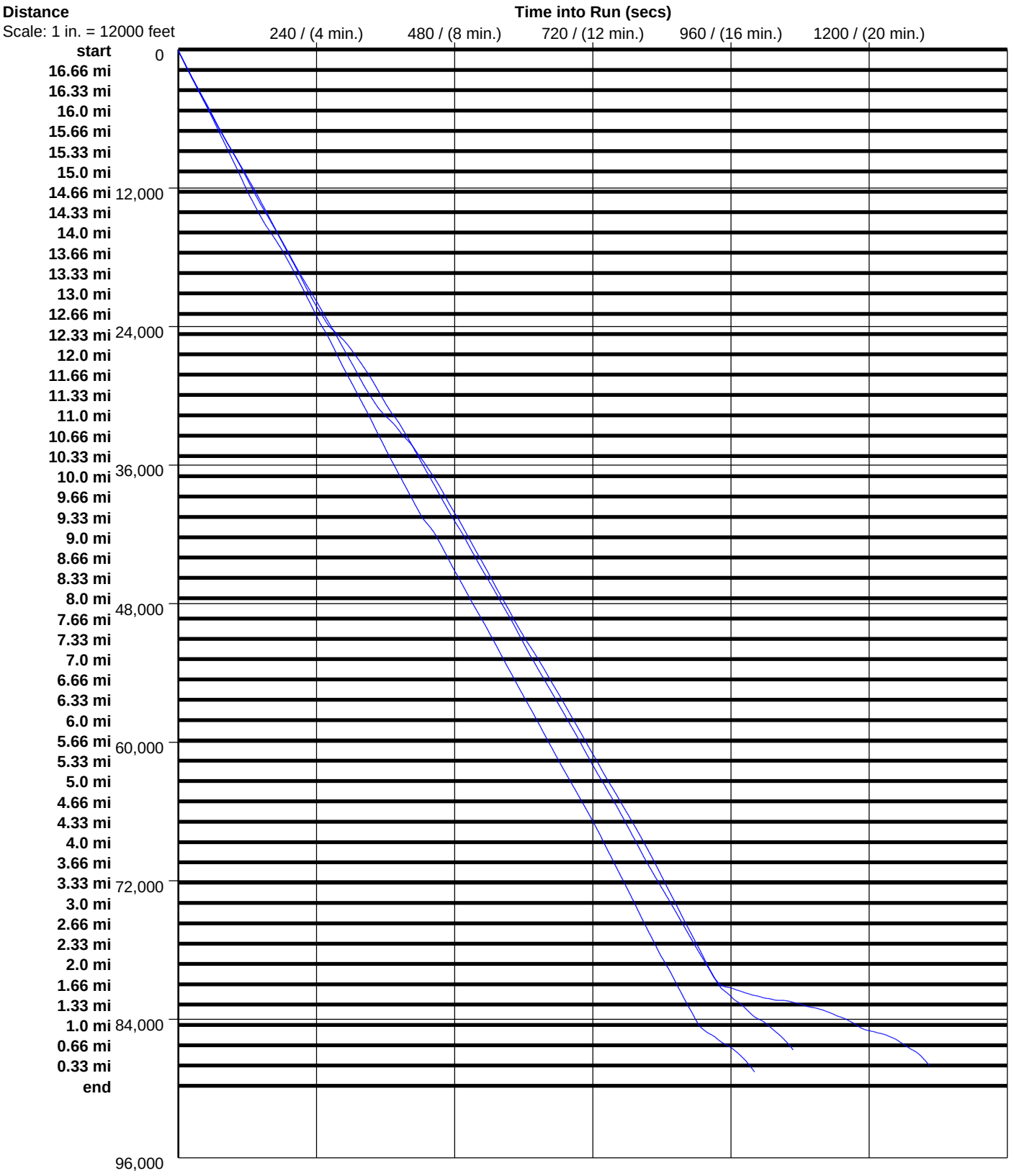


I-75 SB Li

12-18-06

Study Name : **I-75 SB Li**
Study Date : **12/21/2006**
Page No. : **5**

Time/Space Trajectories of All Runs



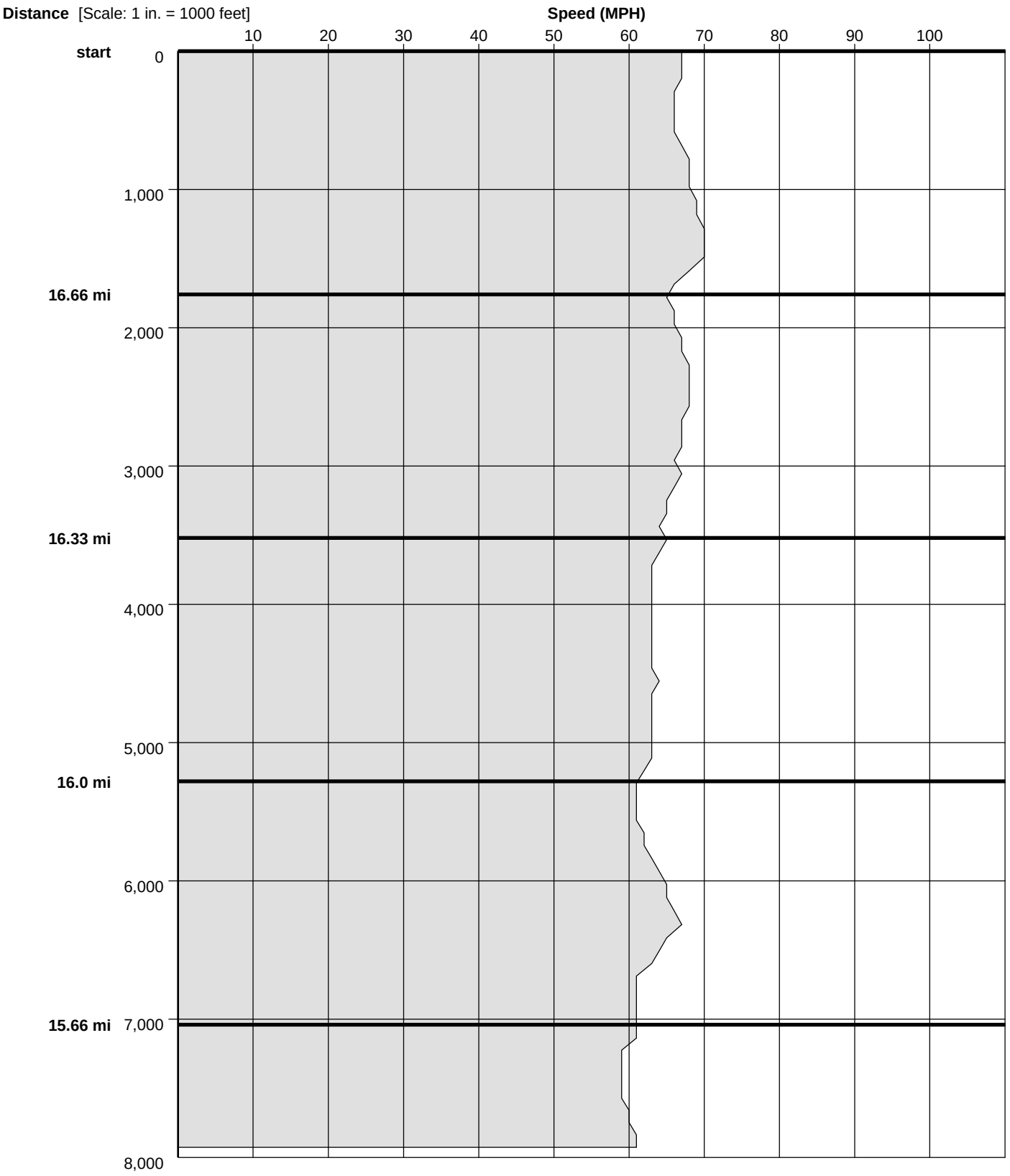
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 6**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



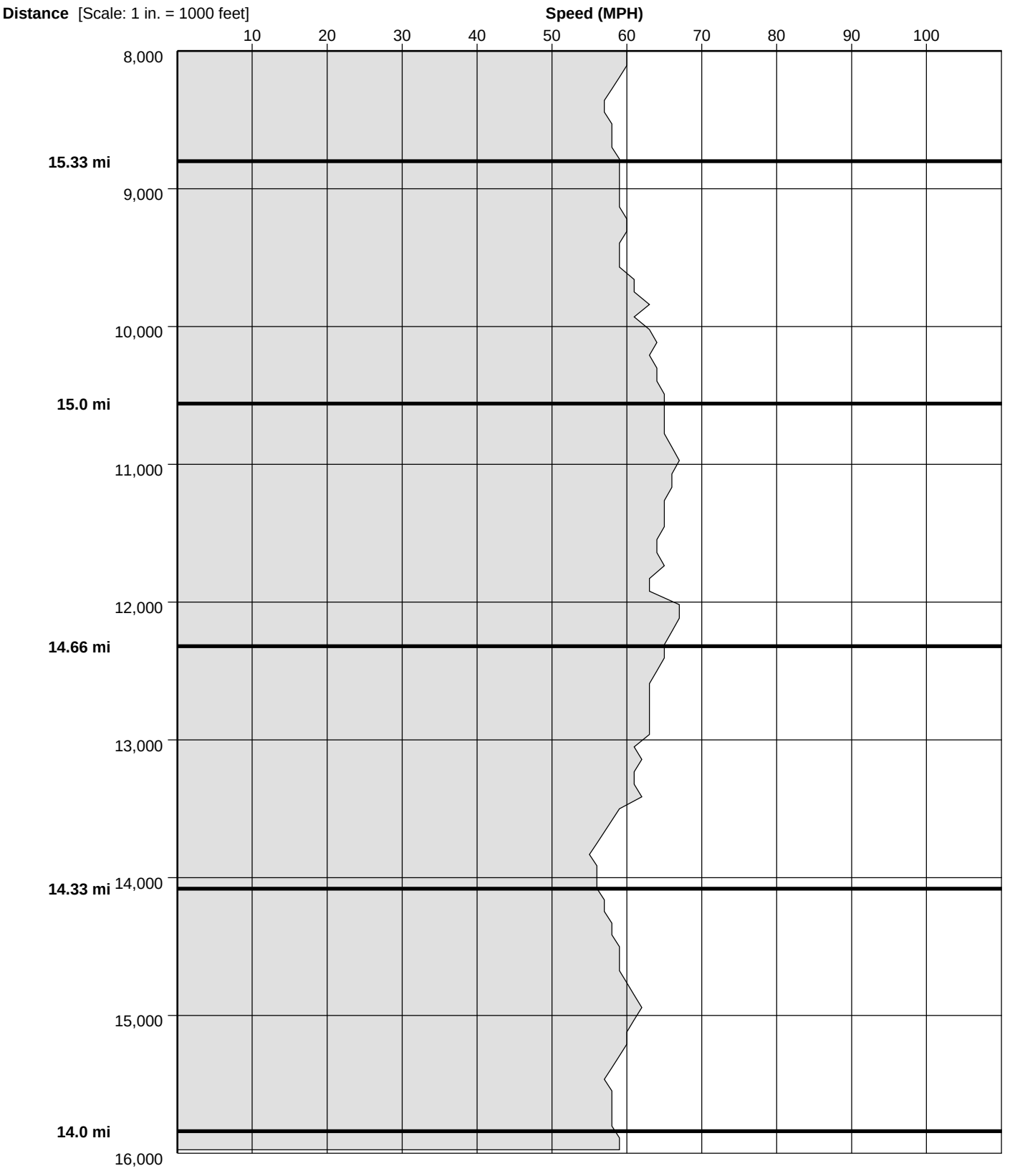
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 7**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



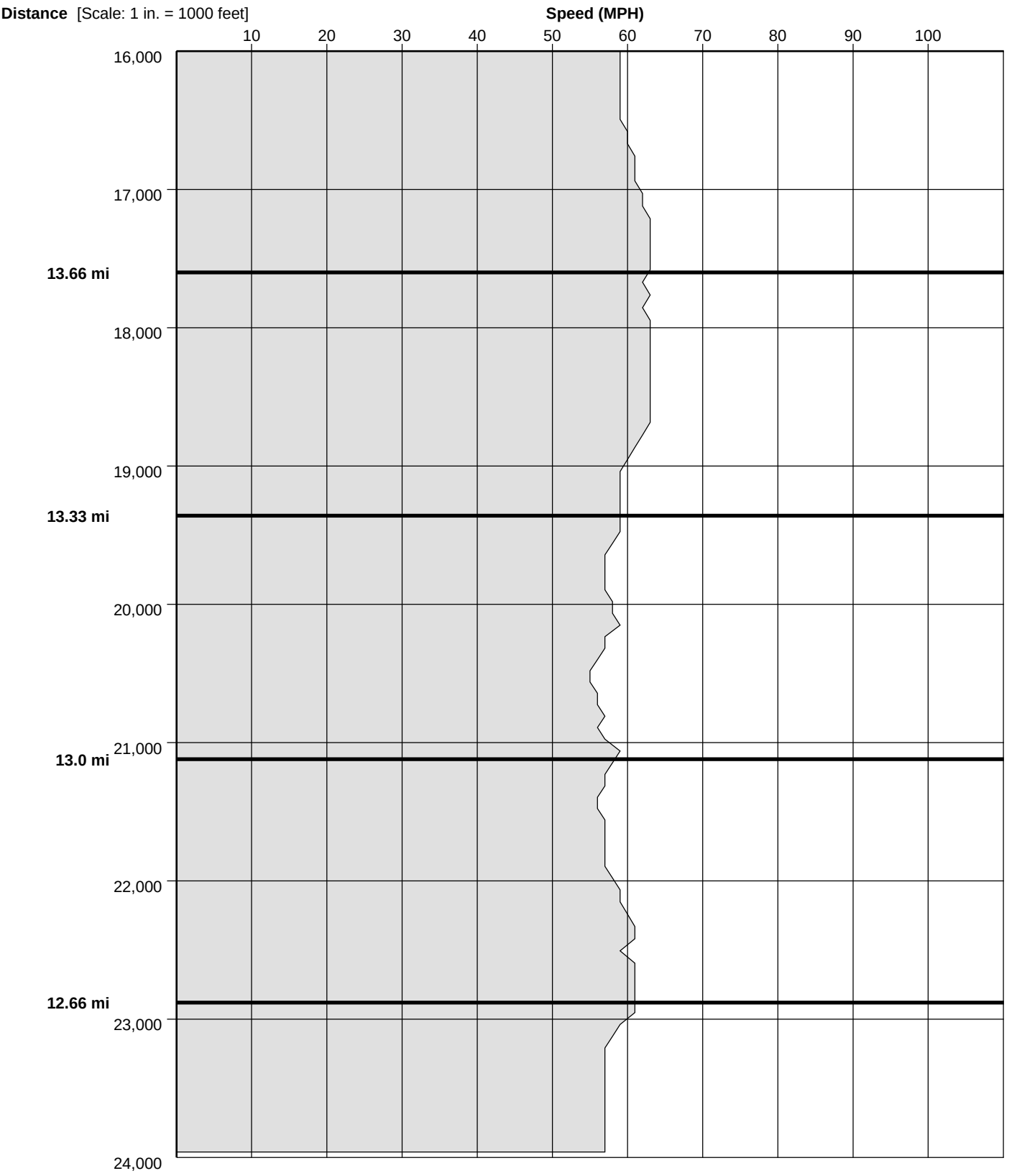
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 8**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



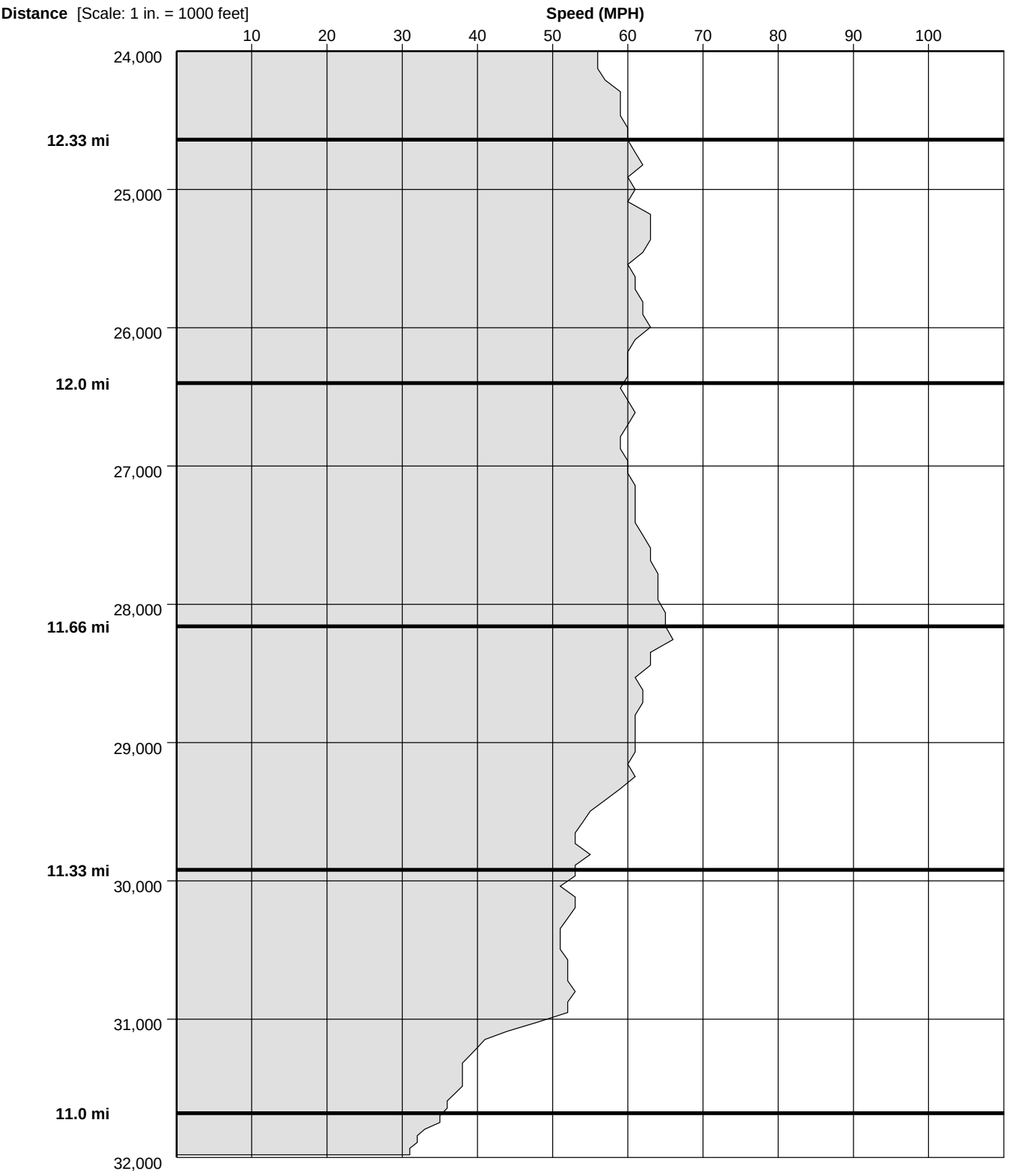
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 9**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



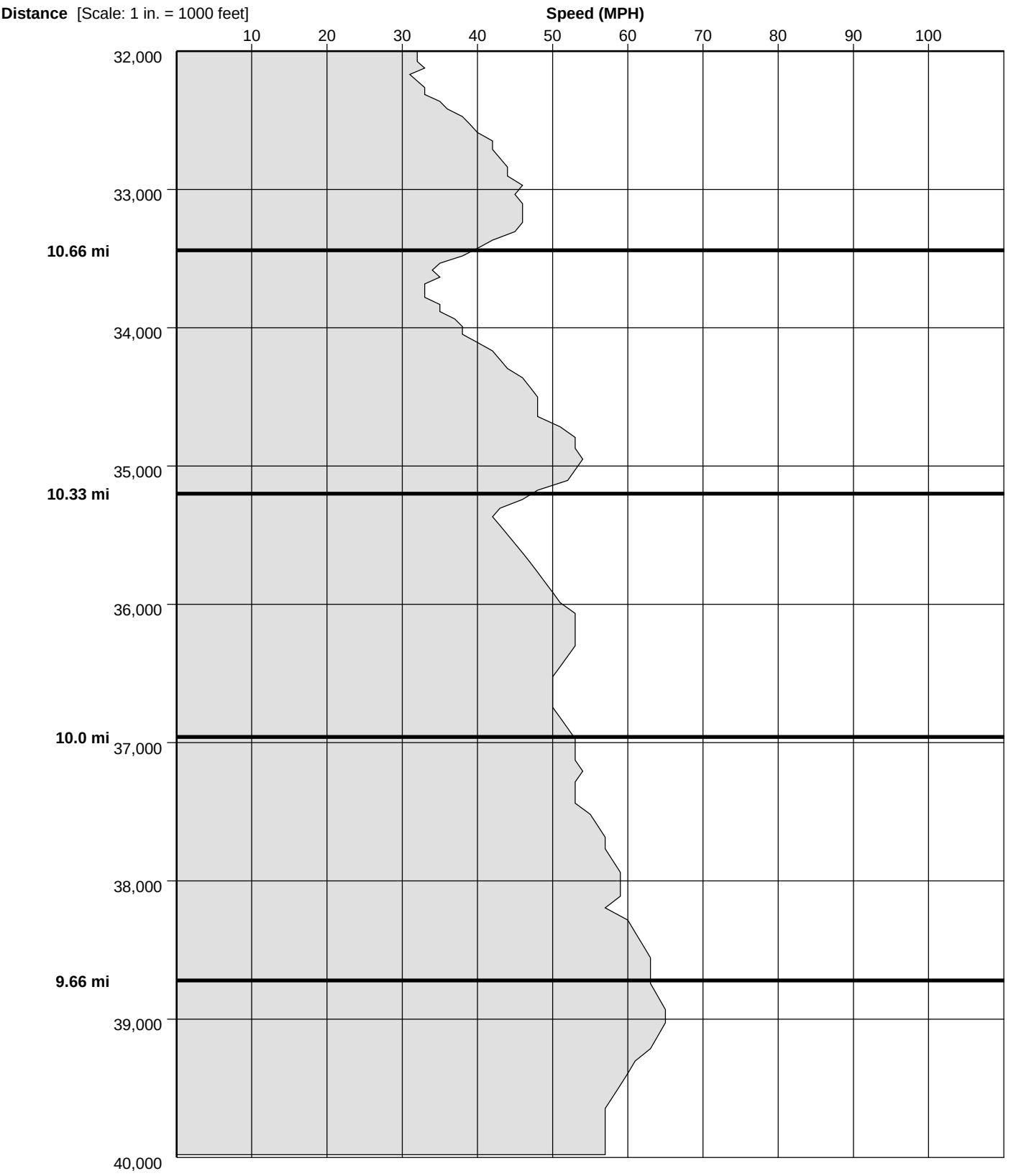
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 10**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



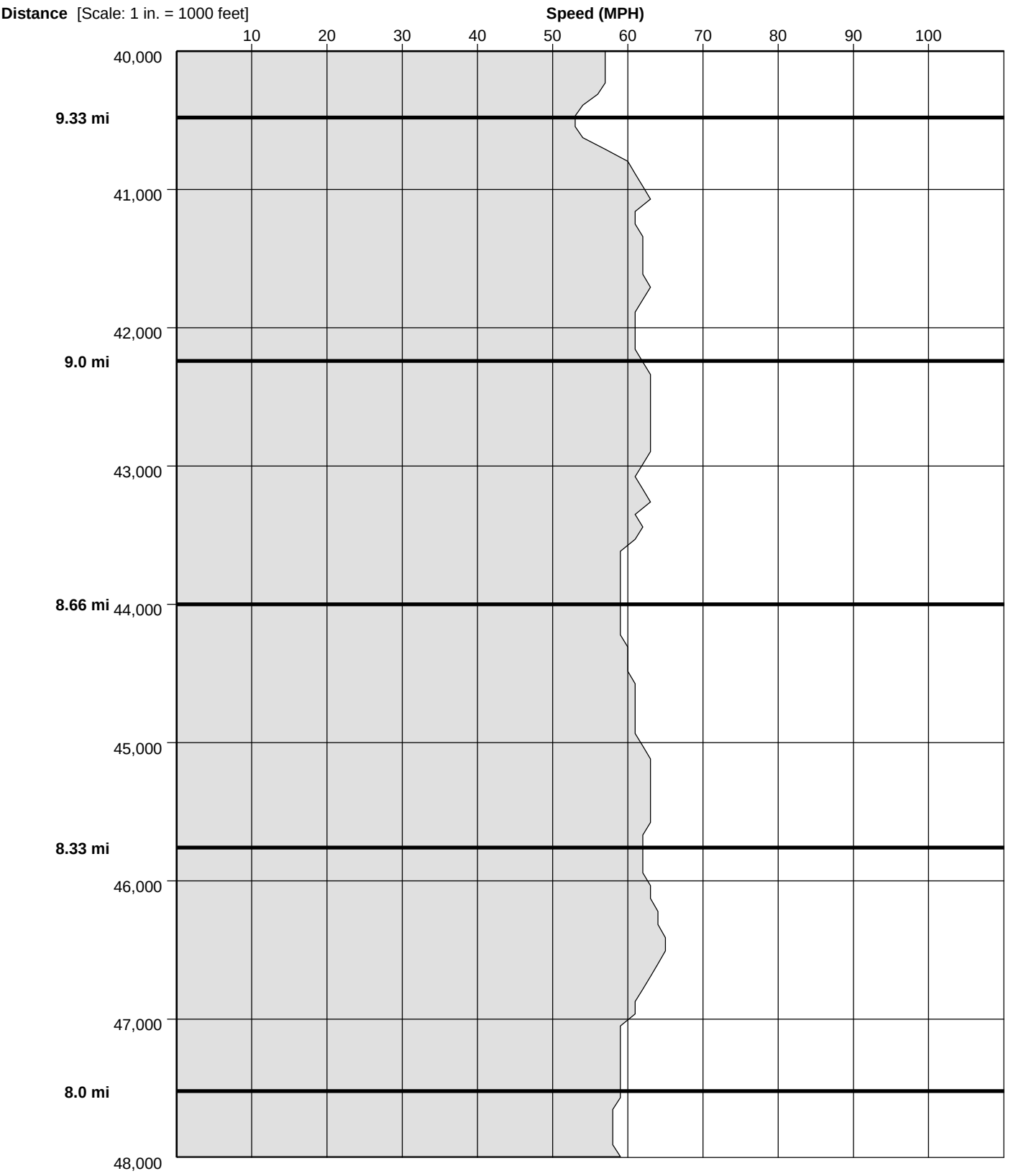
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 11**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



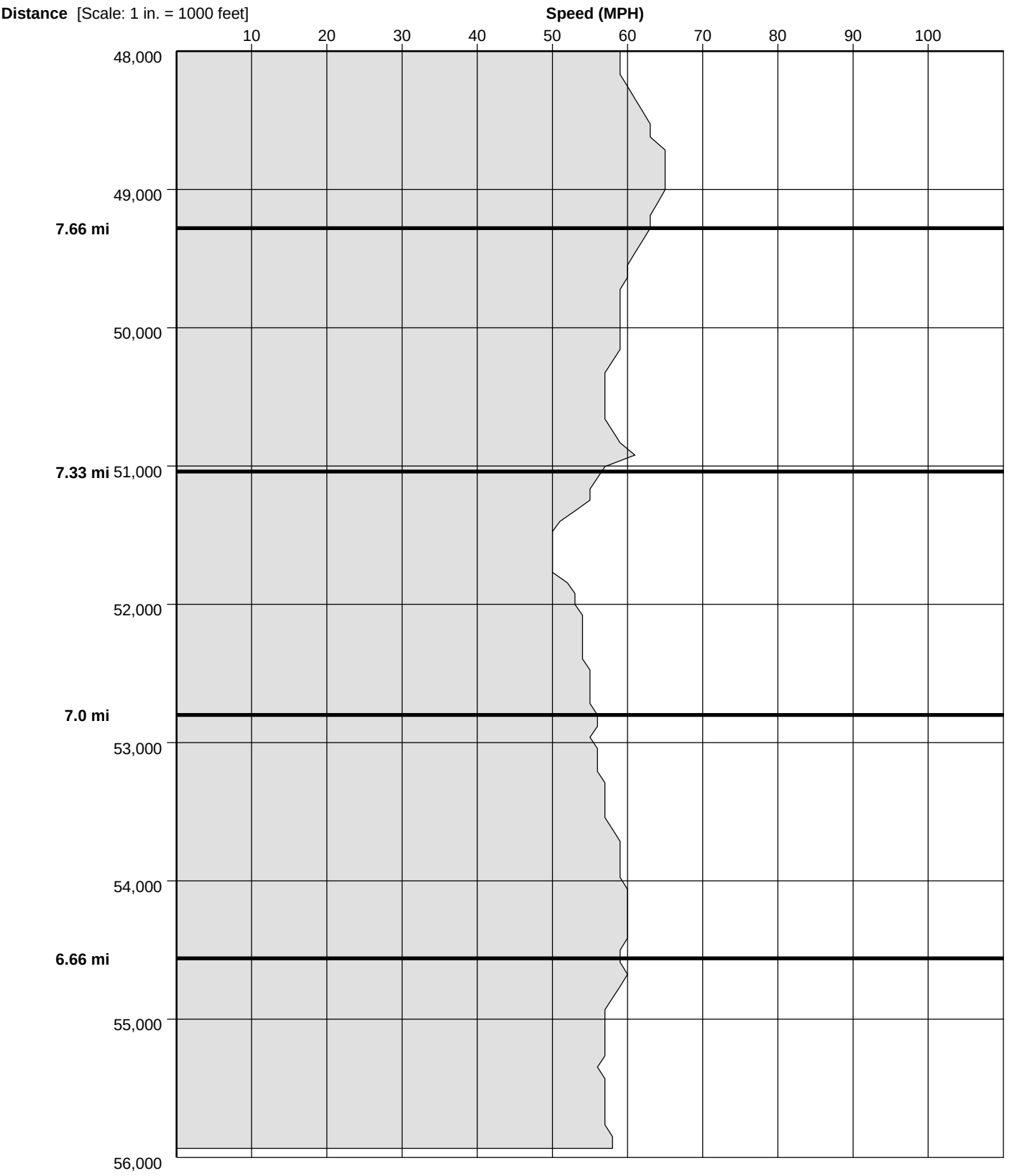
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 12**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



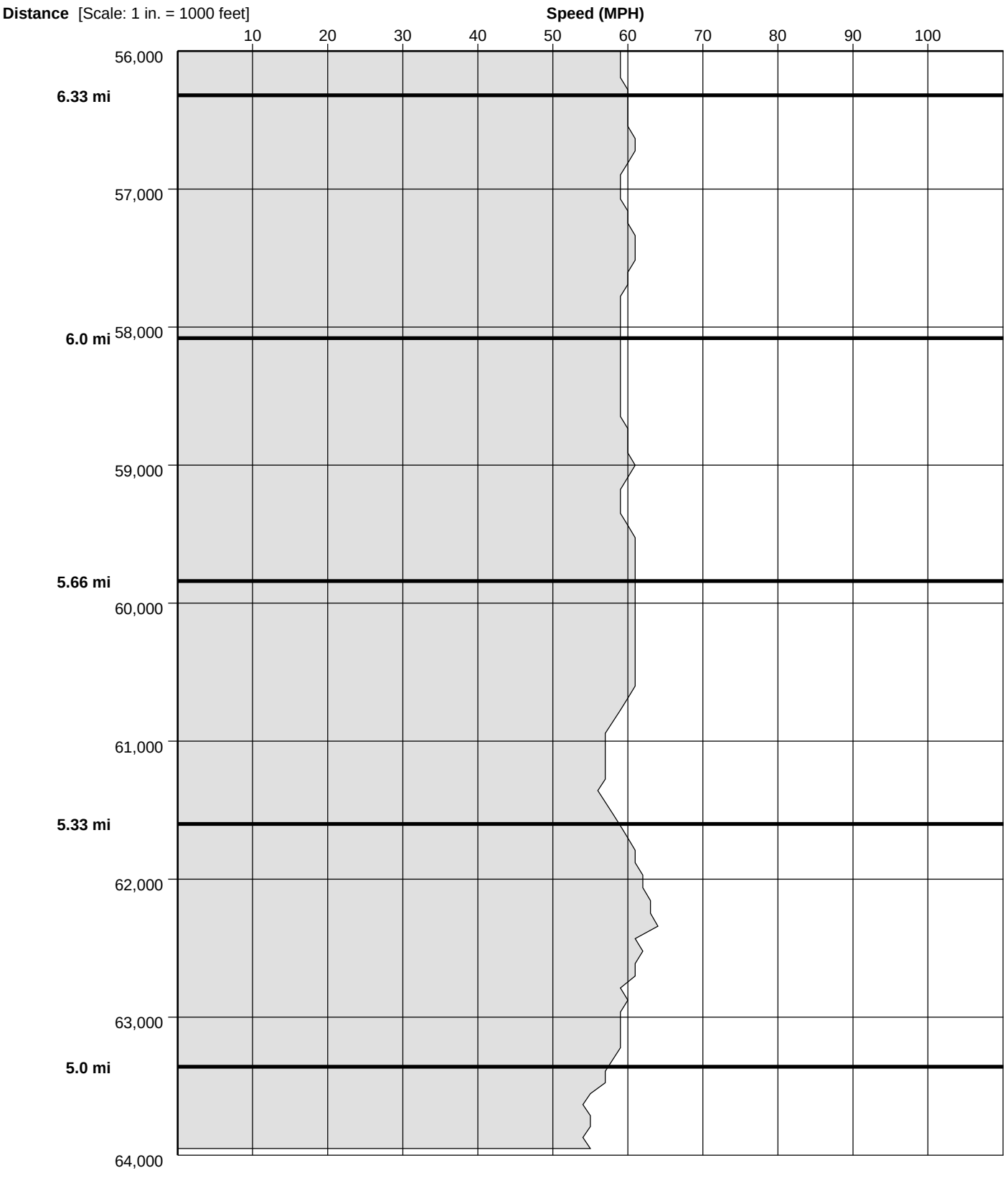
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 13**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



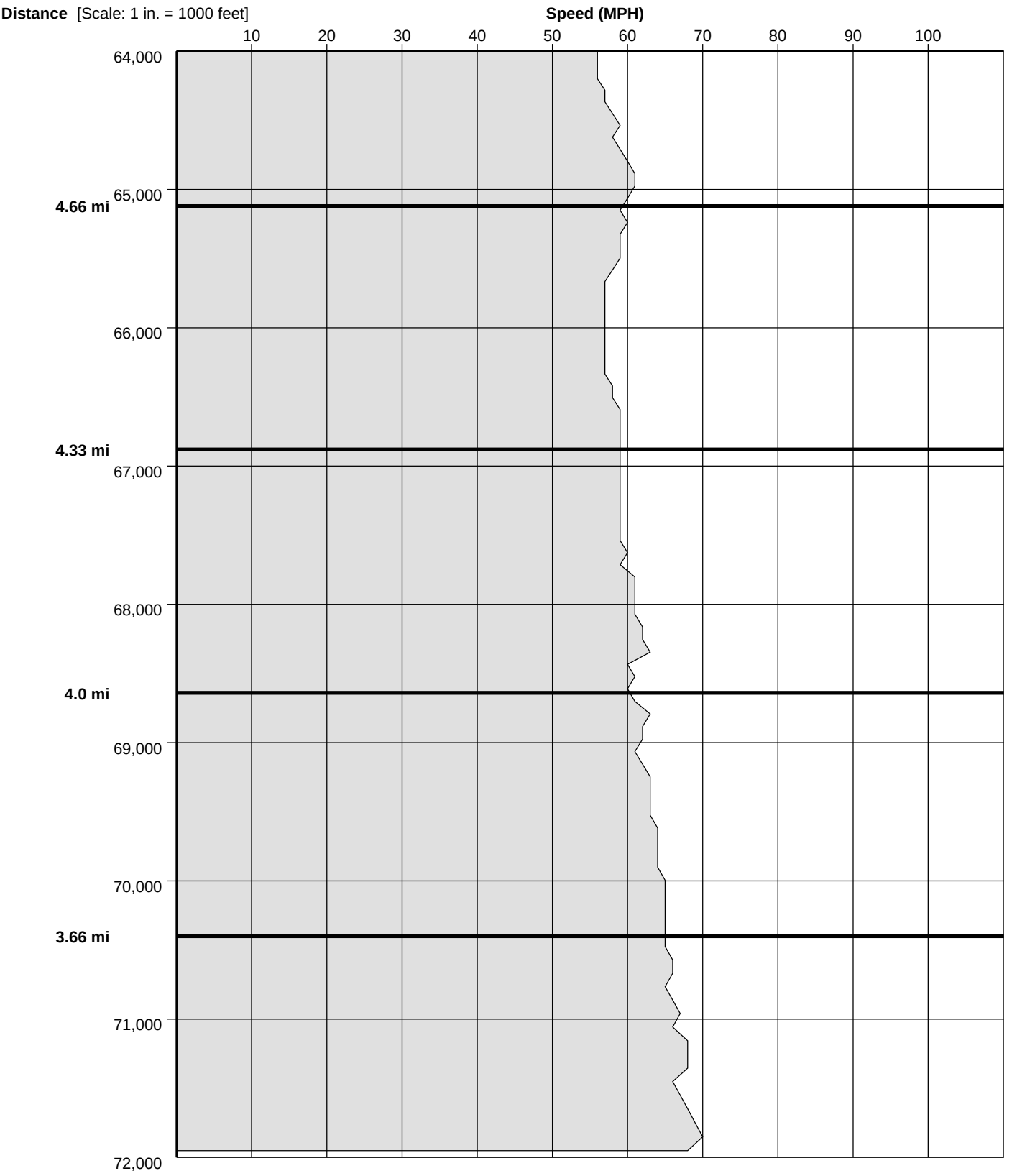
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 14**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



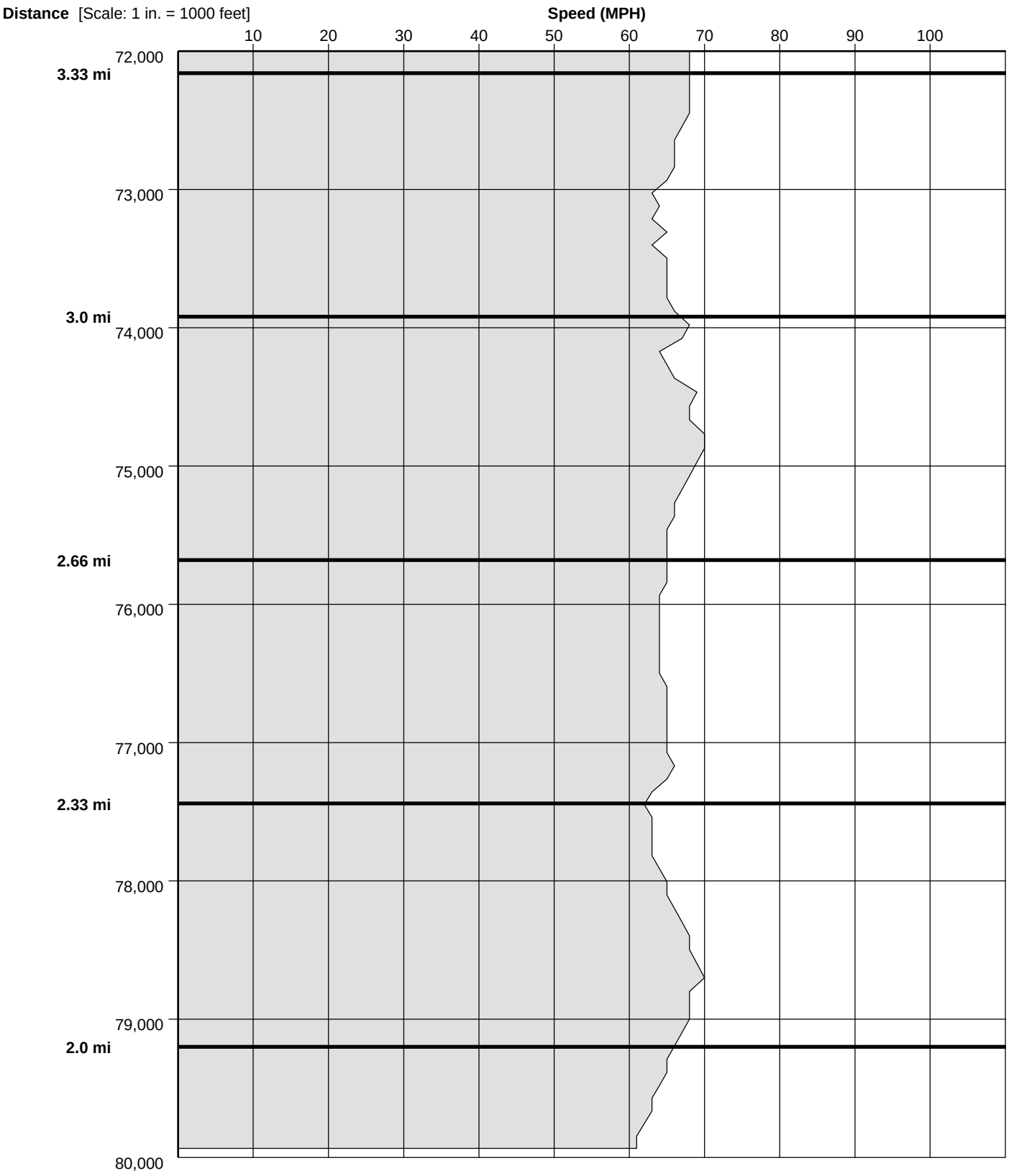
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 15**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



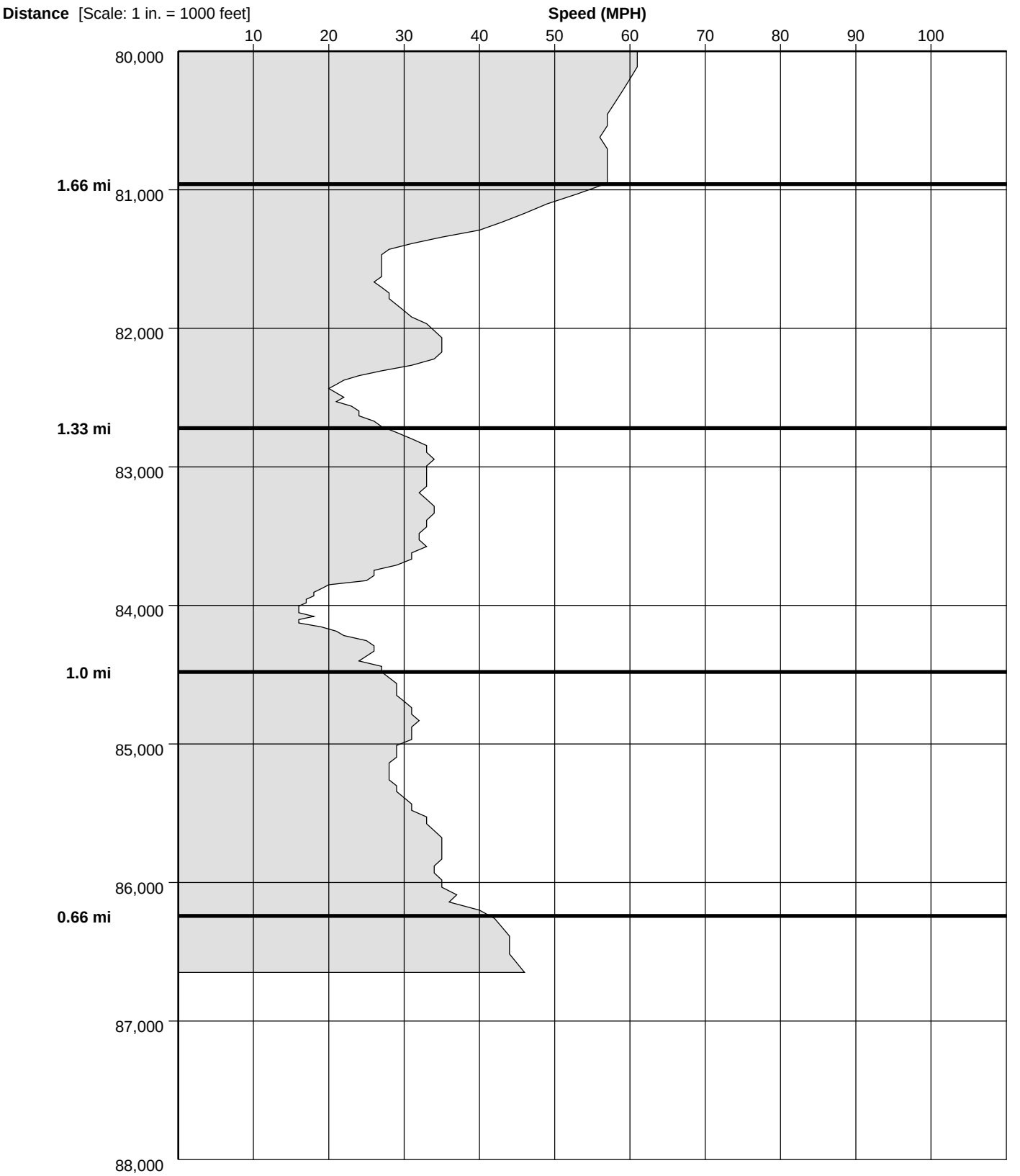
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 16**

Speed Profile

Run : I-75 SB-Li-SB-001 Start Time: 15:52 (This is a Before Run)



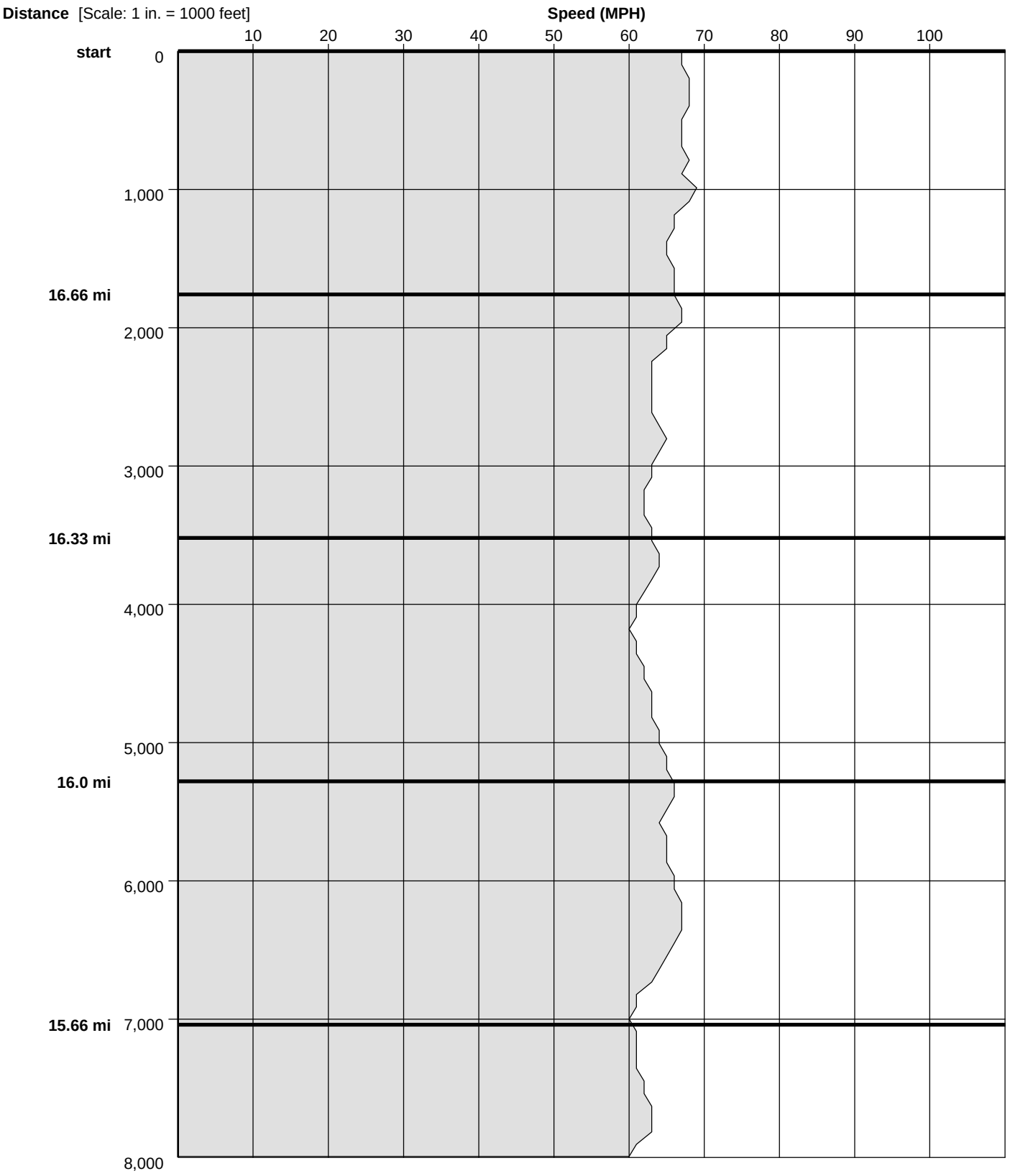
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 17**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



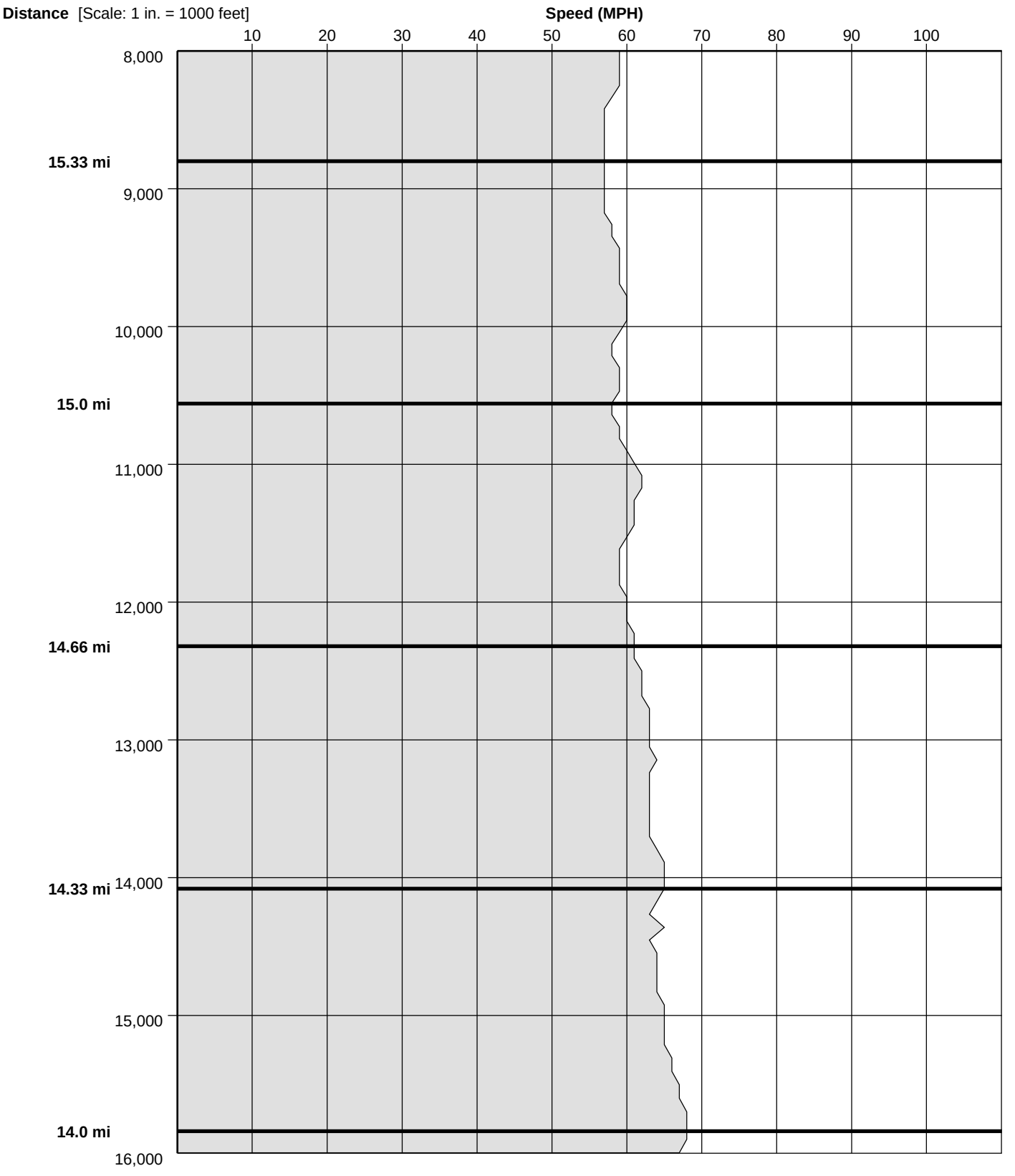
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 18**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



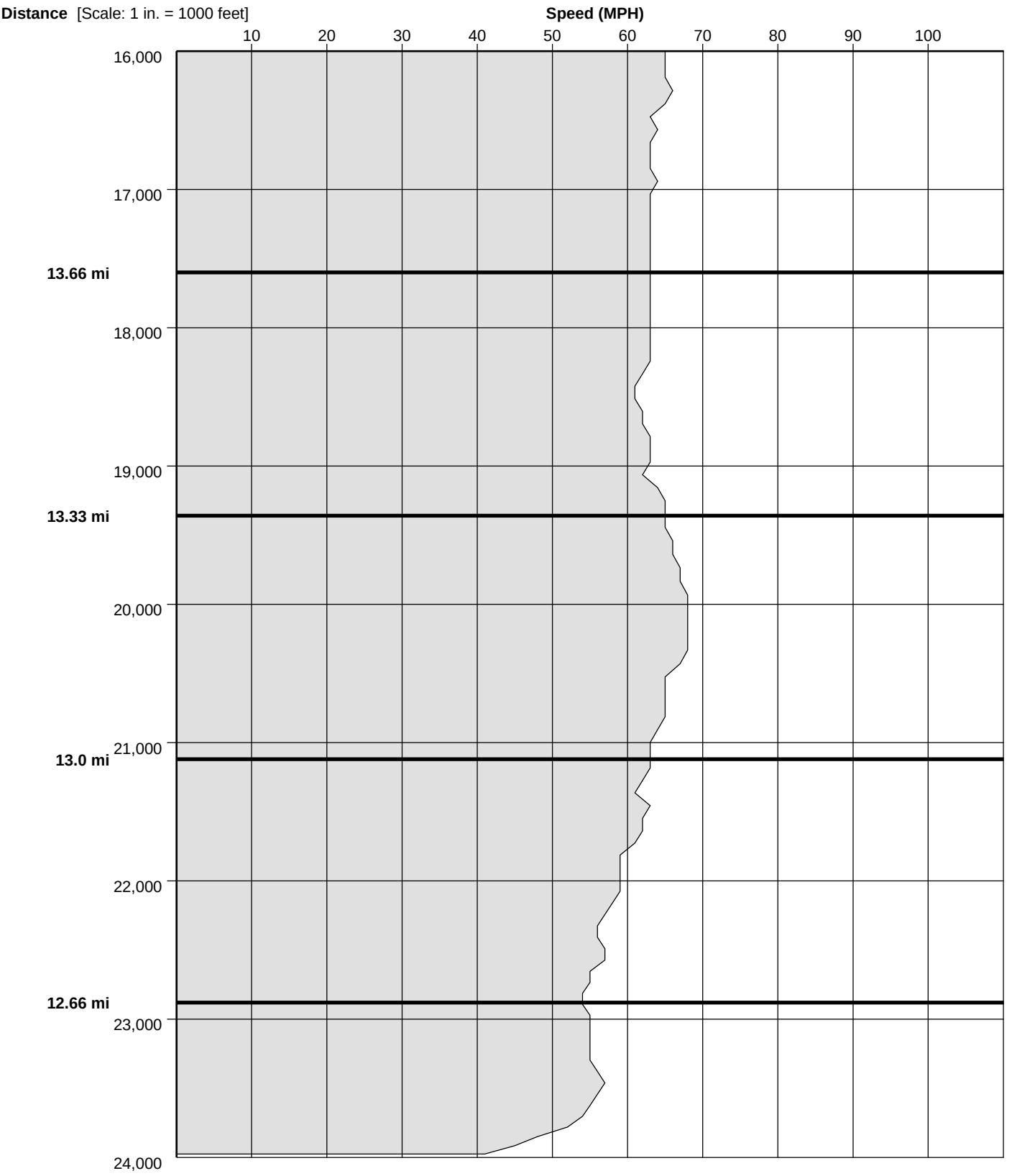
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 19**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



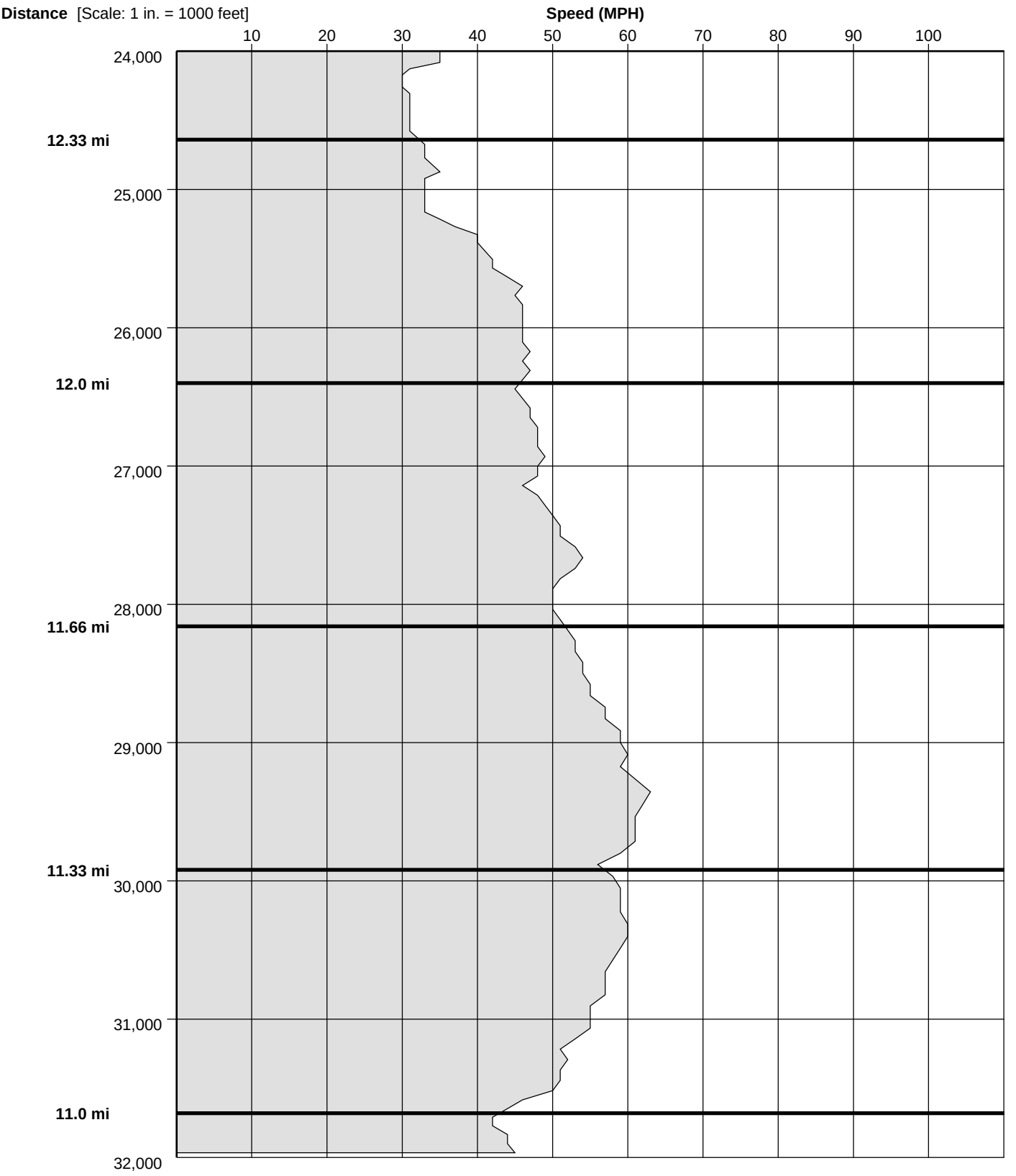
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 20**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



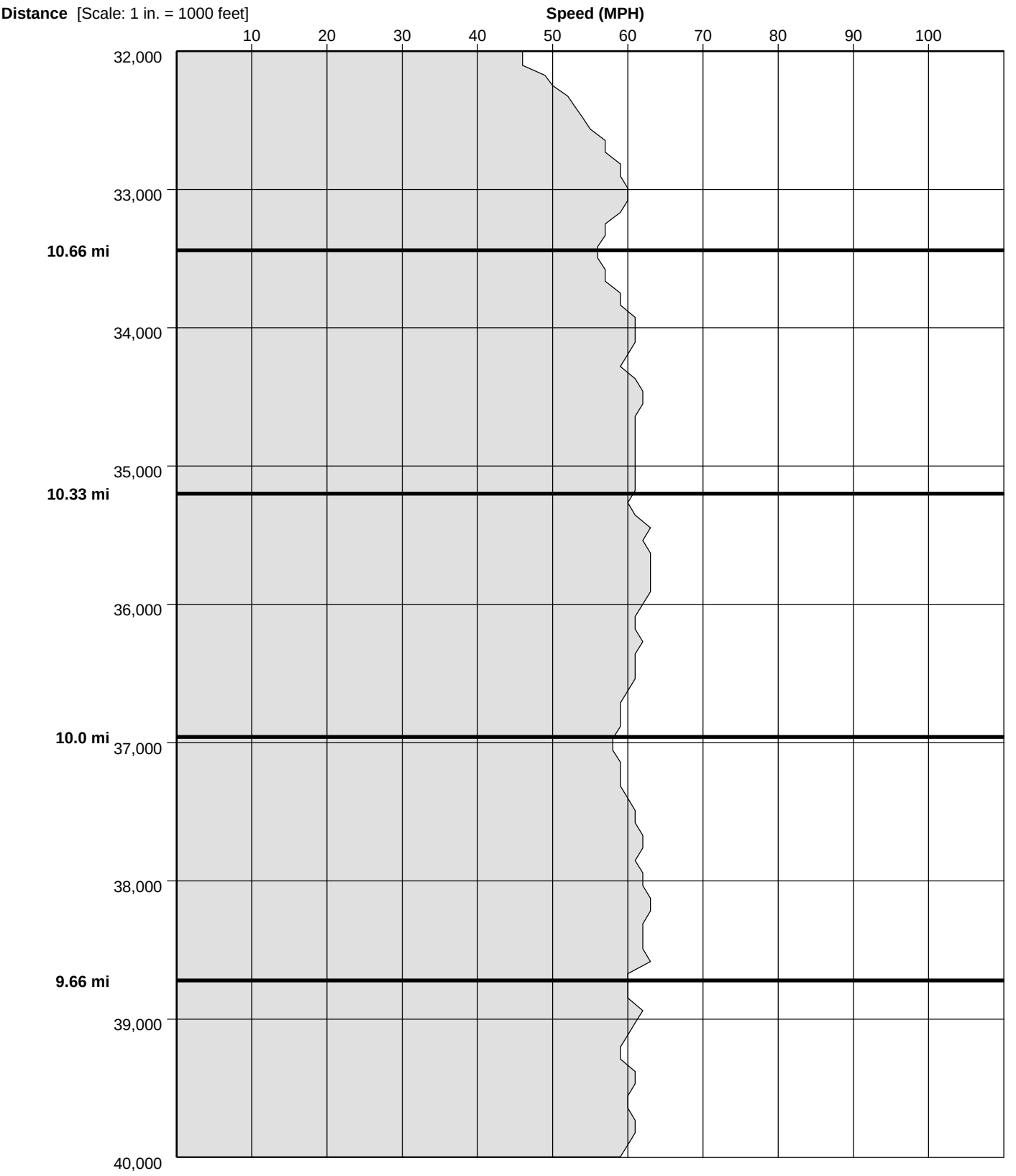
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 21**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



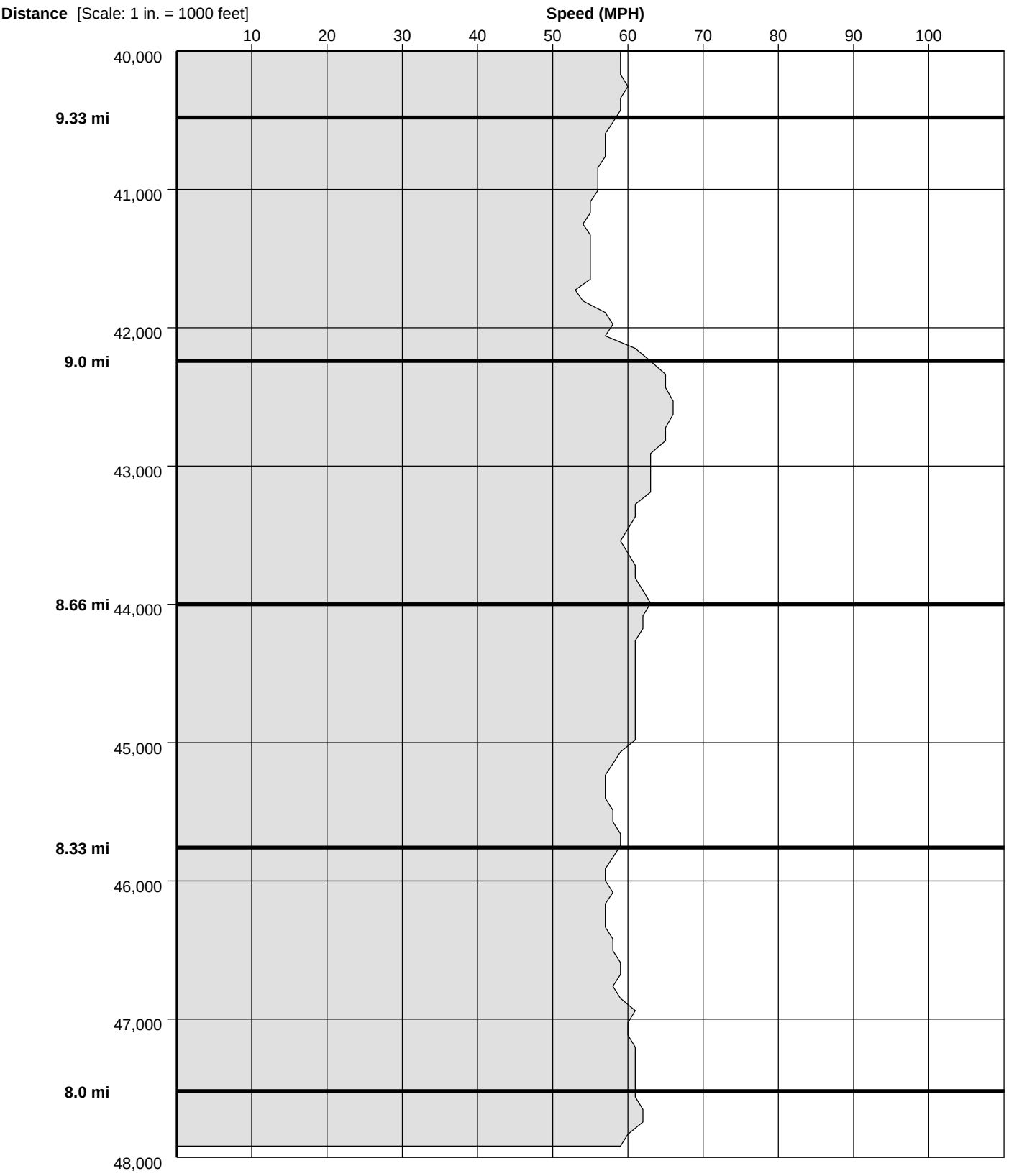
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 22**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



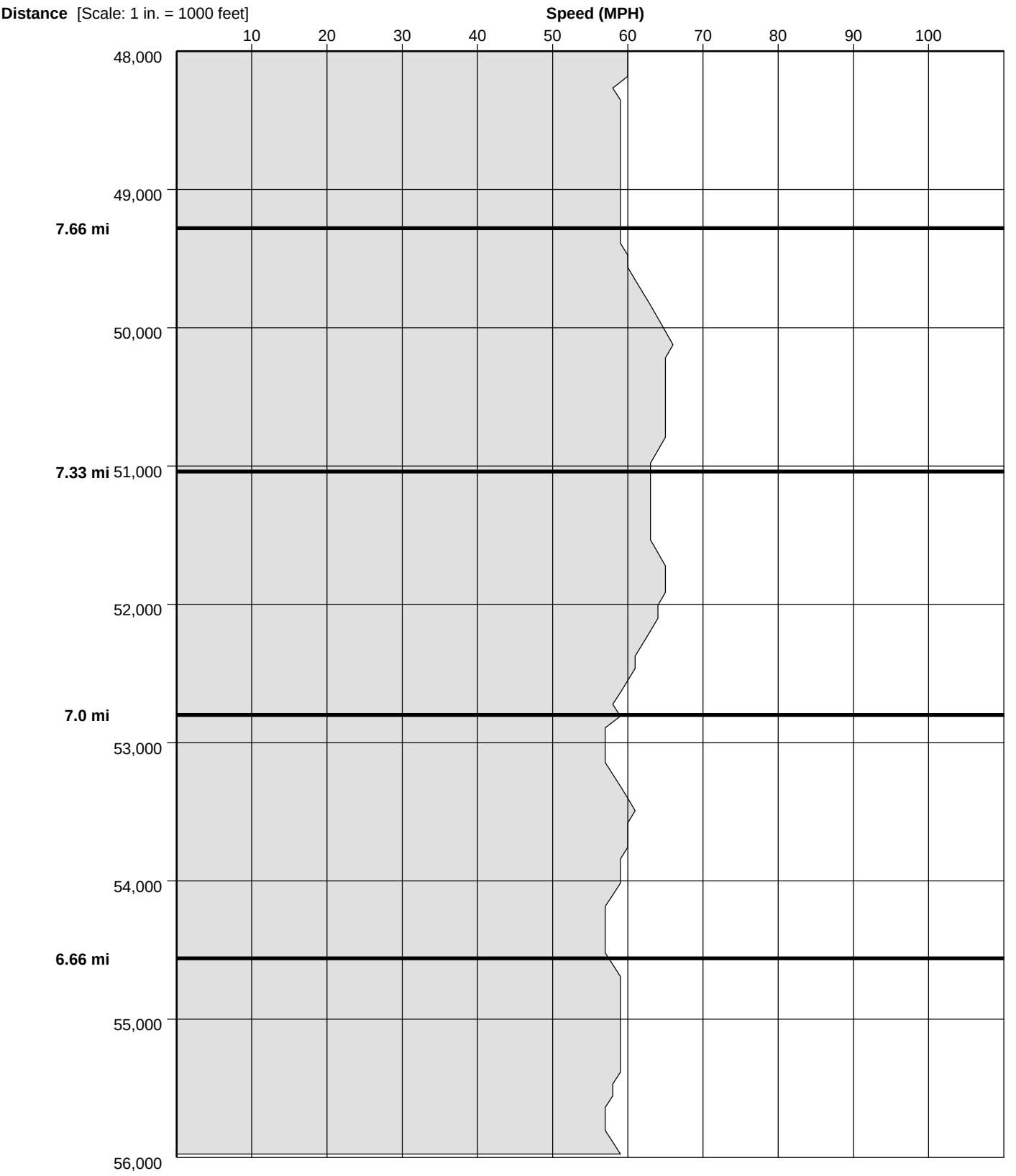
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 23**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



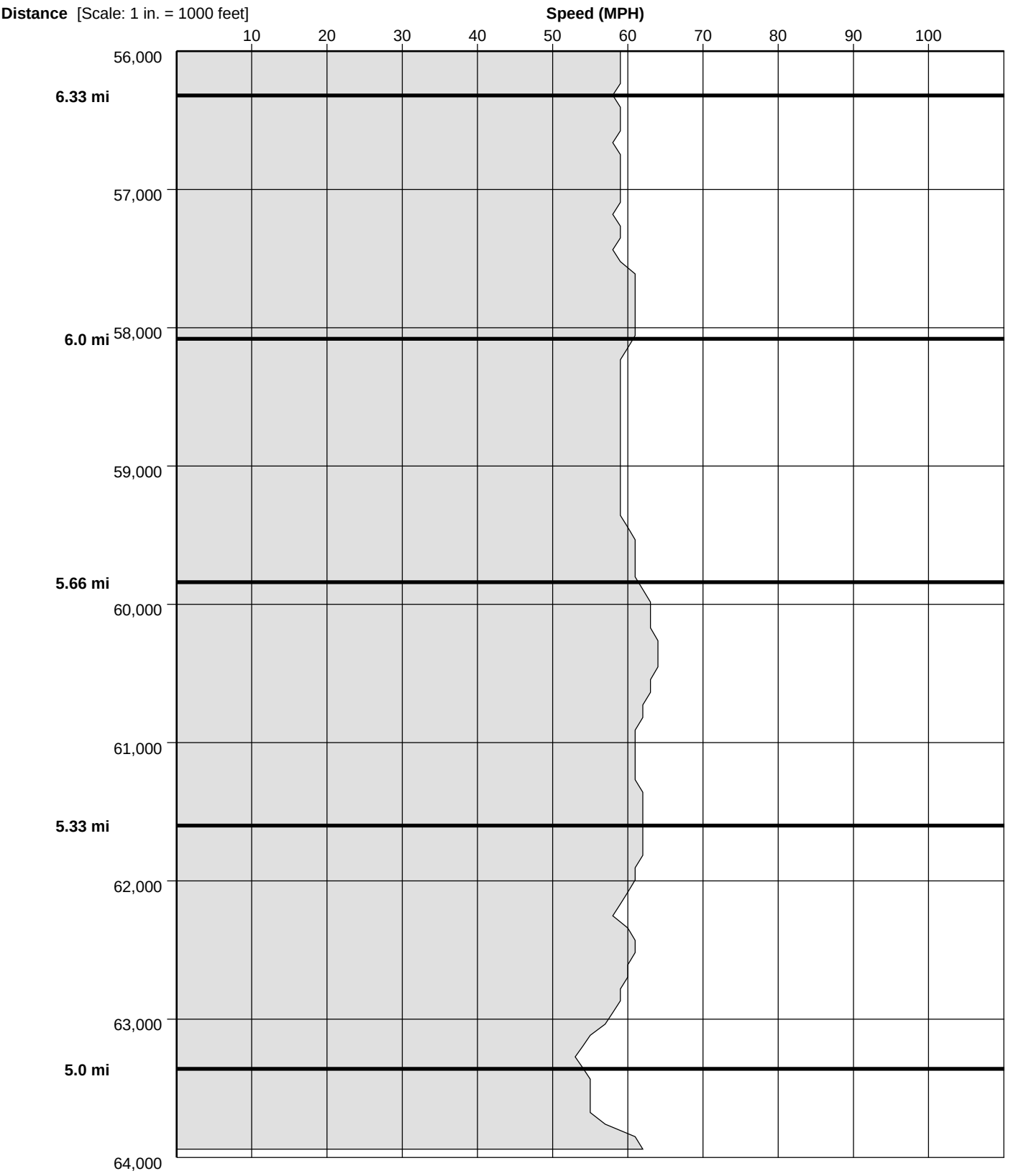
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 24**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



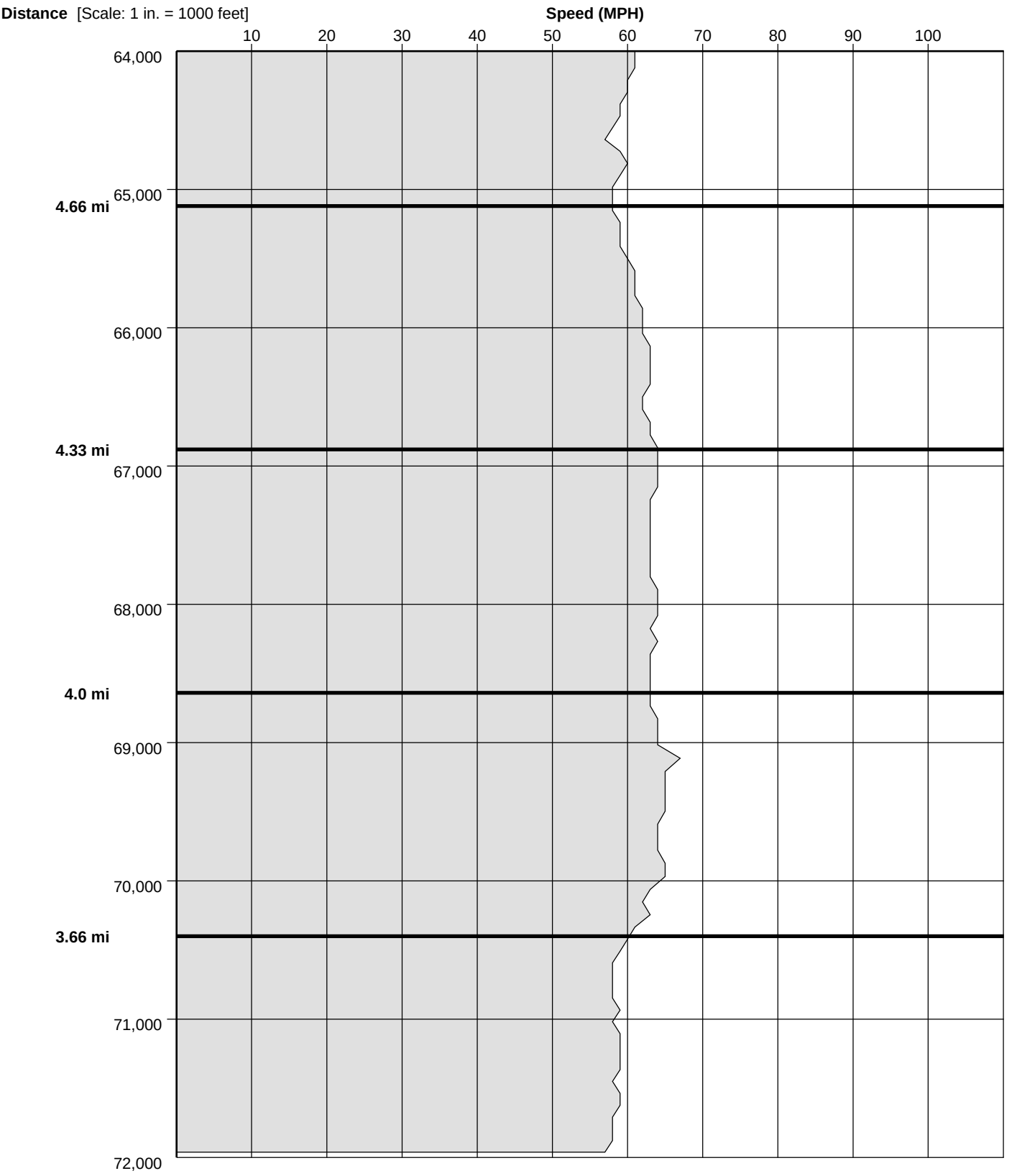
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 25**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



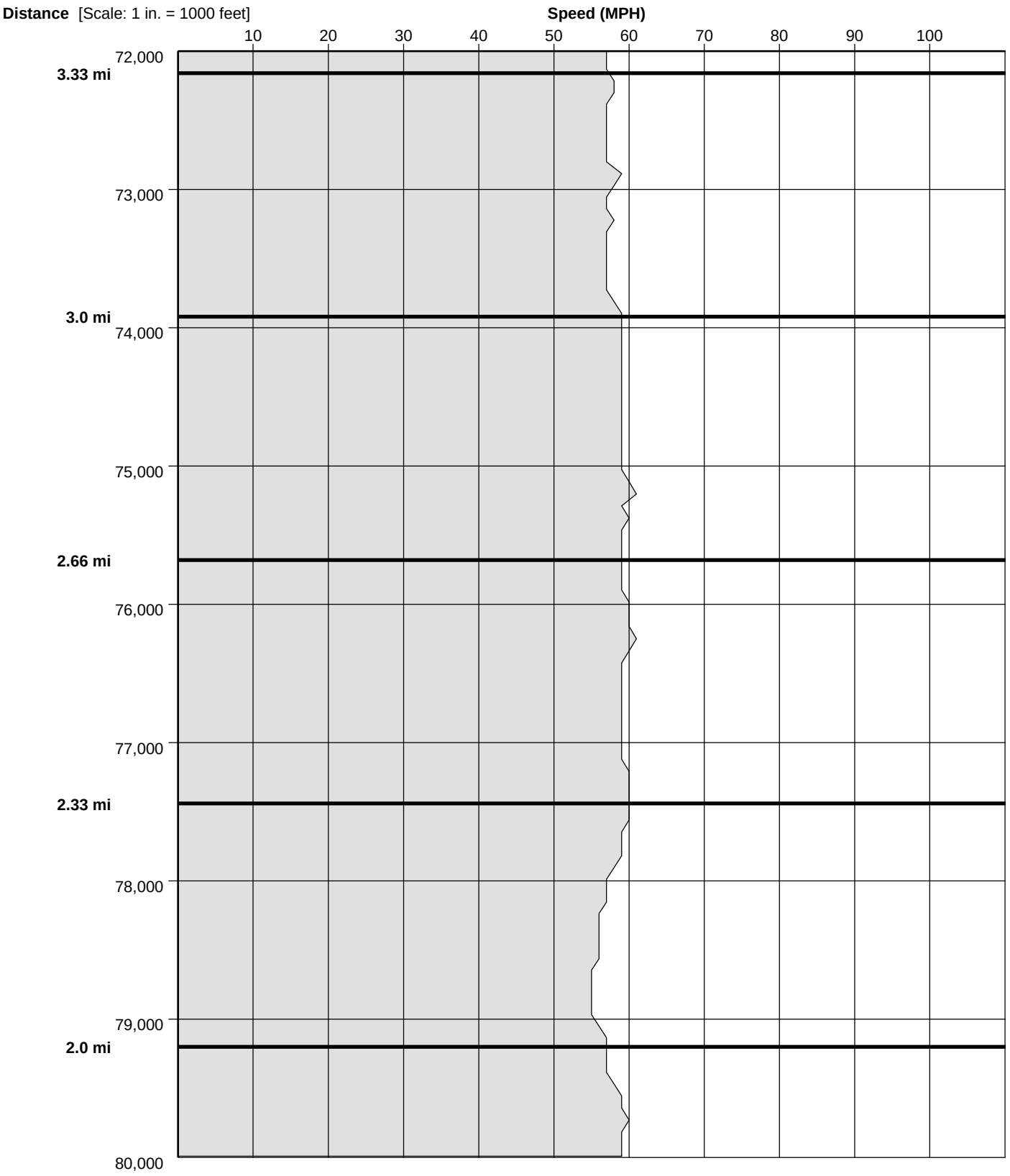
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 26**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



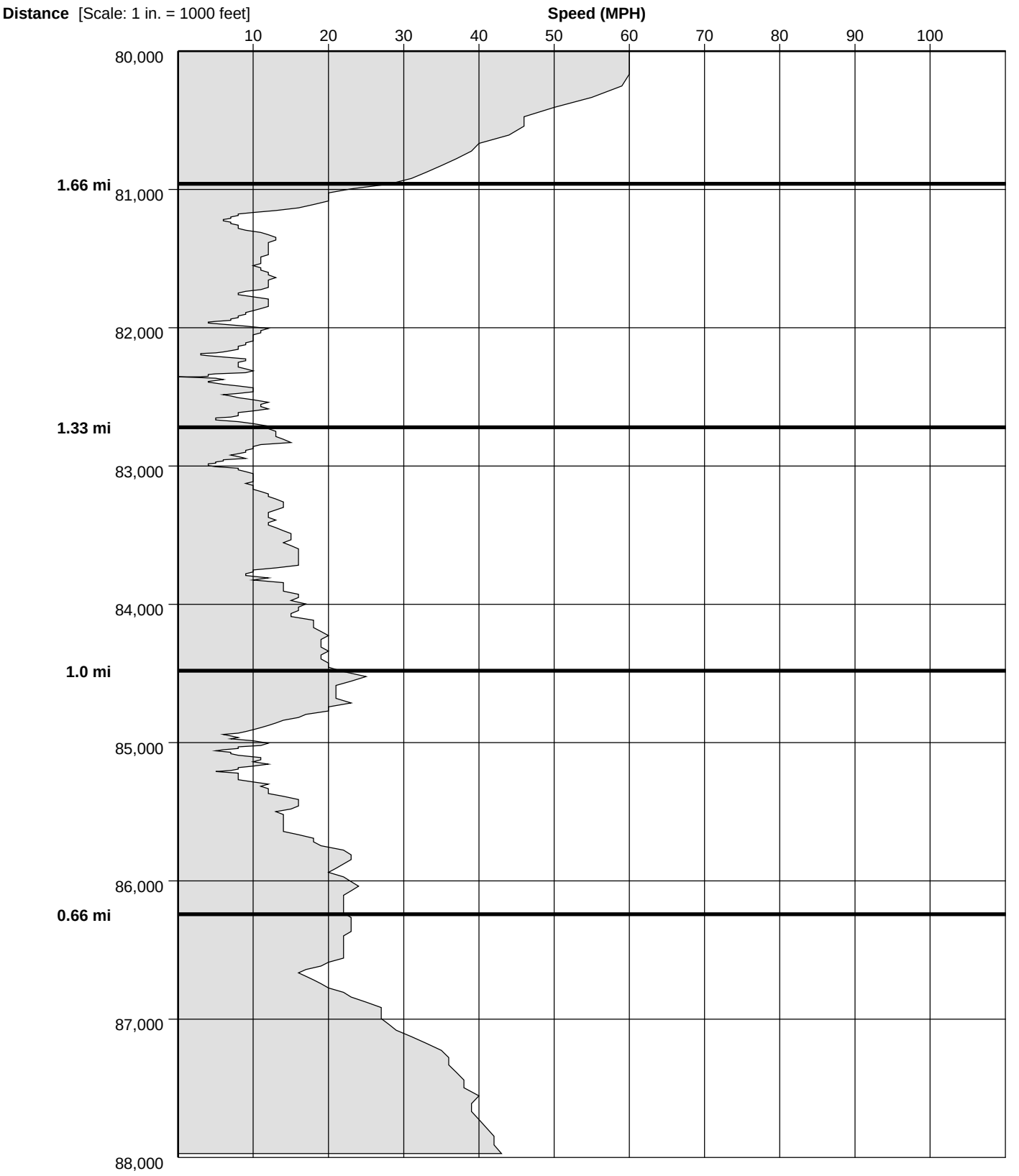
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 27**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



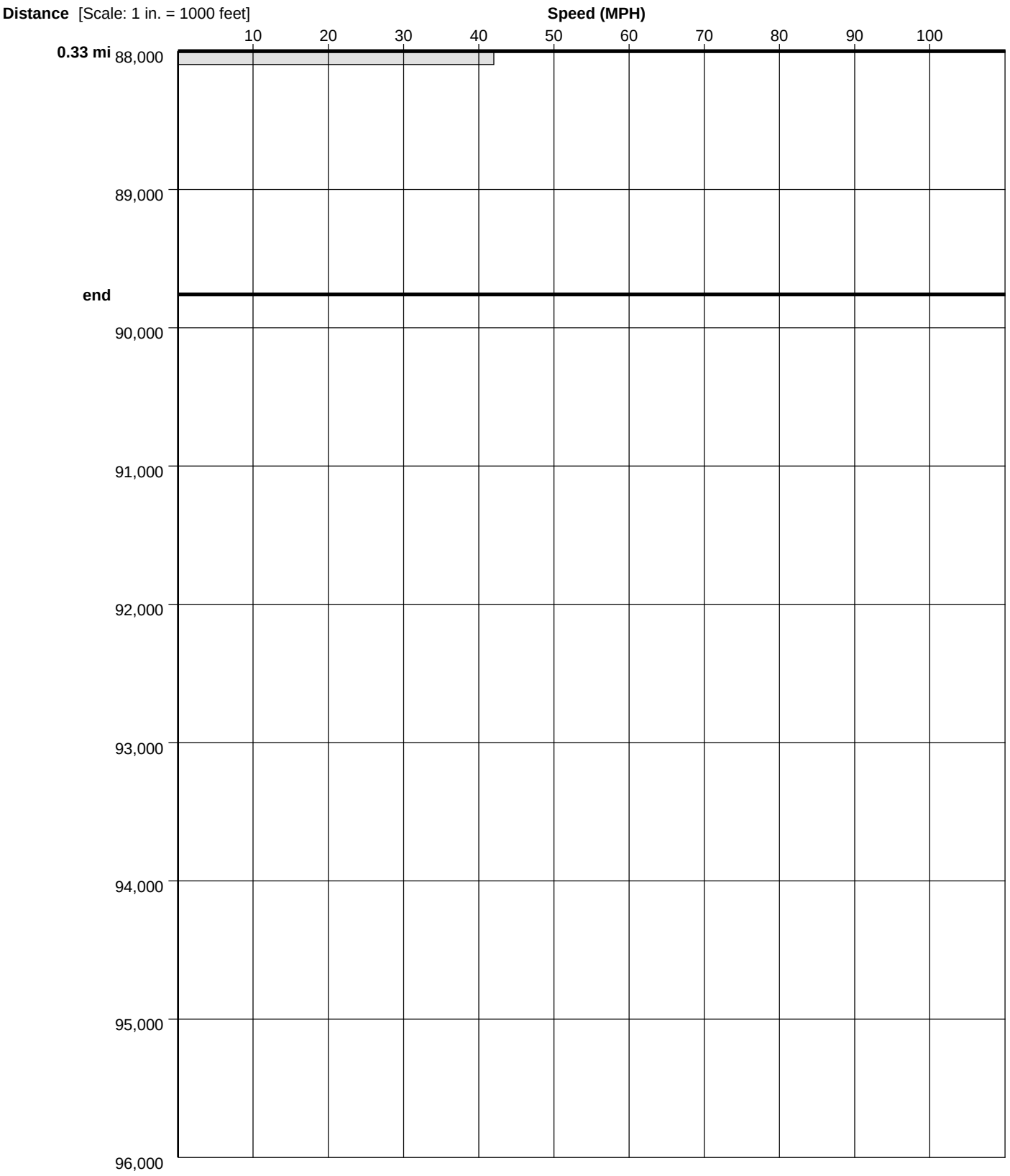
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 28**

Speed Profile

Run : I-75 SB-Li-SB-002 Start Time: 16:42 (This is a Before Run)



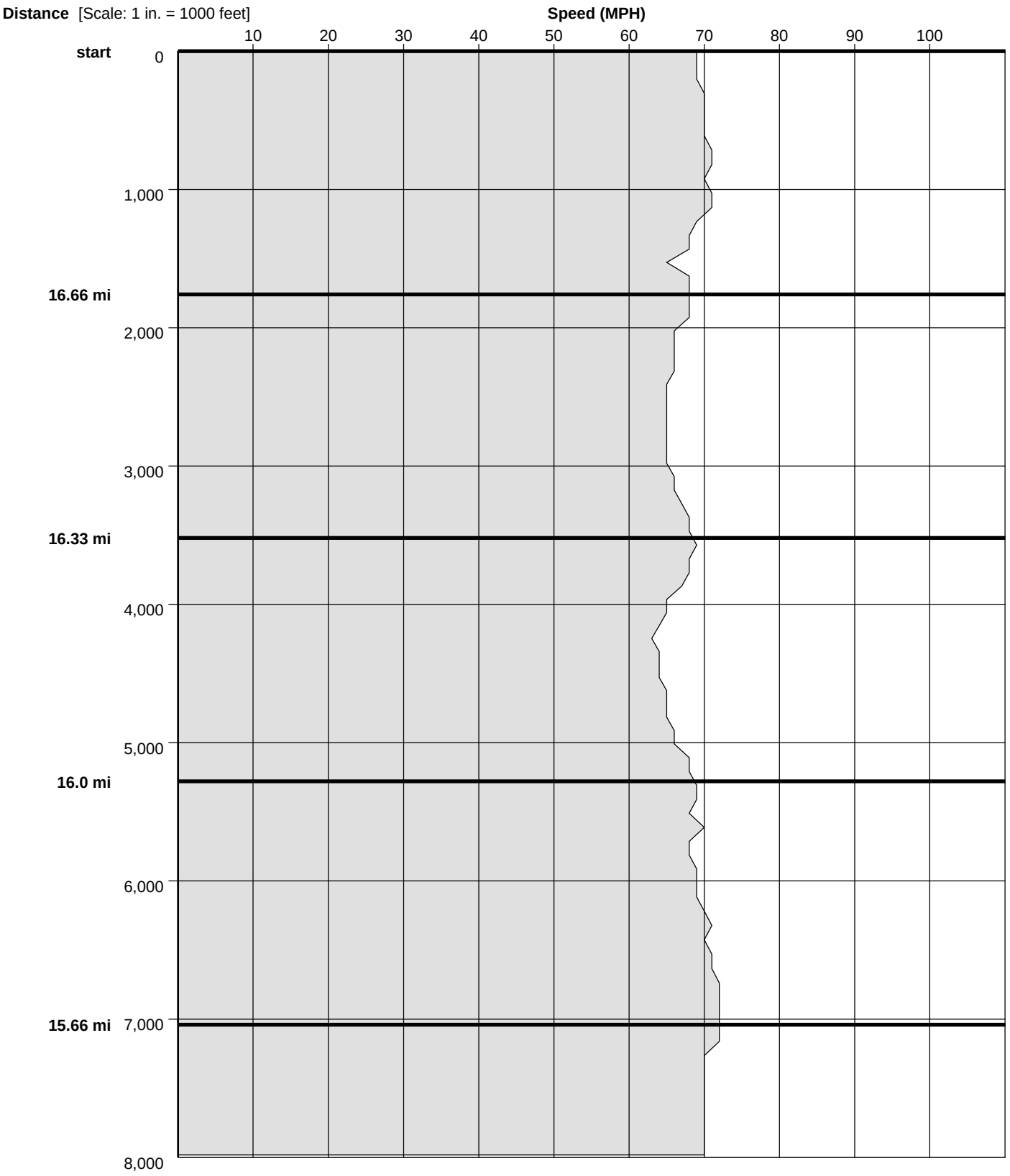
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 29**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



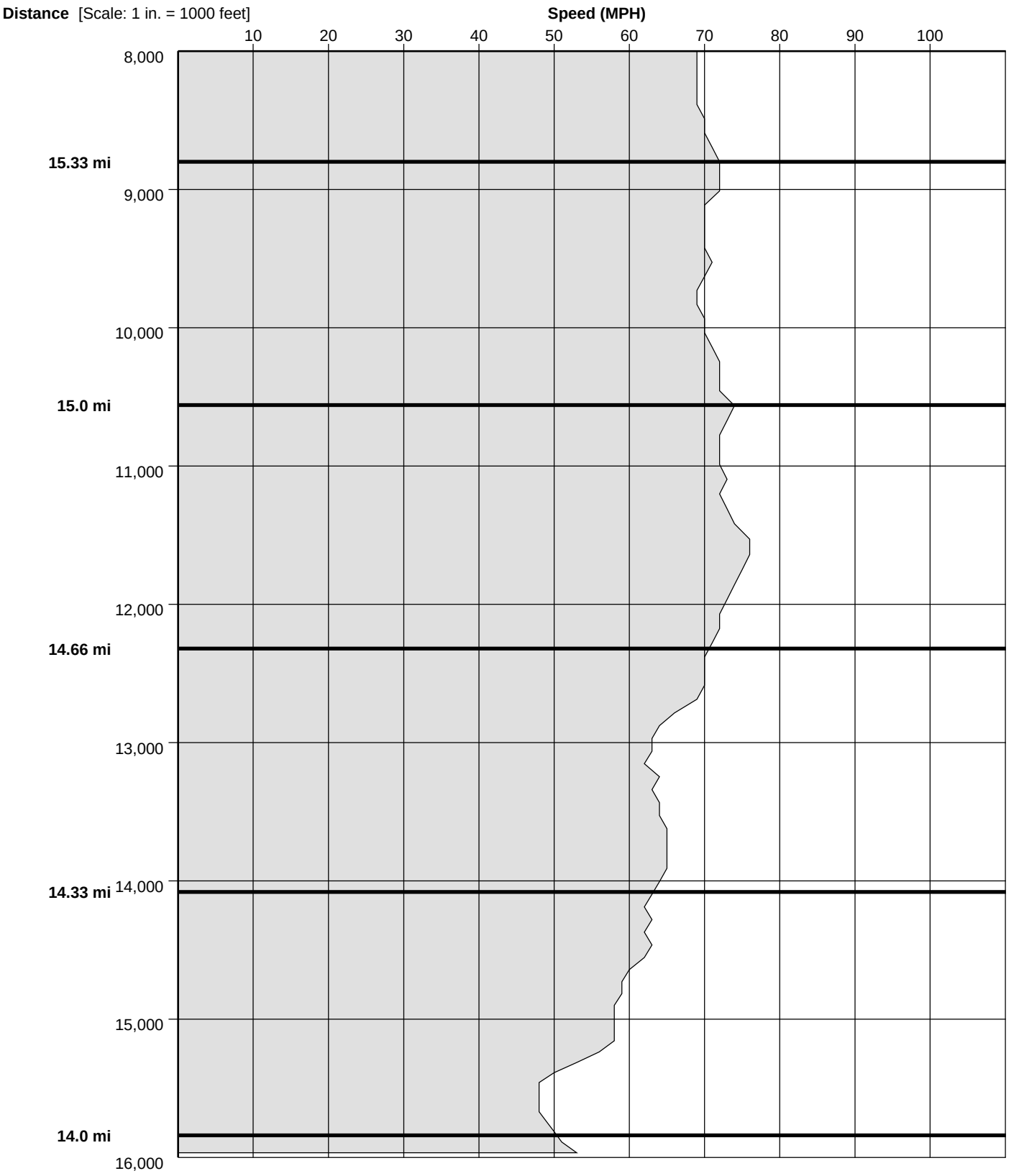
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 30**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



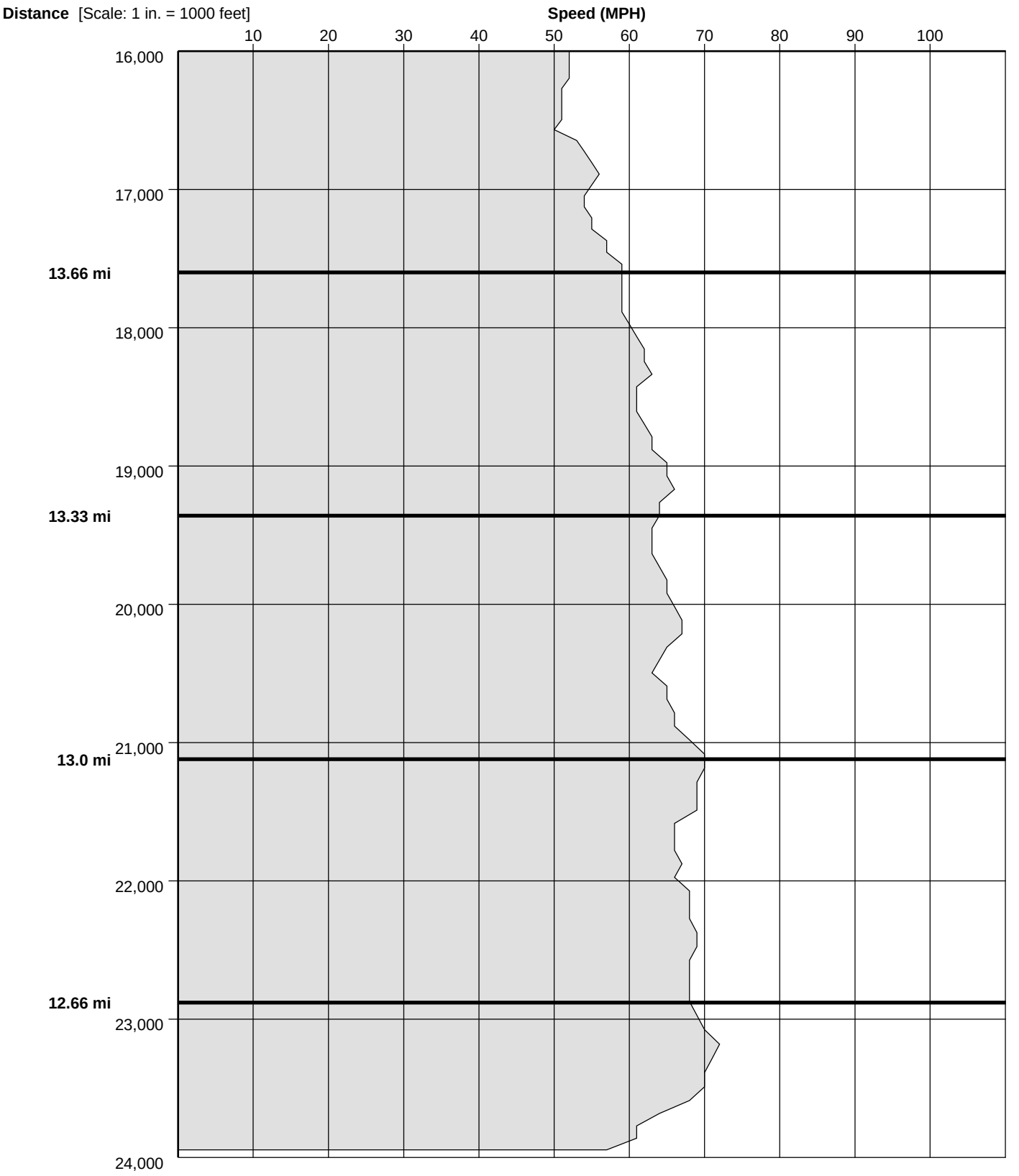
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 31**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



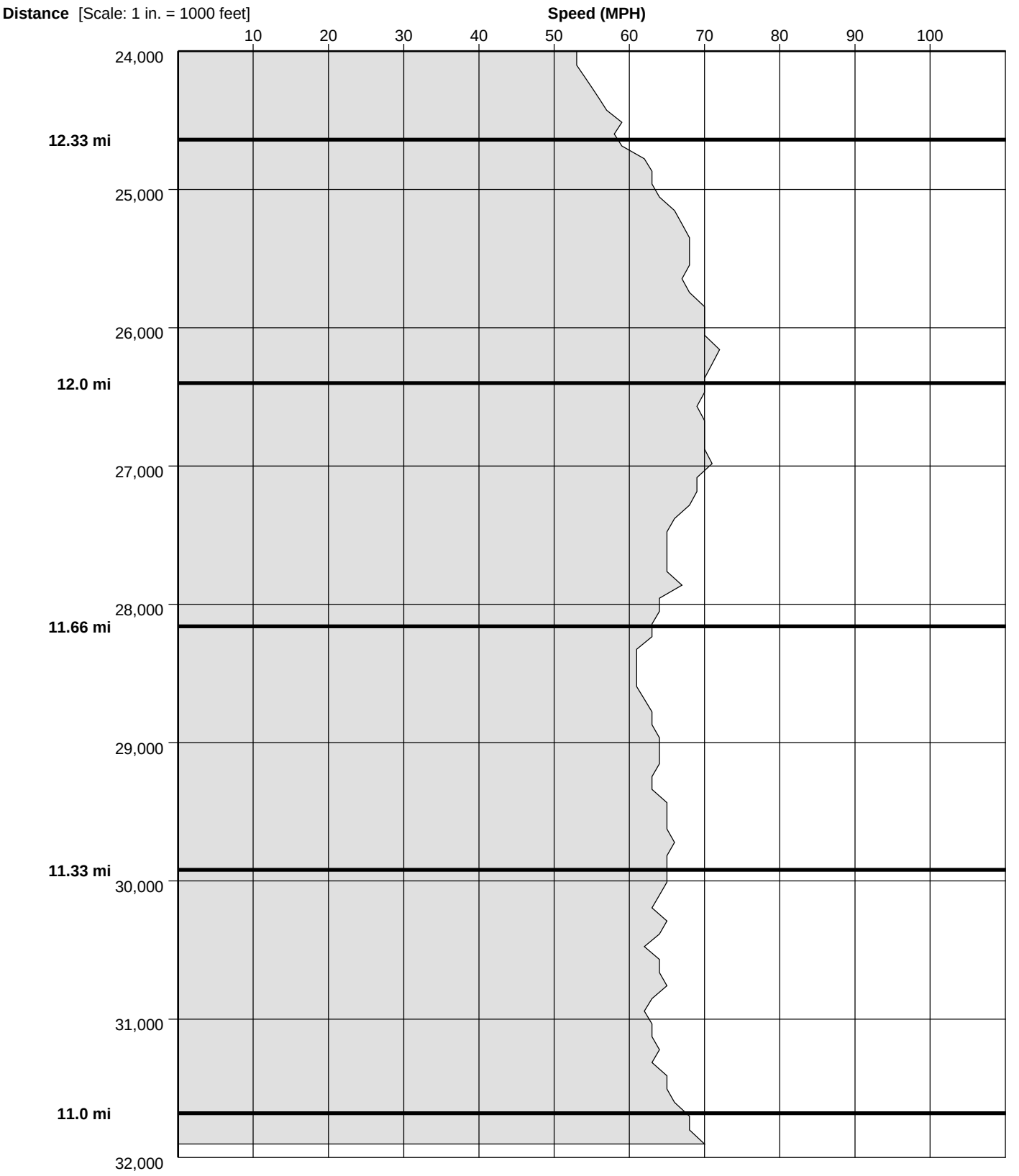
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 32**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



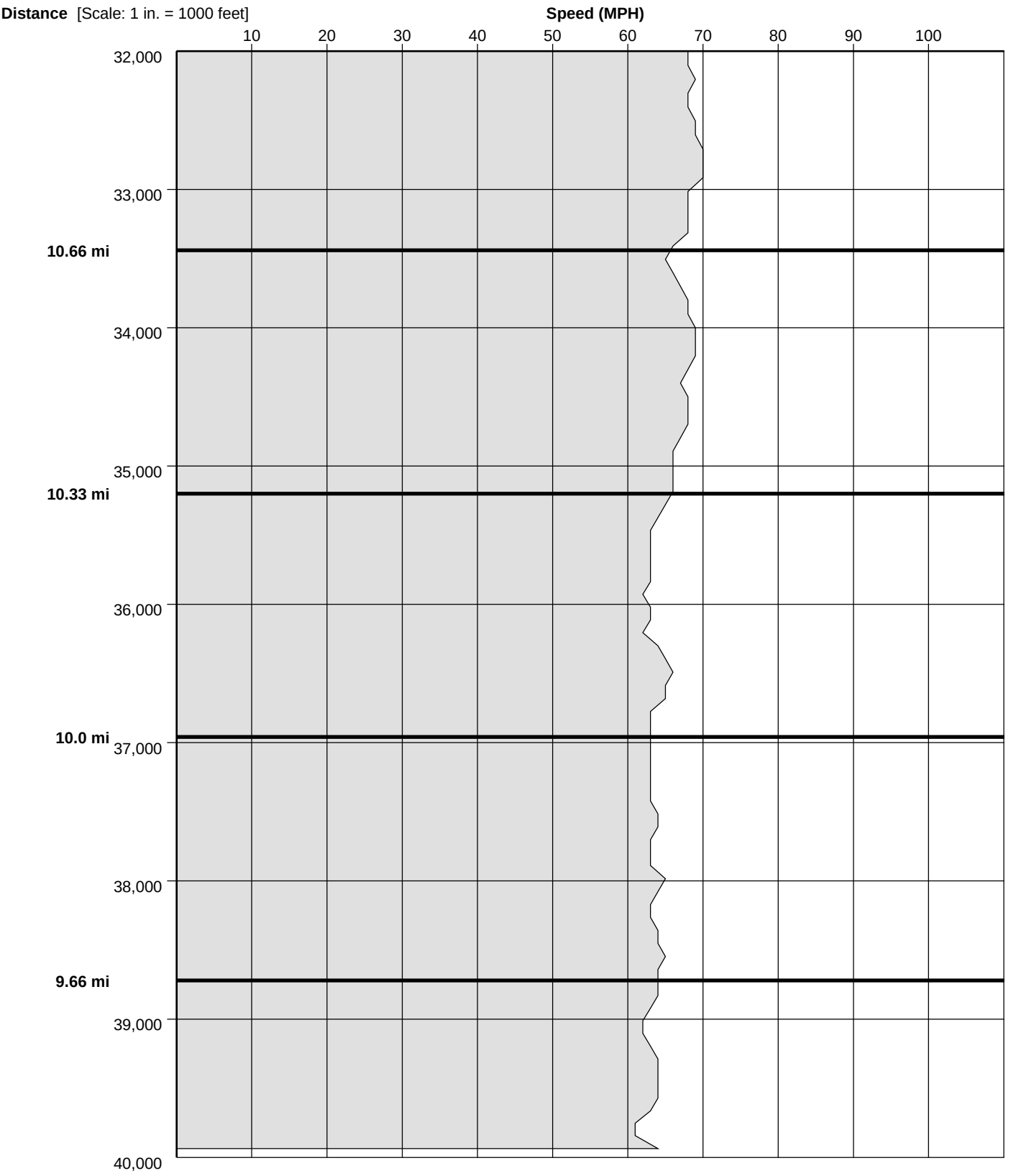
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 33**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



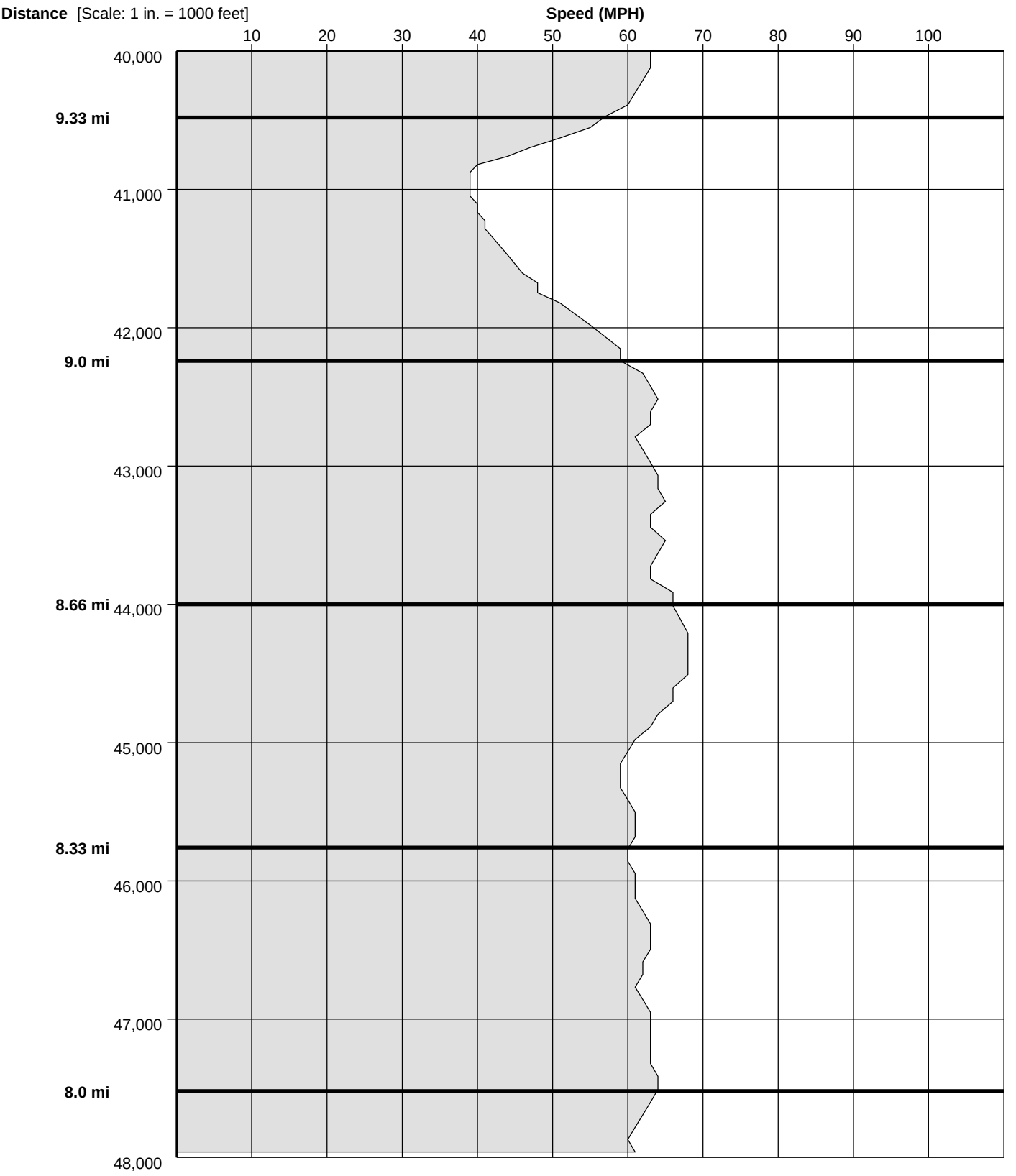
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 34**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



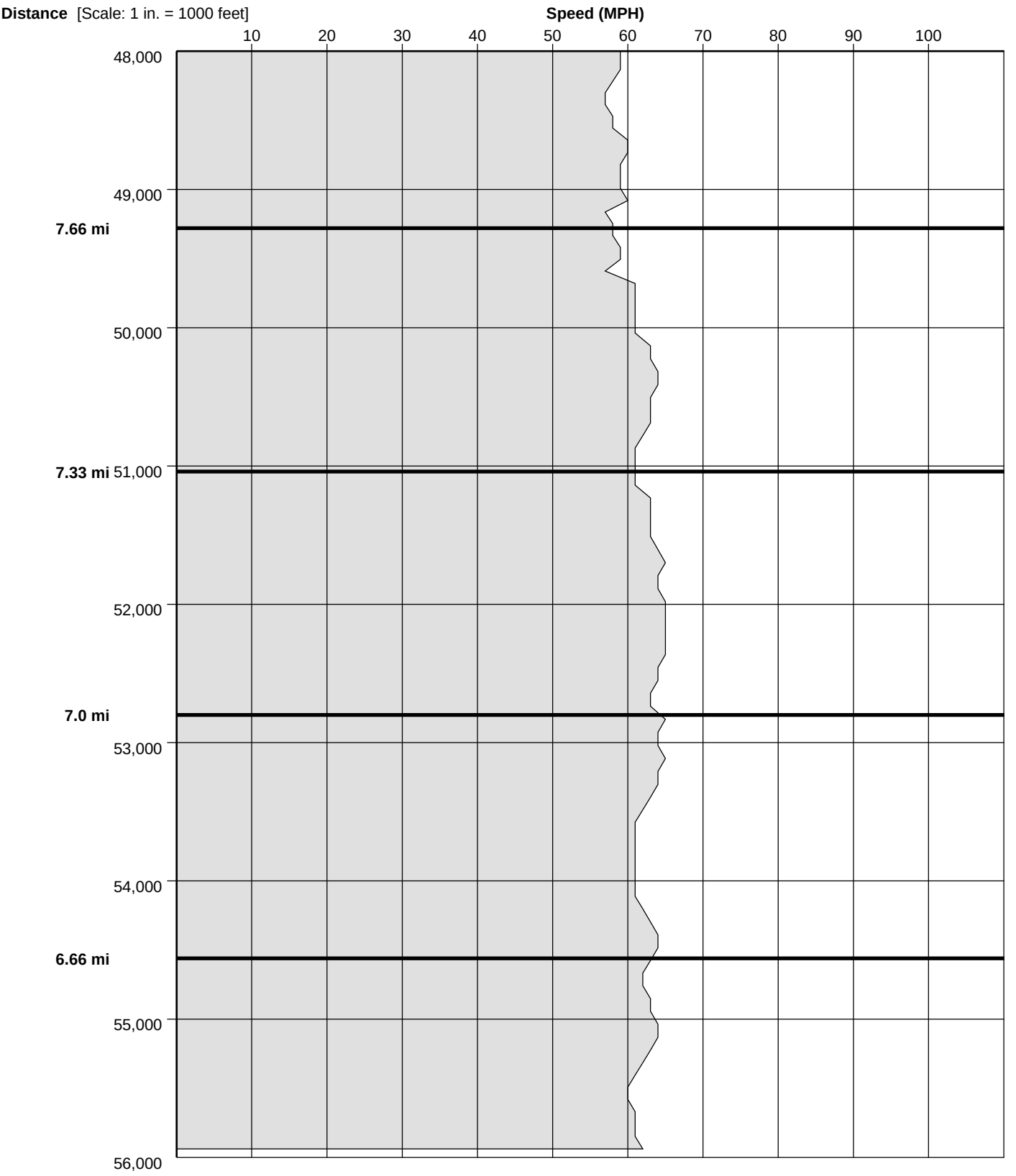
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 35**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



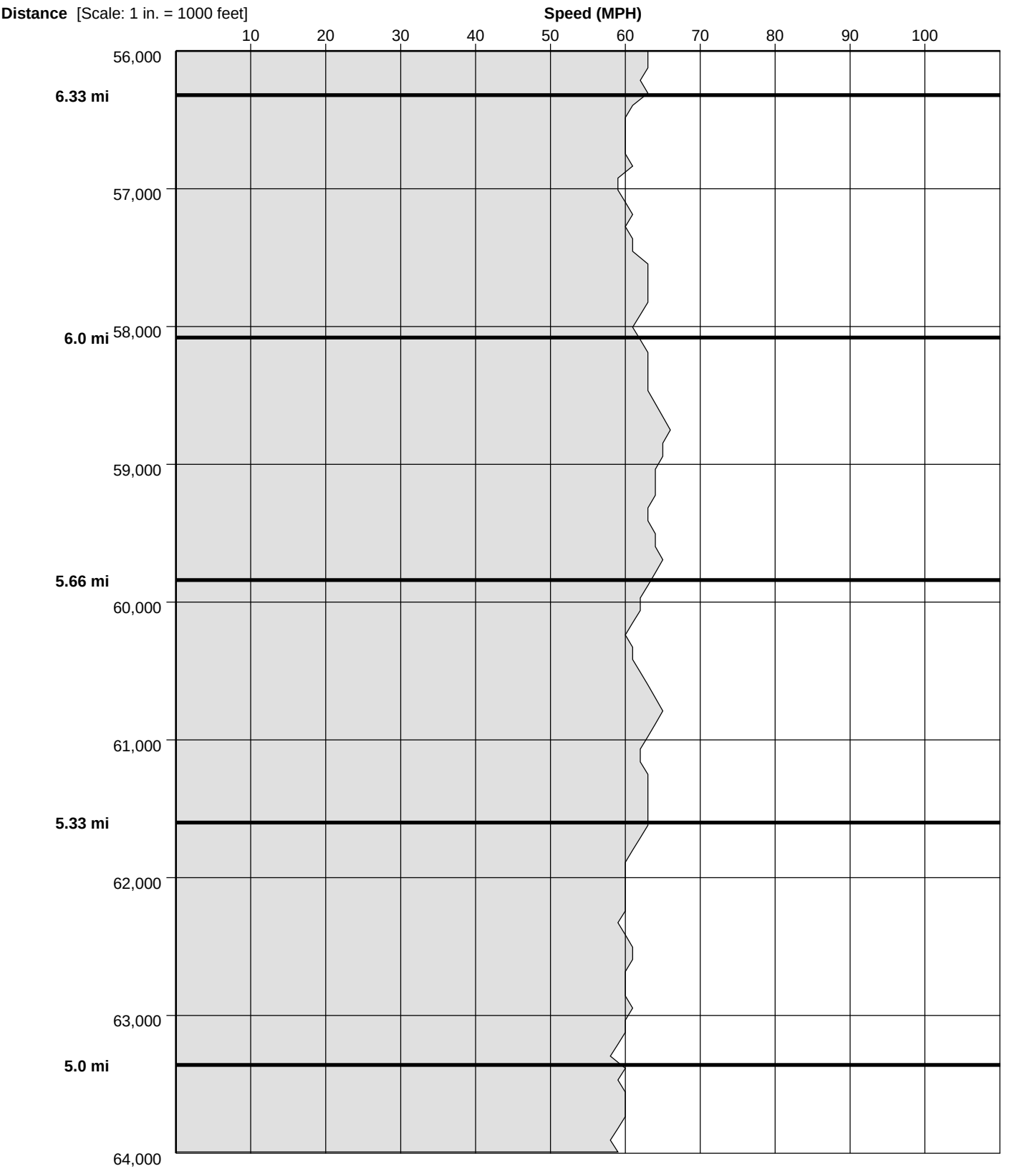
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 36**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



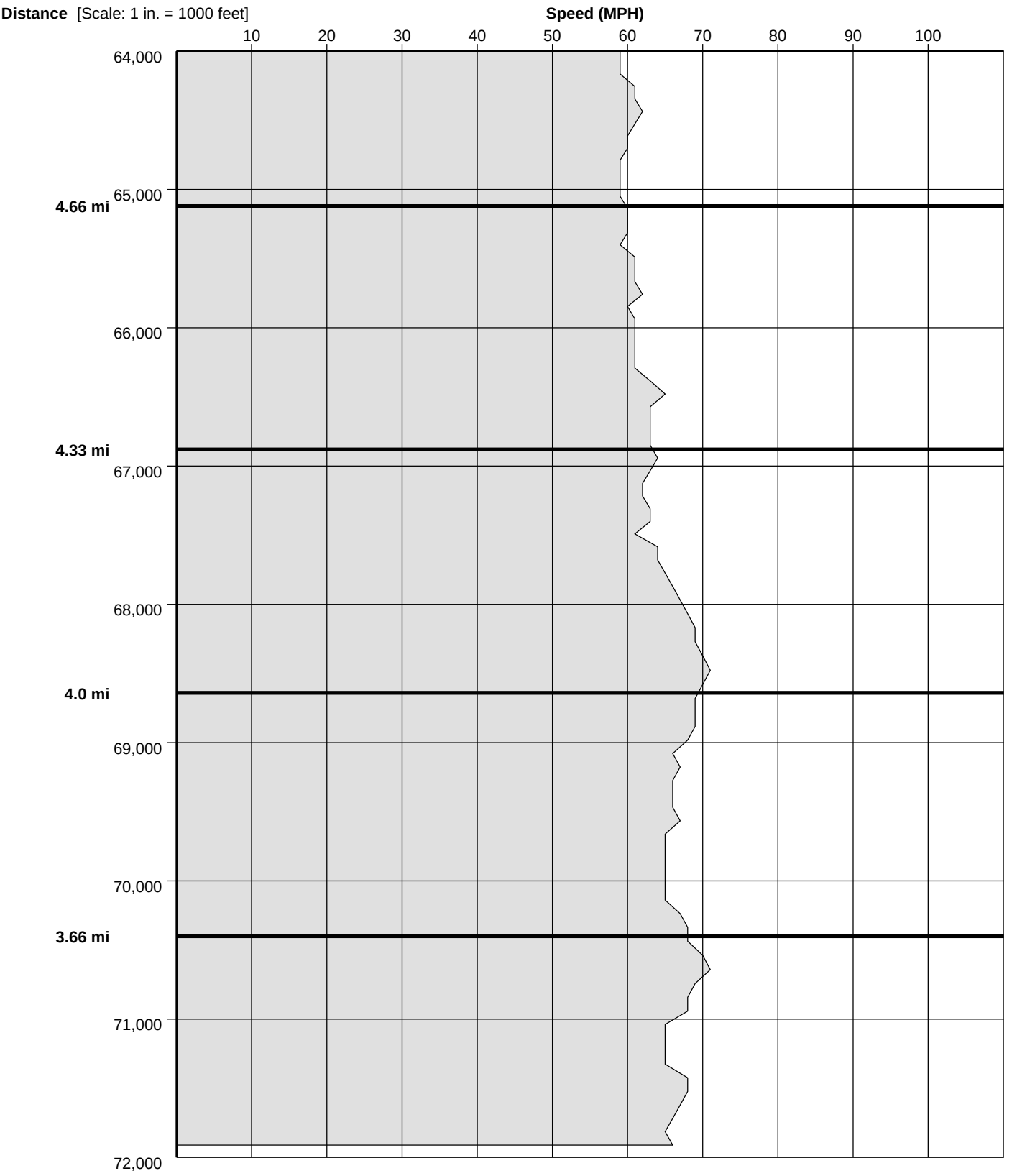
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 37**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



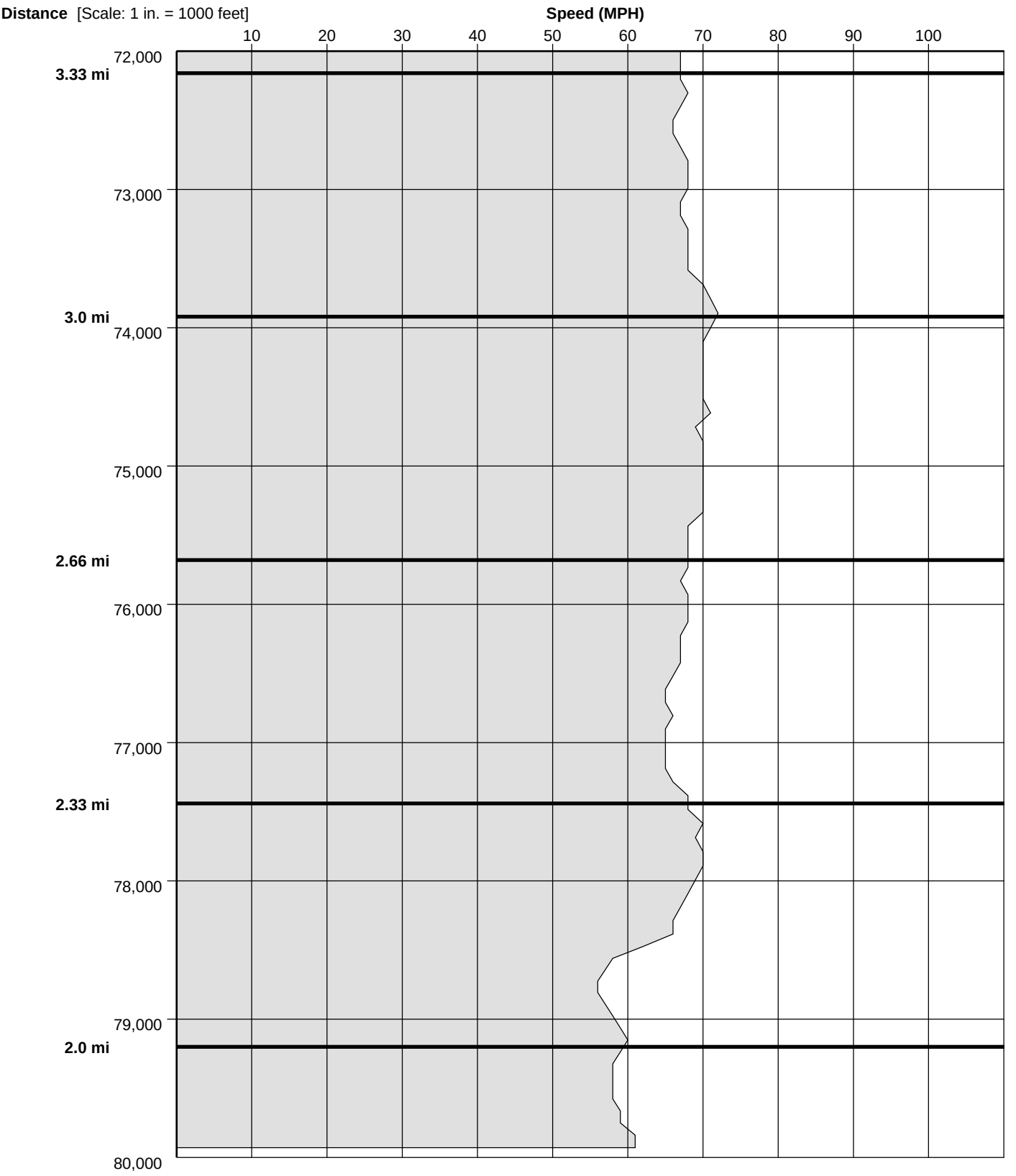
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 38**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



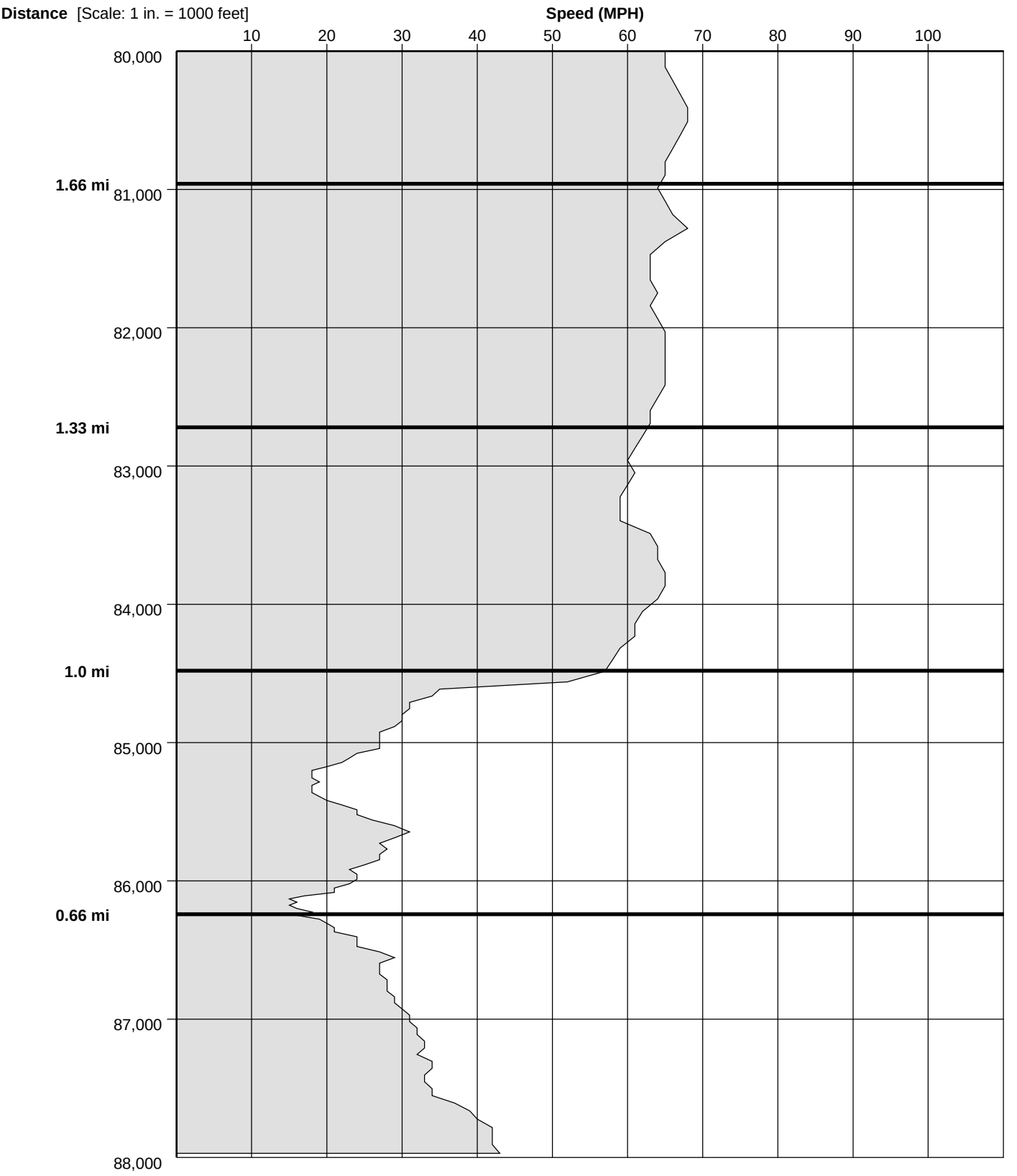
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 39**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



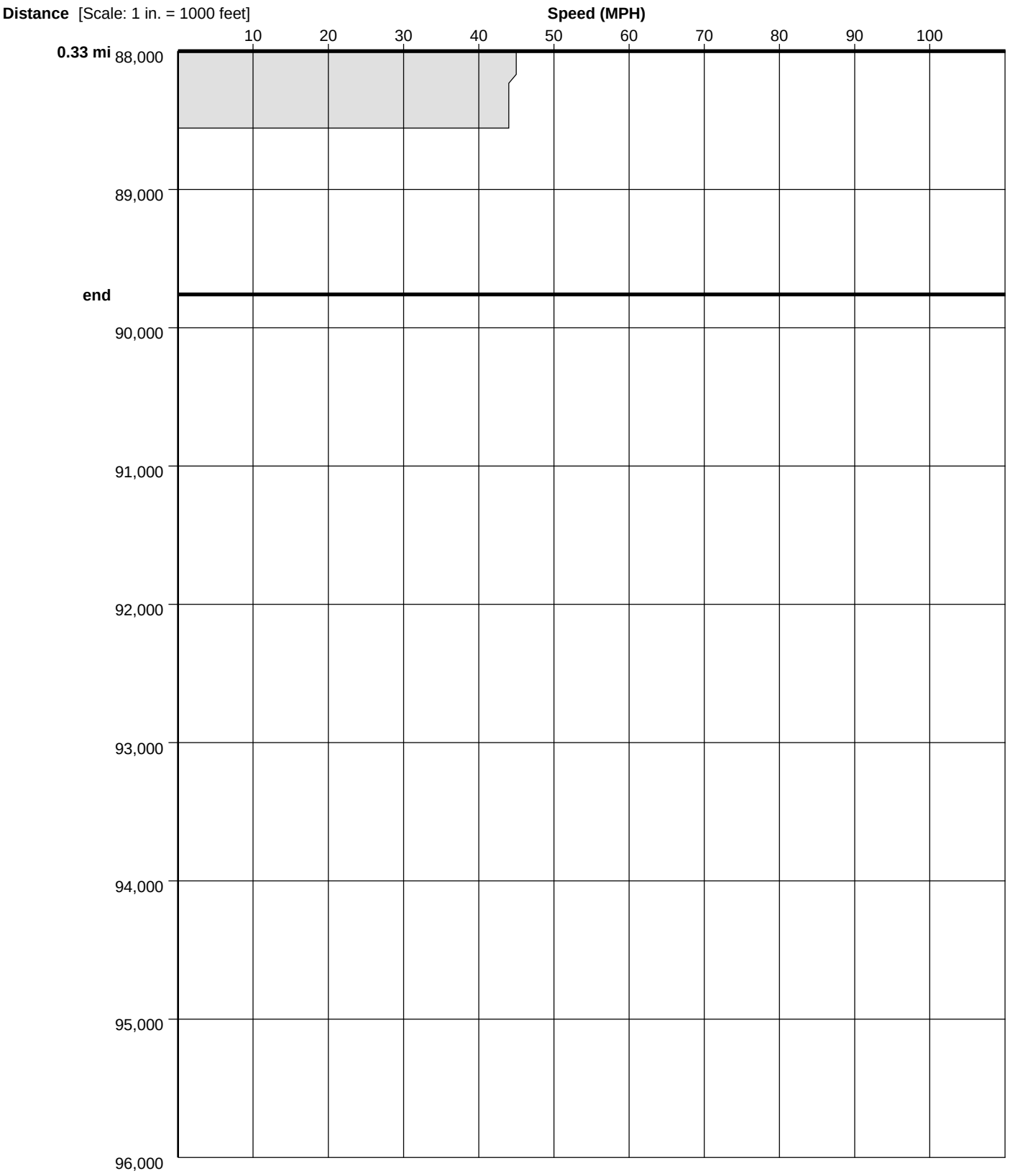
I-75 SB Li

12-18-06

Study Name **: I-75 SB Li**
Study Date **: 12/21/2006**
Page No. **: 40**

Speed Profile

Run : I-75 SB-Li-SB-003 Start Time: 18:00 (This is a Before Run)



PC-Travel for Windows Reports for study: I-75 SB

I-75 SB (Halle)

12-18-06

Study Summary

Runs Used in This Study

Node Info

#	Len	Name
1	0	start
2	1760	16.66 mi
3	1760	16.33 mi
4	1760	16.0 mi
5	1760	15.66 mi
6	1760	15.33 mi
7	1760	15.0 mi
8	1760	14.66 mi
9	1760	14.33 mi
10	1760	14.0 mi
11	1760	13.66 mi
12	1760	13.33 mi
13	1760	13.0 mi
14	1760	12.66 mi
15	1760	12.33 mi
16	1760	12.0 mi
17	1760	11.66 mi
18	1760	11.33 mi
19	1760	11.0 mi
20	1760	10.66 mi
21	1760	10.33 mi
22	1760	10.0 mi
23	1760	9.66 mi
24	1760	9.33 mi
25	1760	9.0 mi
26	1760	8.66 mi
27	1760	8.33 mi
28	1760	8.0 mi
29	1760	7.66 mi
30	1760	7.33 mi
31	1760	7.0 mi
32	1760	6.66 mi
33	1760	6.33 mi
34	1760	6.0 mi
35	1760	5.66 mi
36	1760	5.33 mi
37	1760	5.0 mi
38	1760	4.66 mi
39	1760	4.33 mi

40	1760	4.0 mi
41	1760	3.66 mi
42	1760	3.33 mi
43	1760	3.0 mi
44	1760	2.66 mi
45	1760	2.33 mi
46	1760	2.0 mi
47	1760	1.66 mi
48	1760	1.33 mi
49	1760	1.0 mi
50	1760	0.66 mi
51	1760	0.33 mi
52	1760	end

Length of Study Route = 89,760 feet

Run Title	Start Date	Start Time	Length	Before/ After	Run Type
I-75 SB-Halle-SB-001	05/09/05	15:39	87989	Before	Secondary
I-75 SB-Halle-SB-002	05/09/05	16:28	89804	Before	Primary
I-75 SB-Halle-SB-003	05/09/05	17:16	88520	Before	Secondary

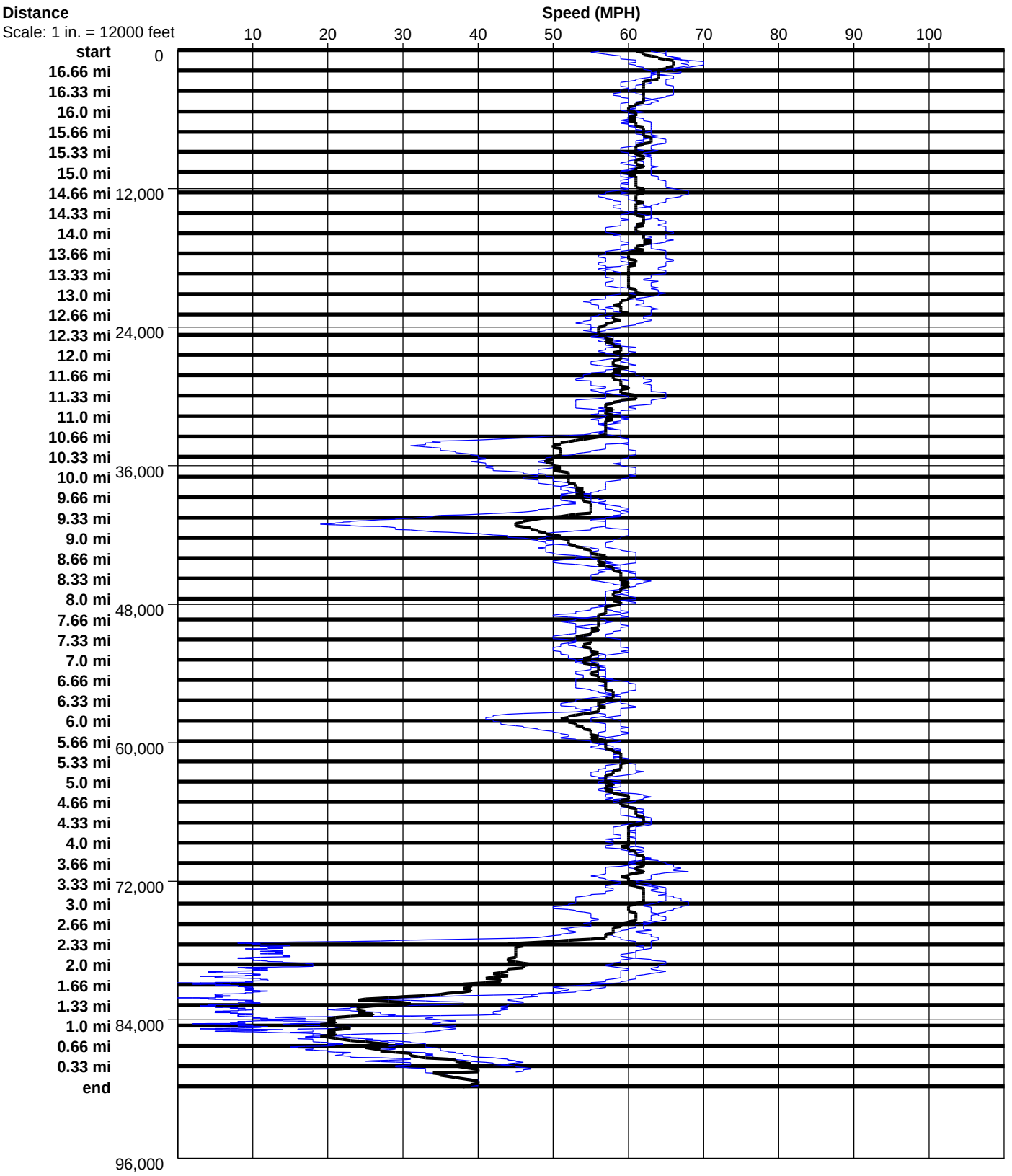
Notes:

I-75 SB (Halle)

12-18-06

Study Name : **I-75 SB**
Study Date : **12/21/2006**
Page No. : **4**

Speed/Distance Profiles of All Runs

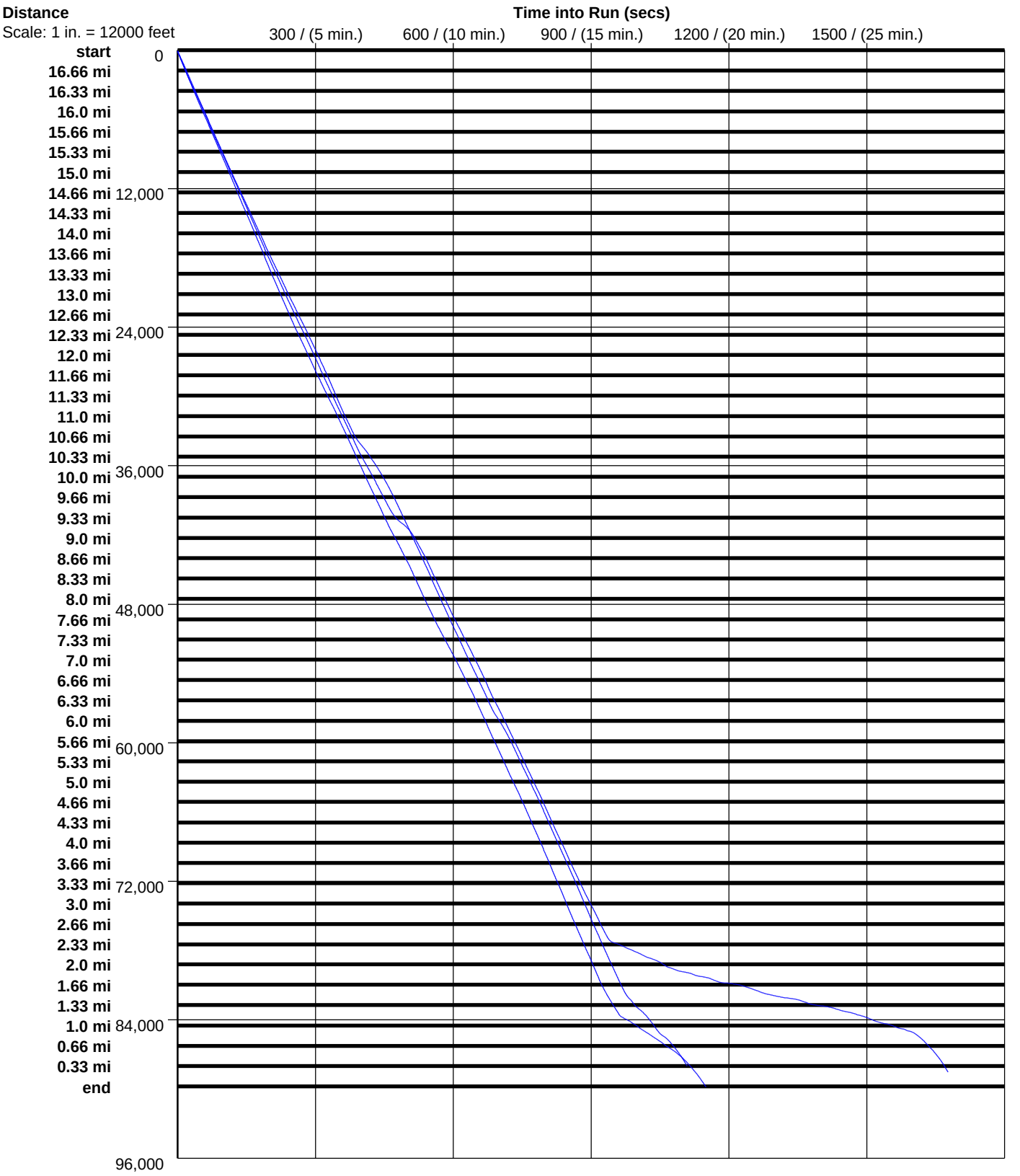


I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 5**

Time/Space Trajectories of All Runs



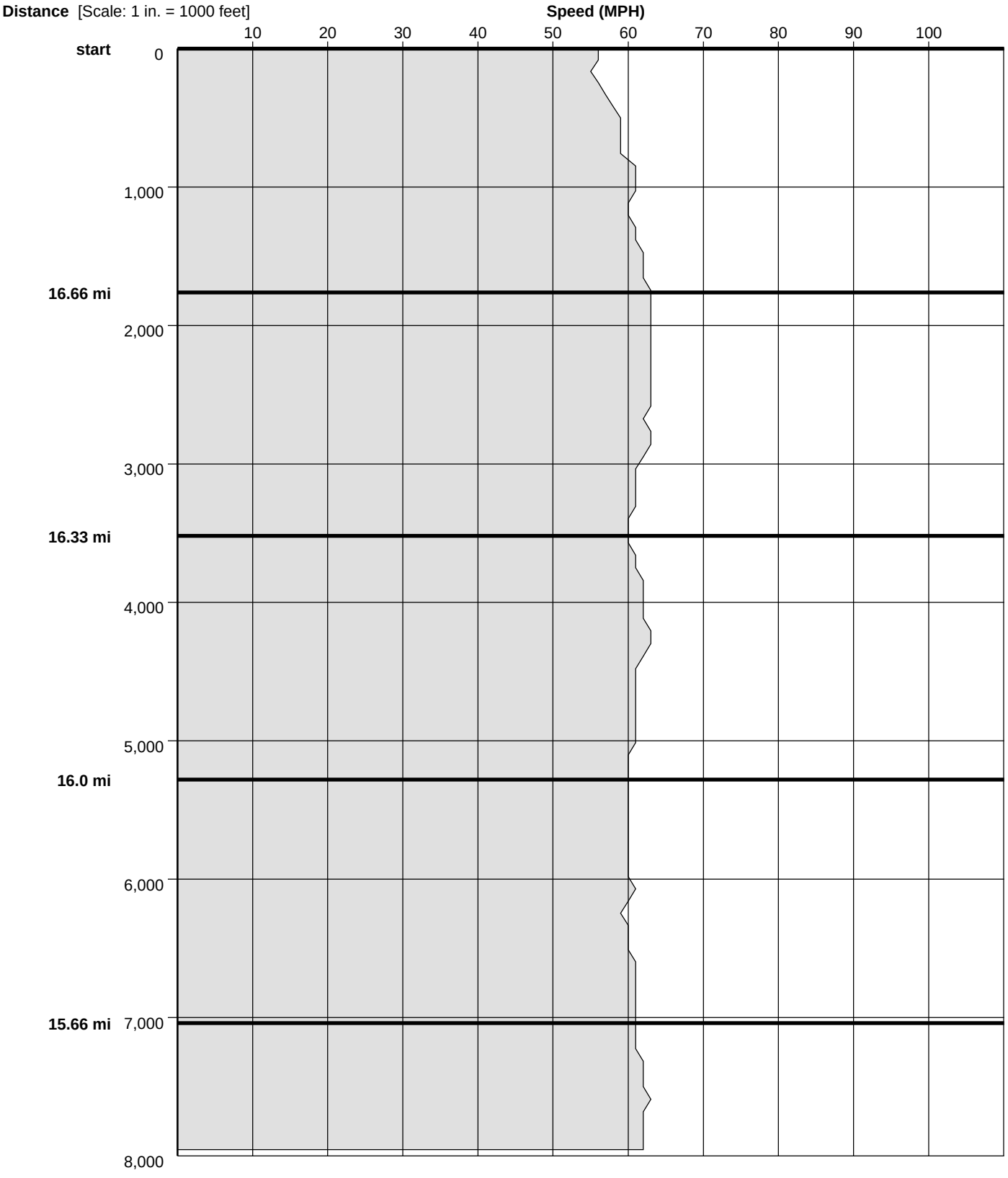
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 6**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



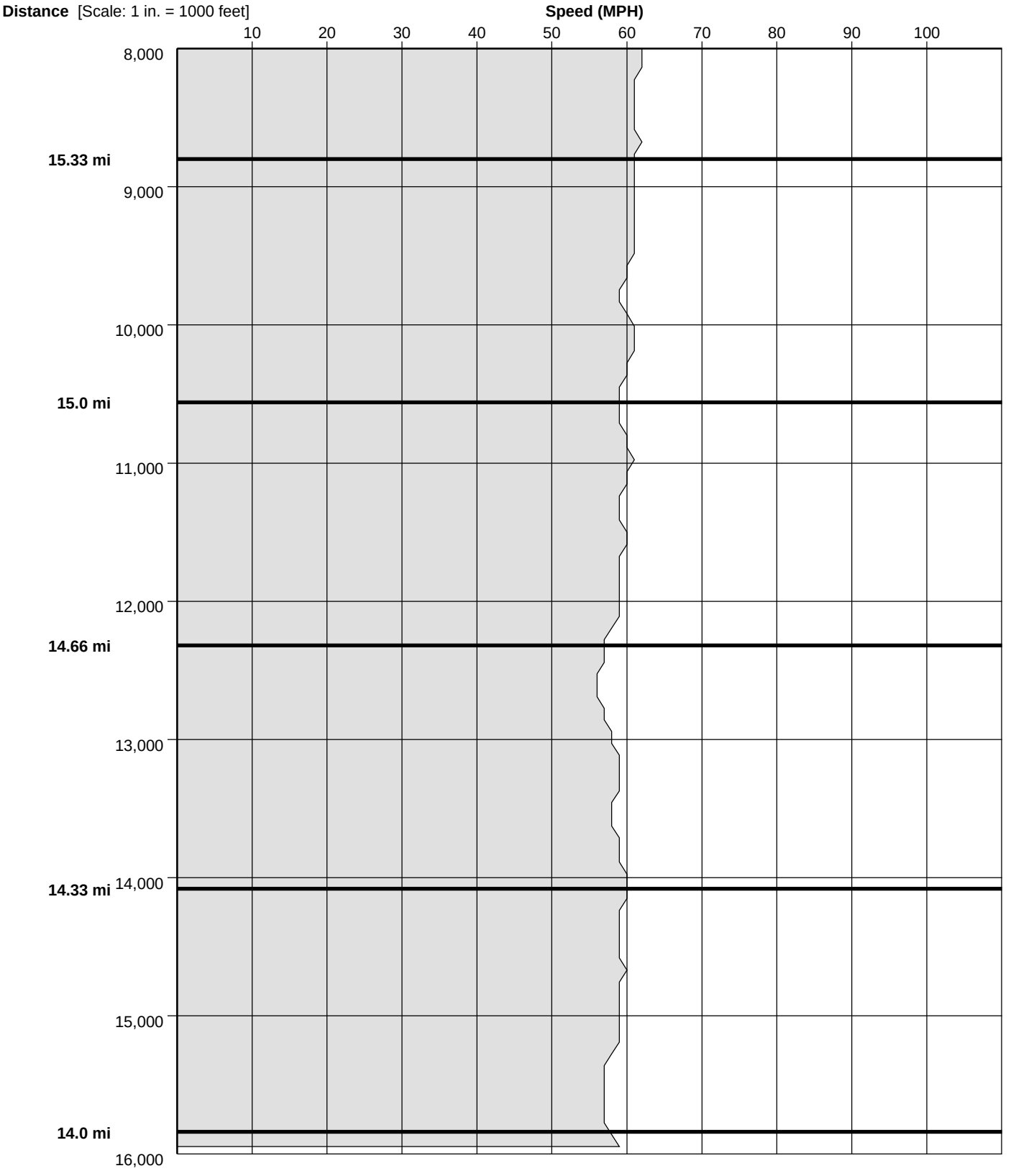
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 7**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



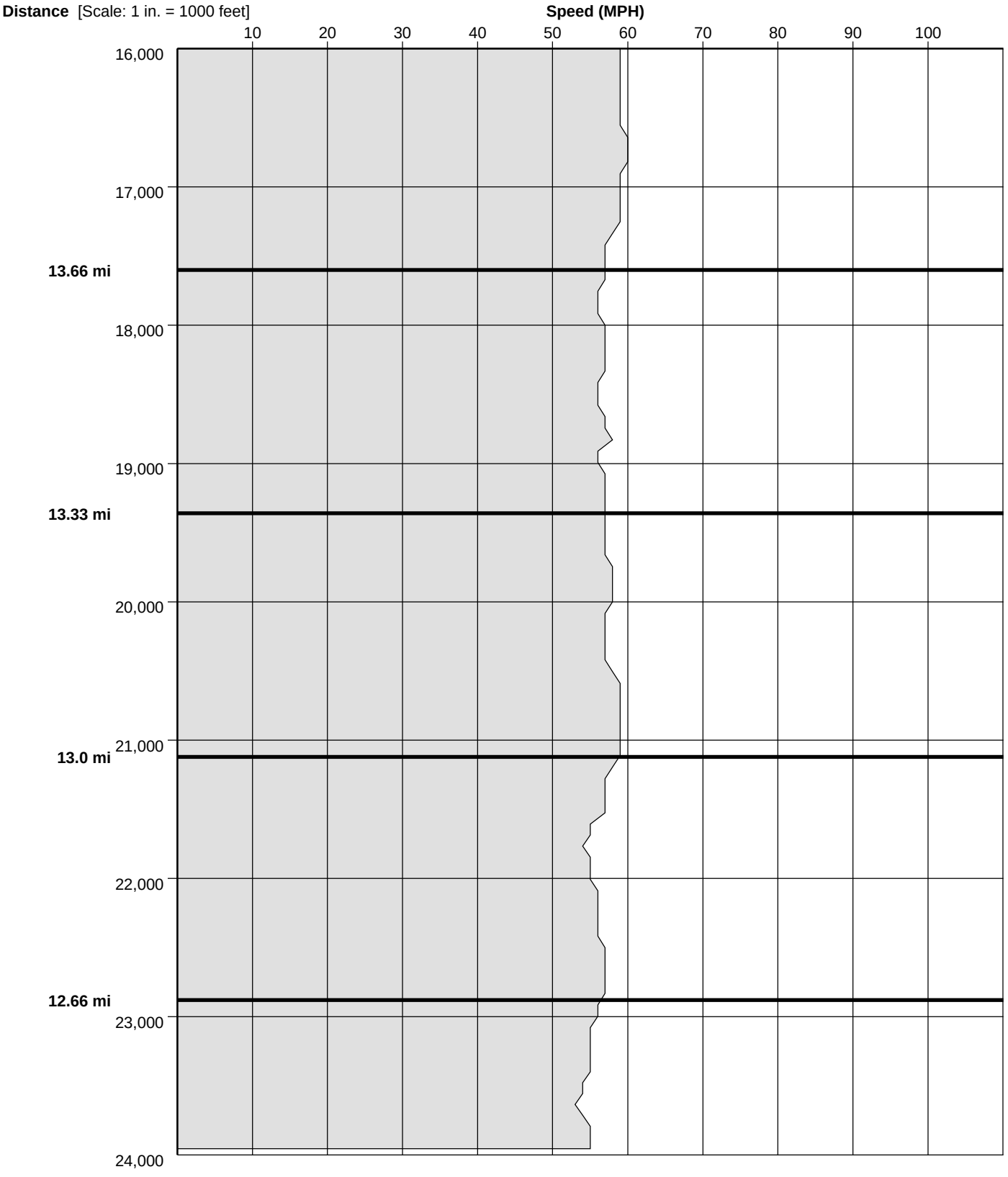
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 8**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



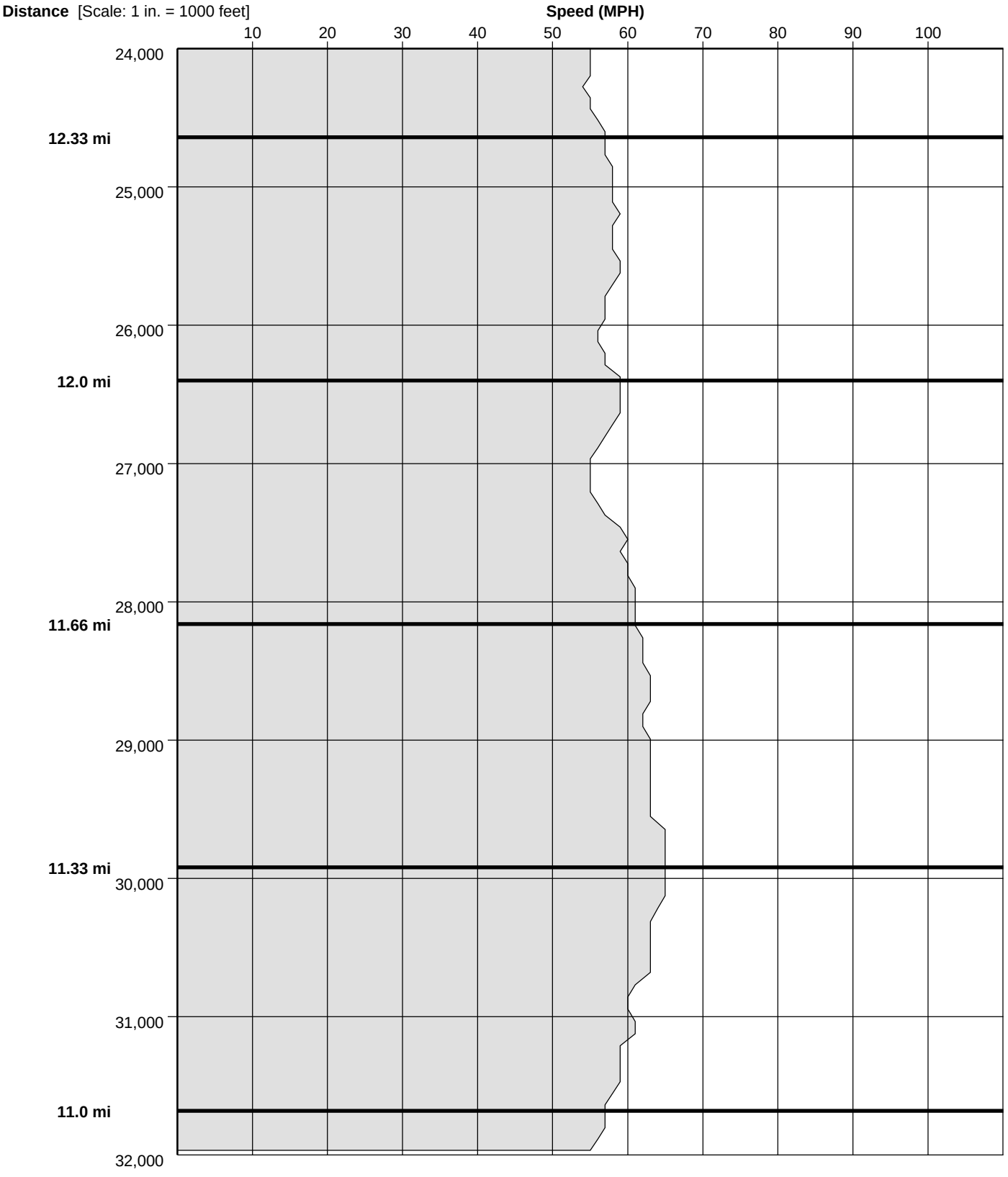
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 9**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



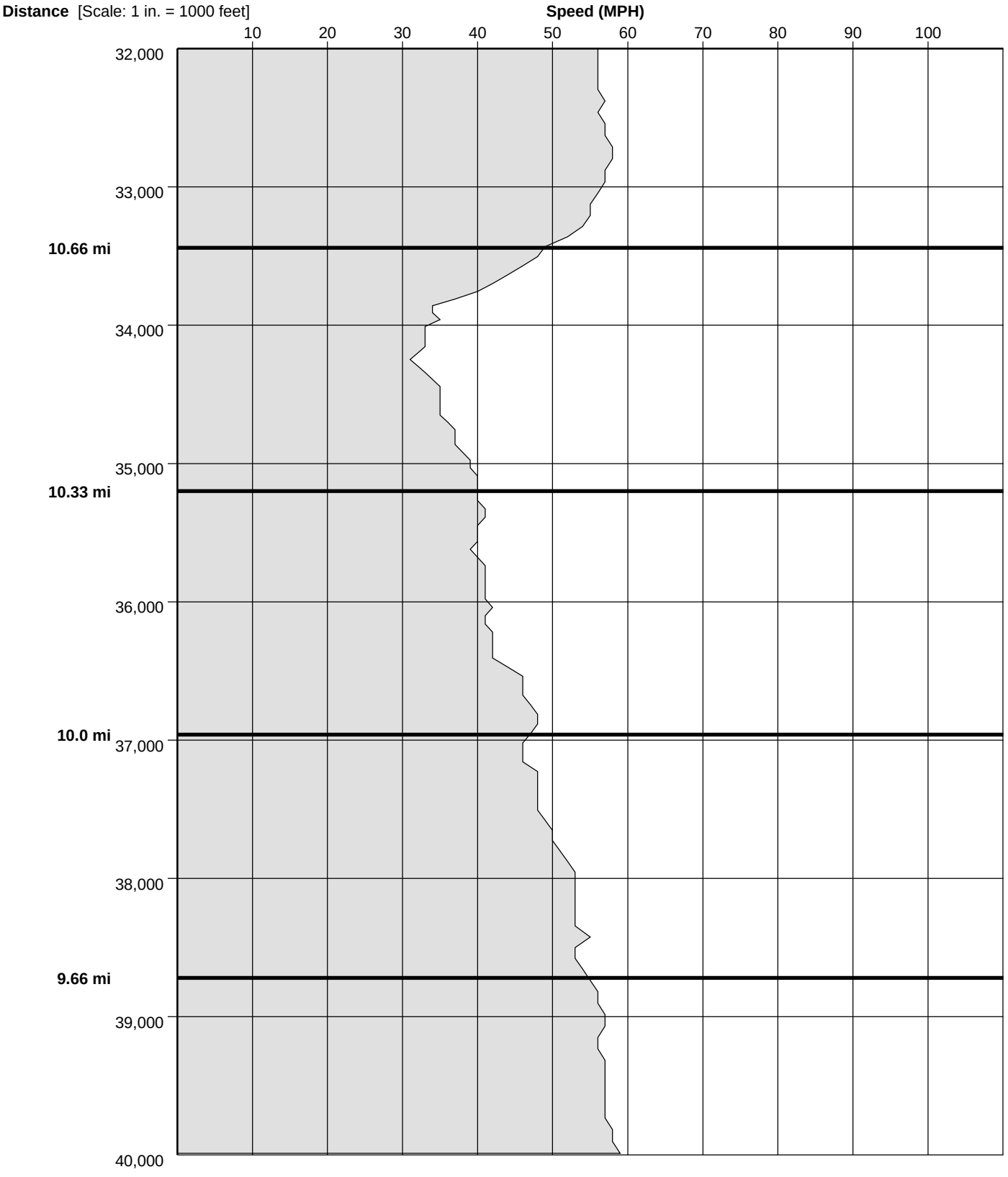
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 10**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



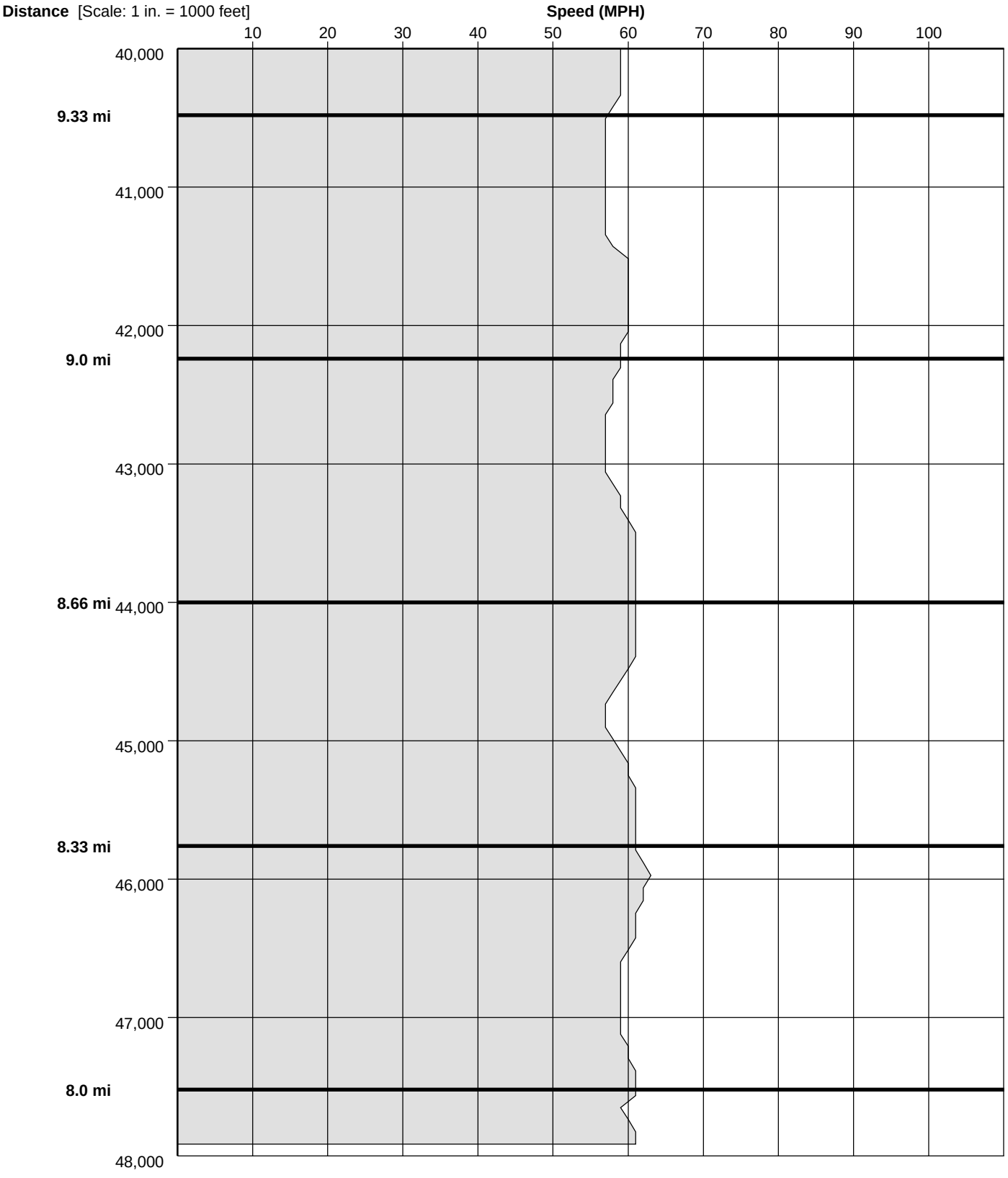
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 11**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



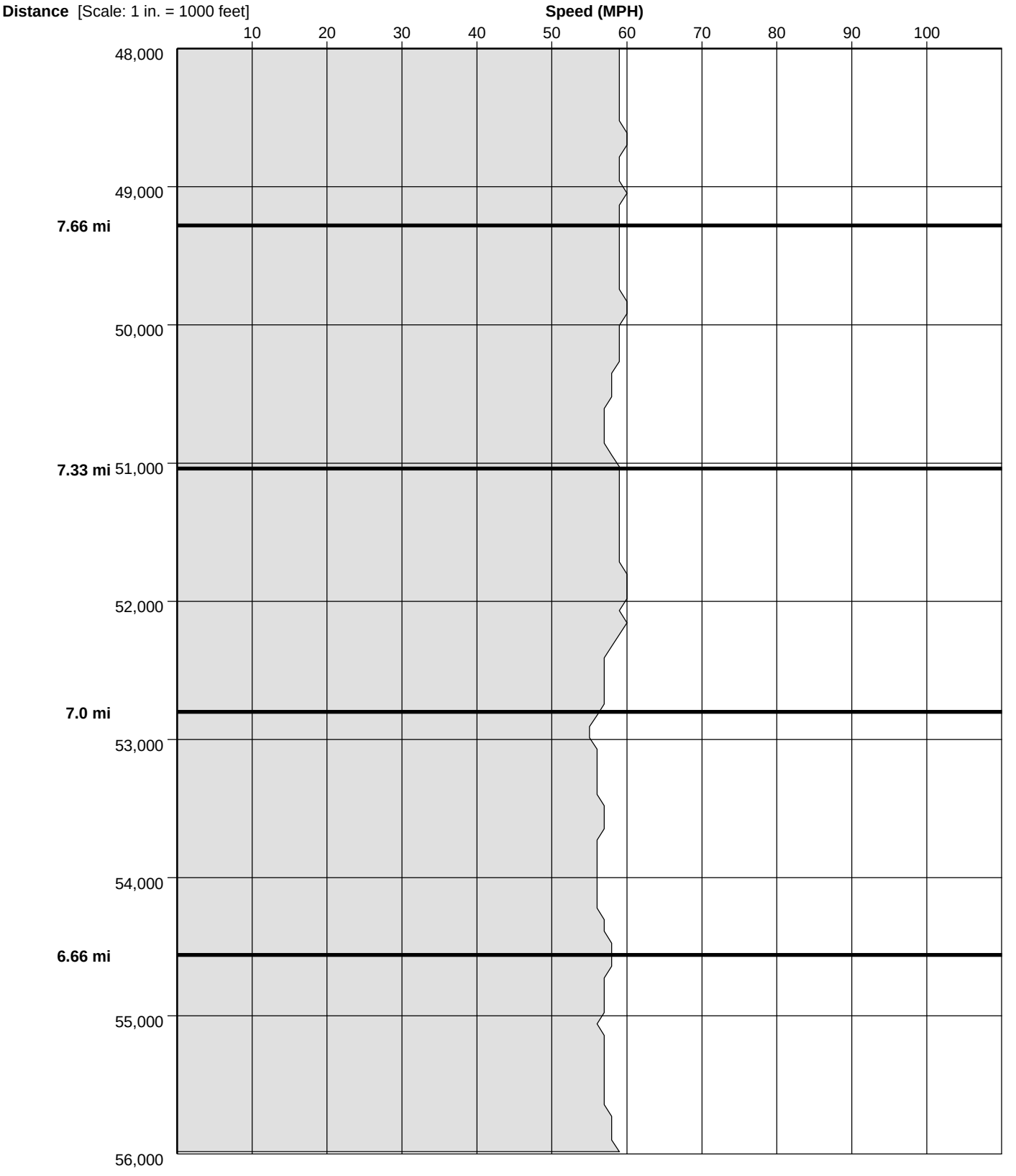
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 12**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



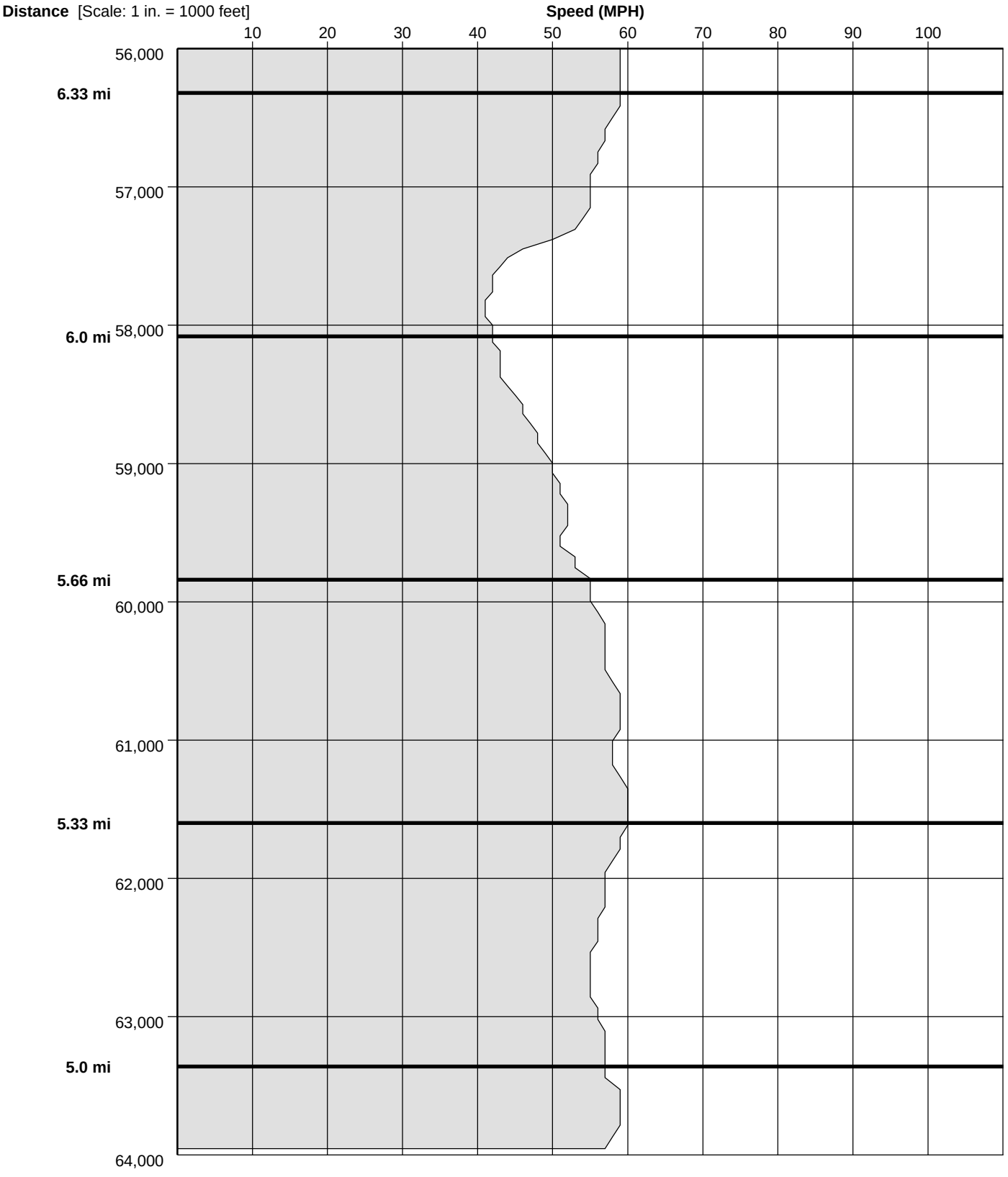
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 13**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



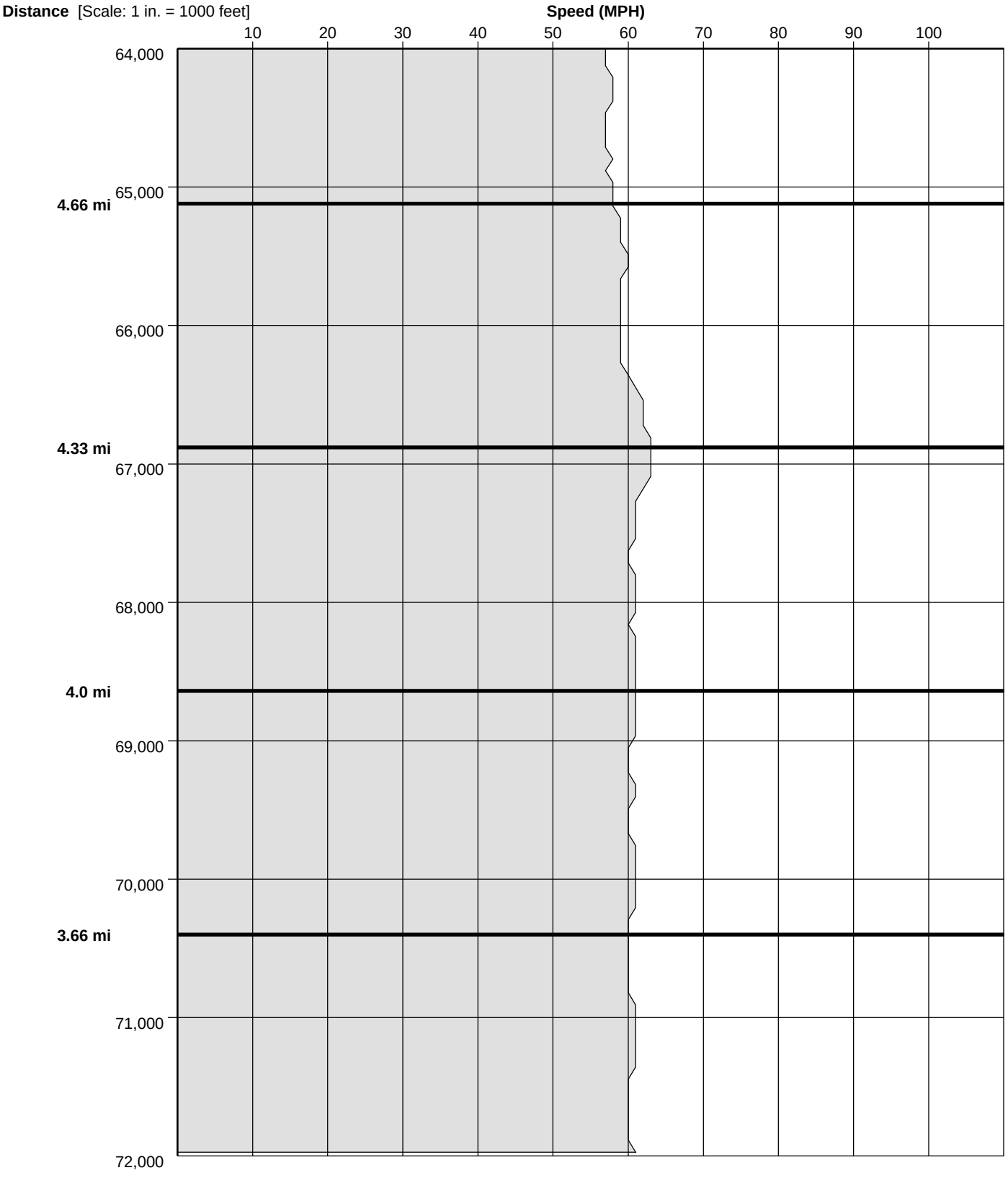
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 14**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



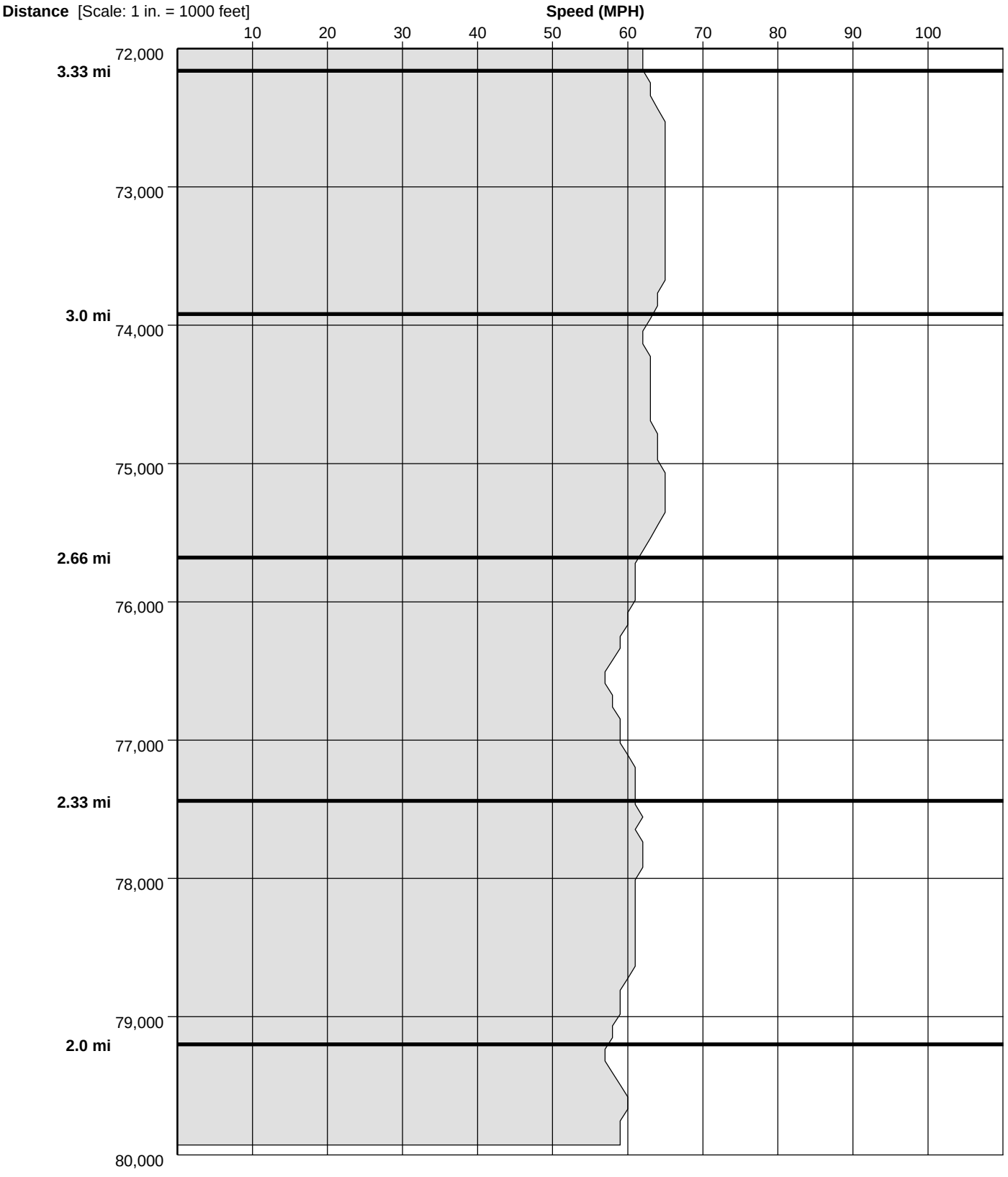
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 15**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



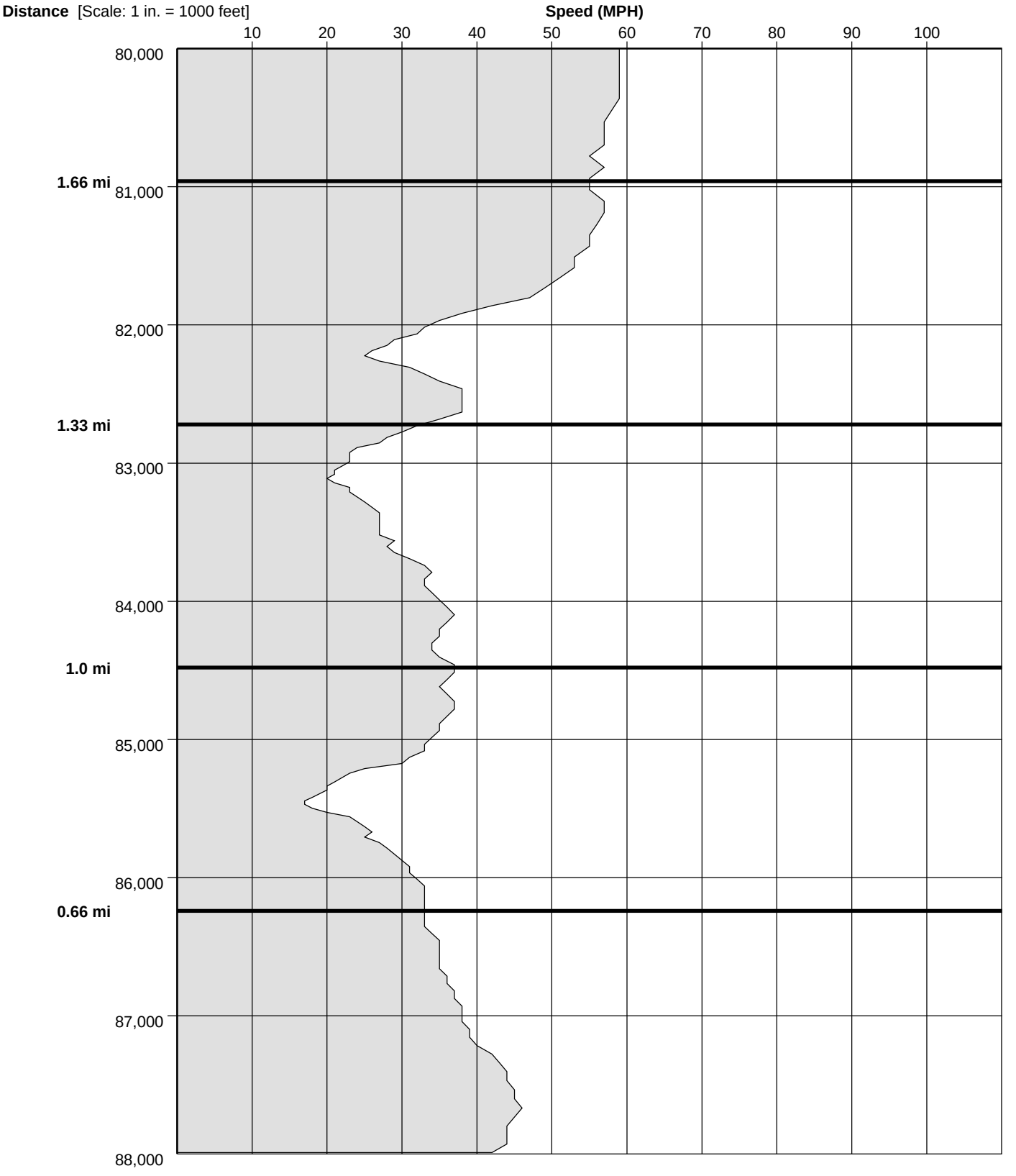
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 16**

Speed Profile

Run : I-75 SB-Halle-SB-001 Start Time: 15:39 (This is a Before Run)



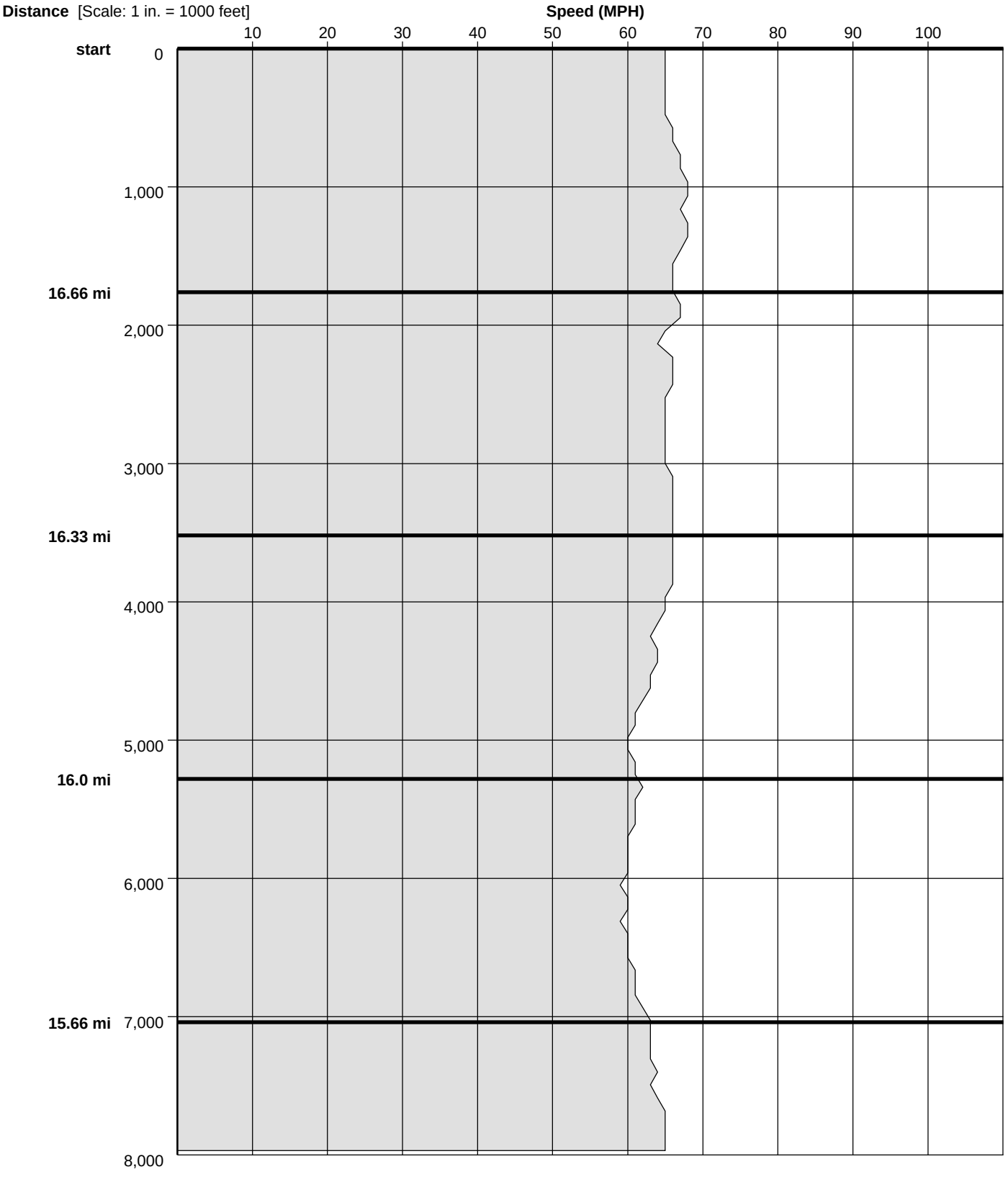
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 17**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



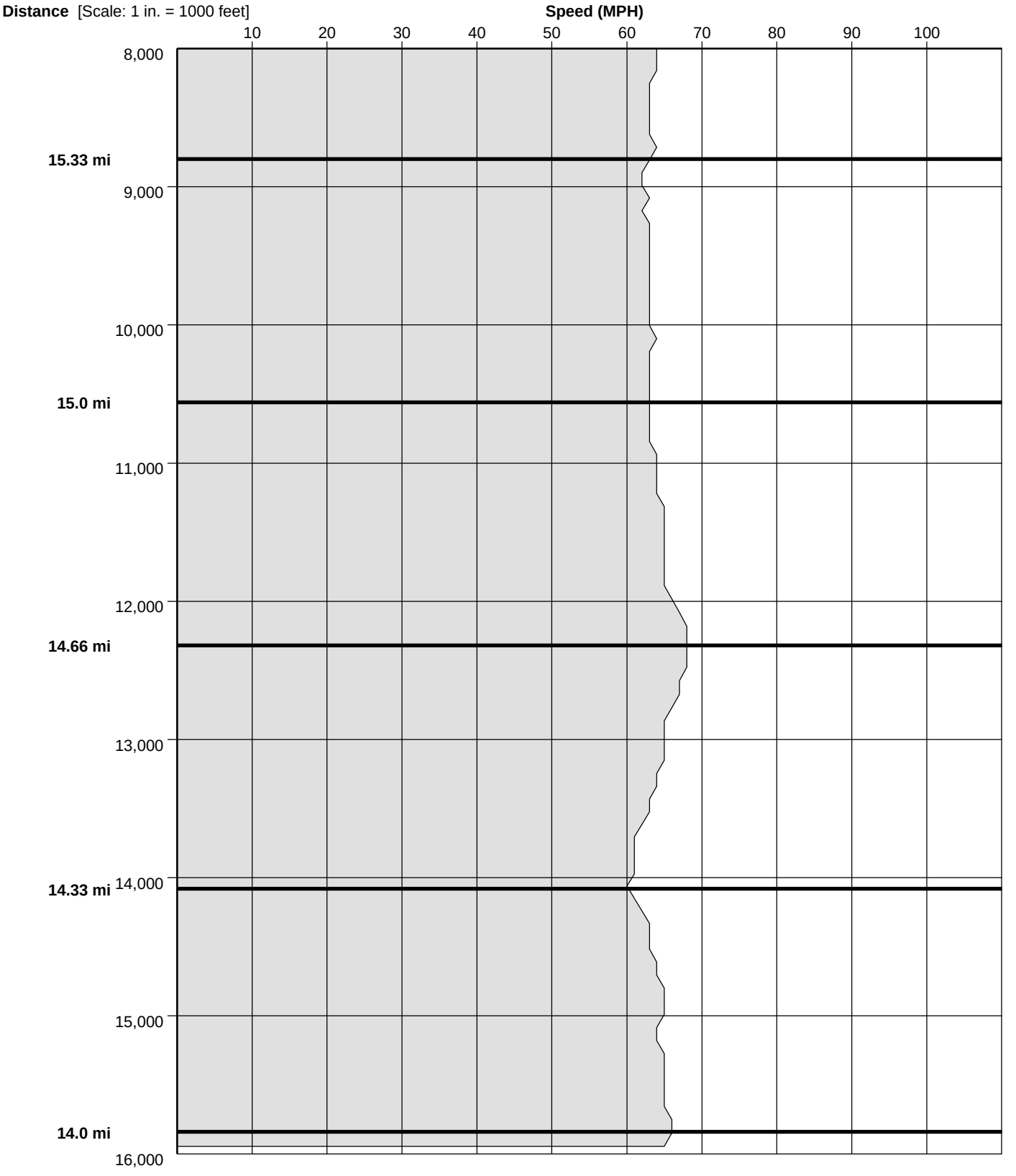
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 18**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



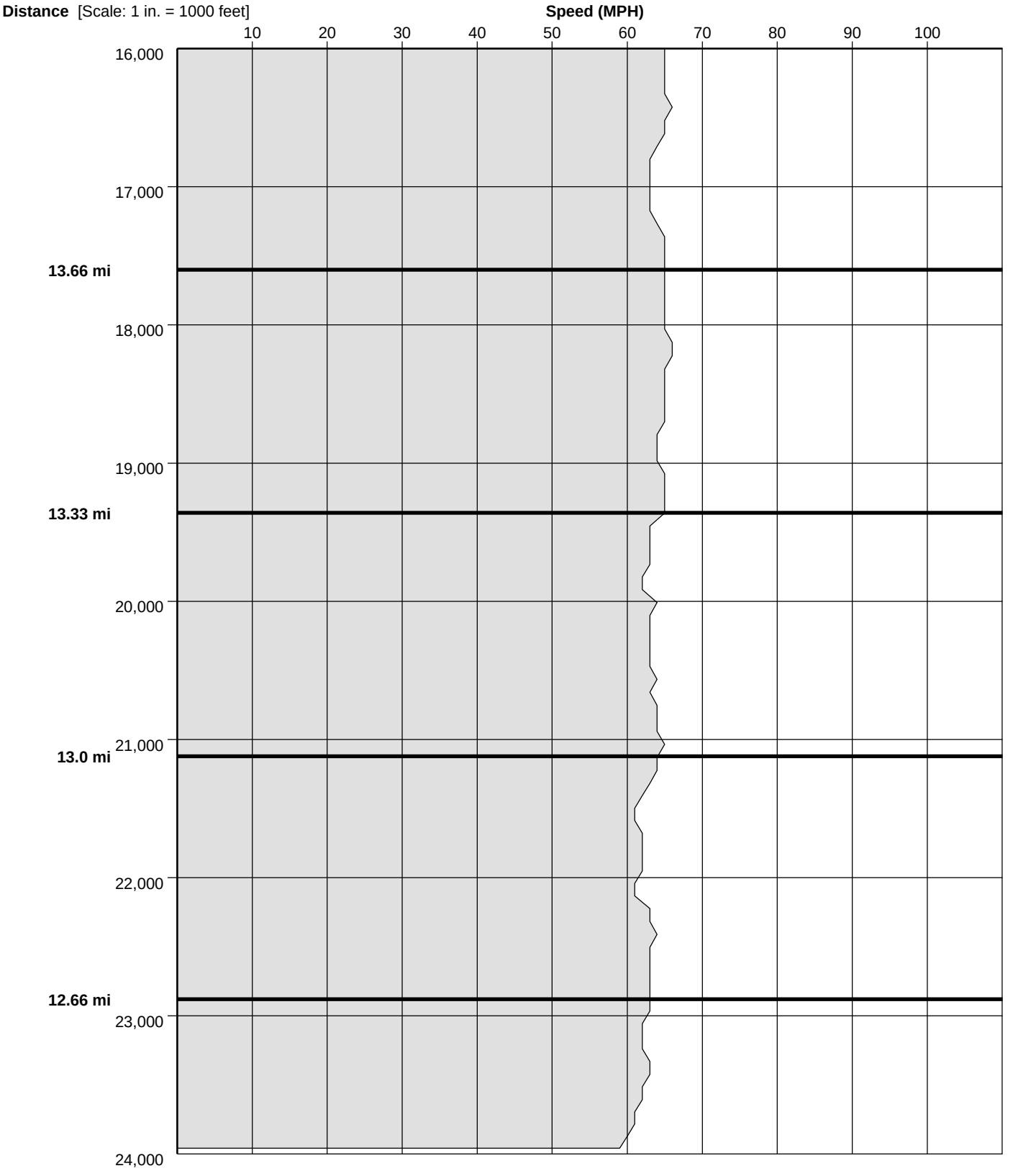
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 19**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



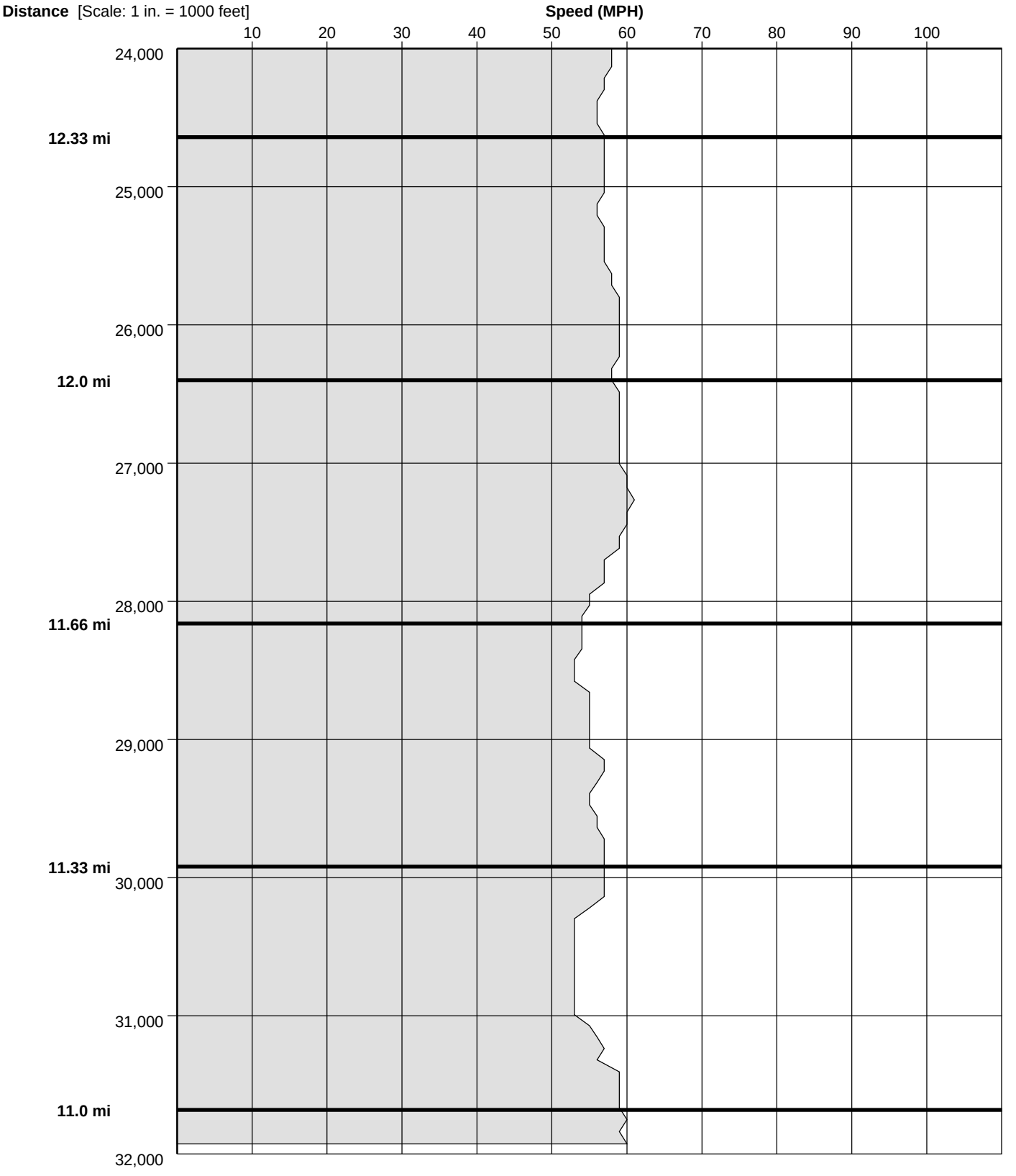
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 20**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



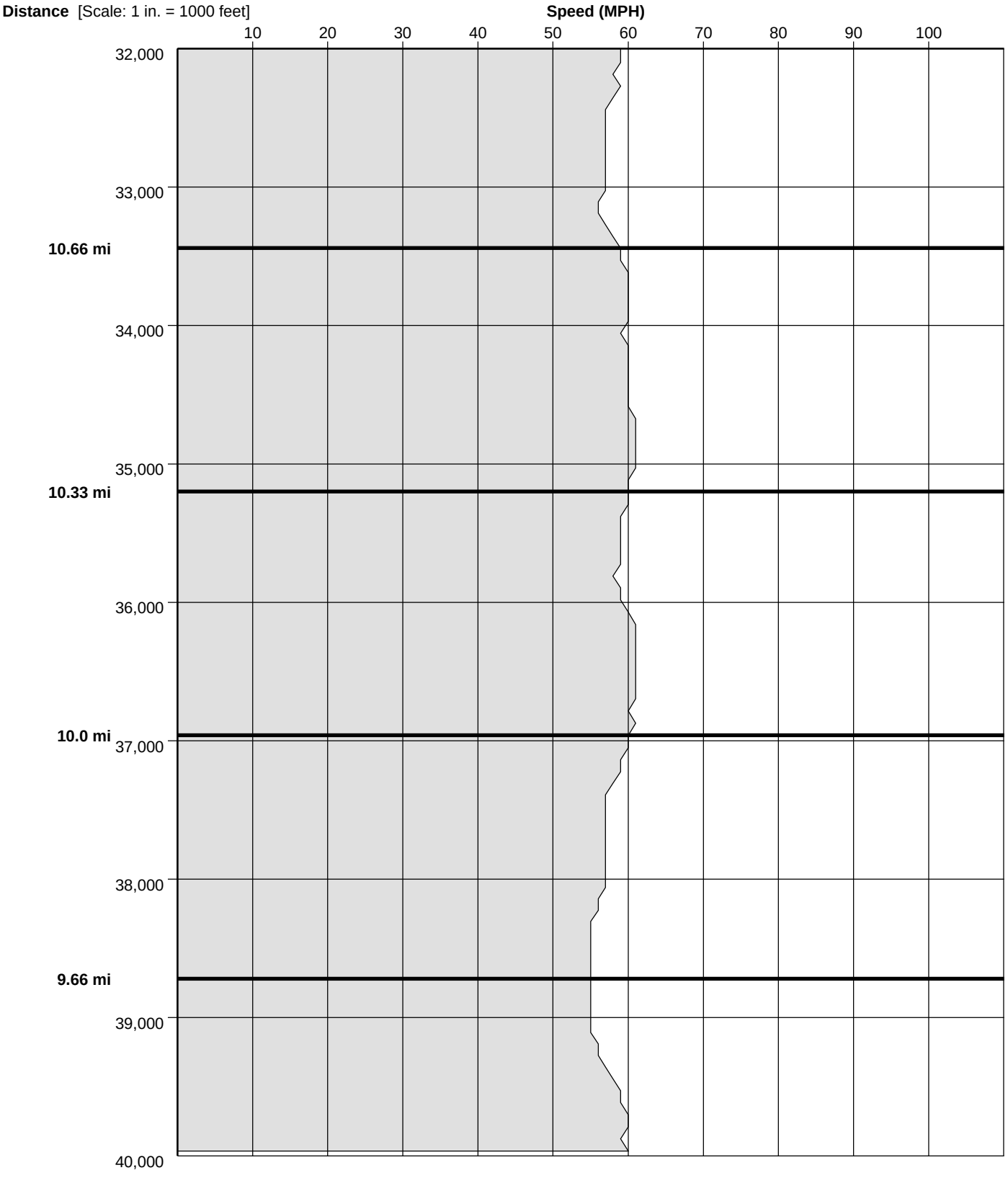
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 21**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



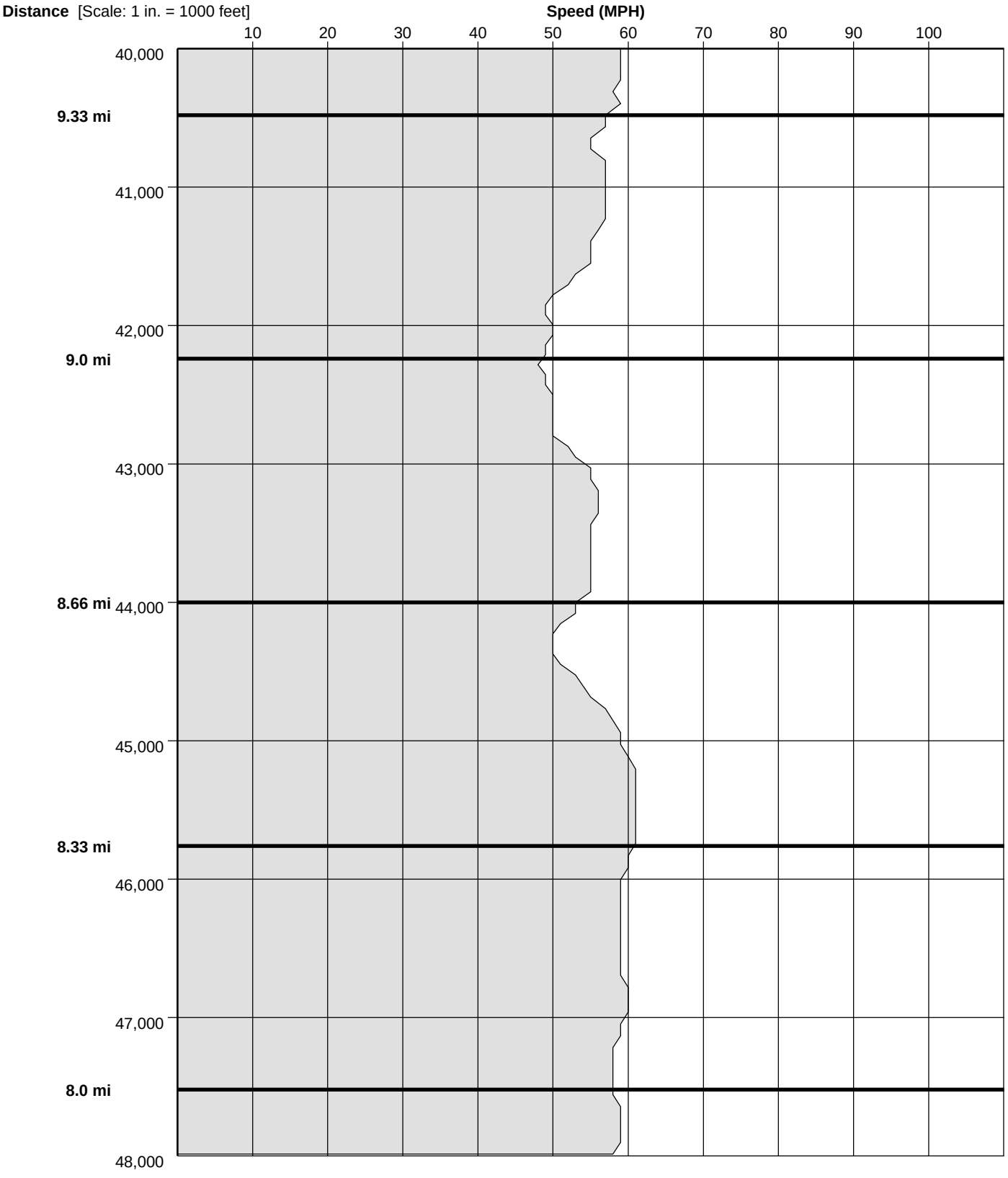
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 22**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



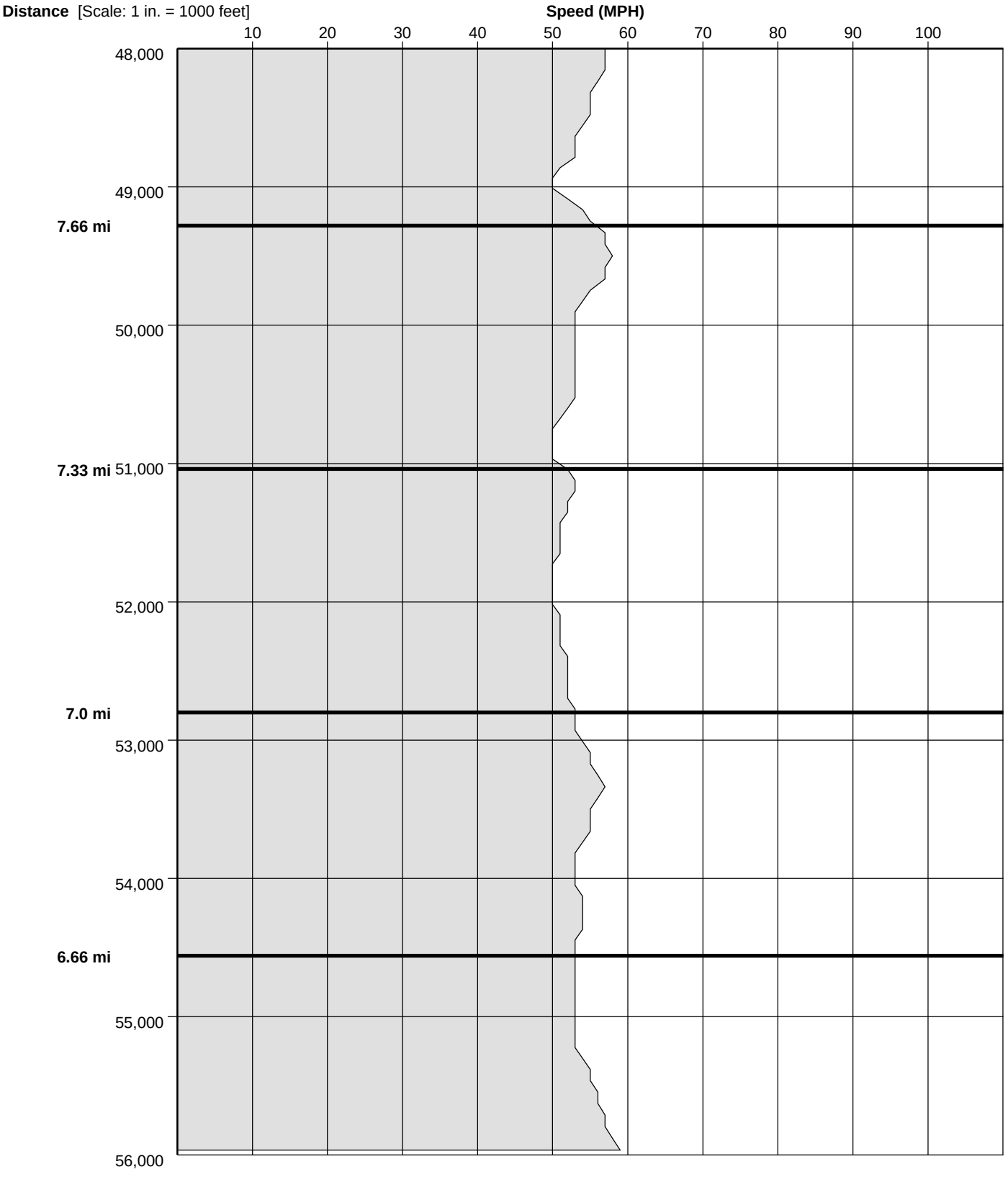
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 23**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



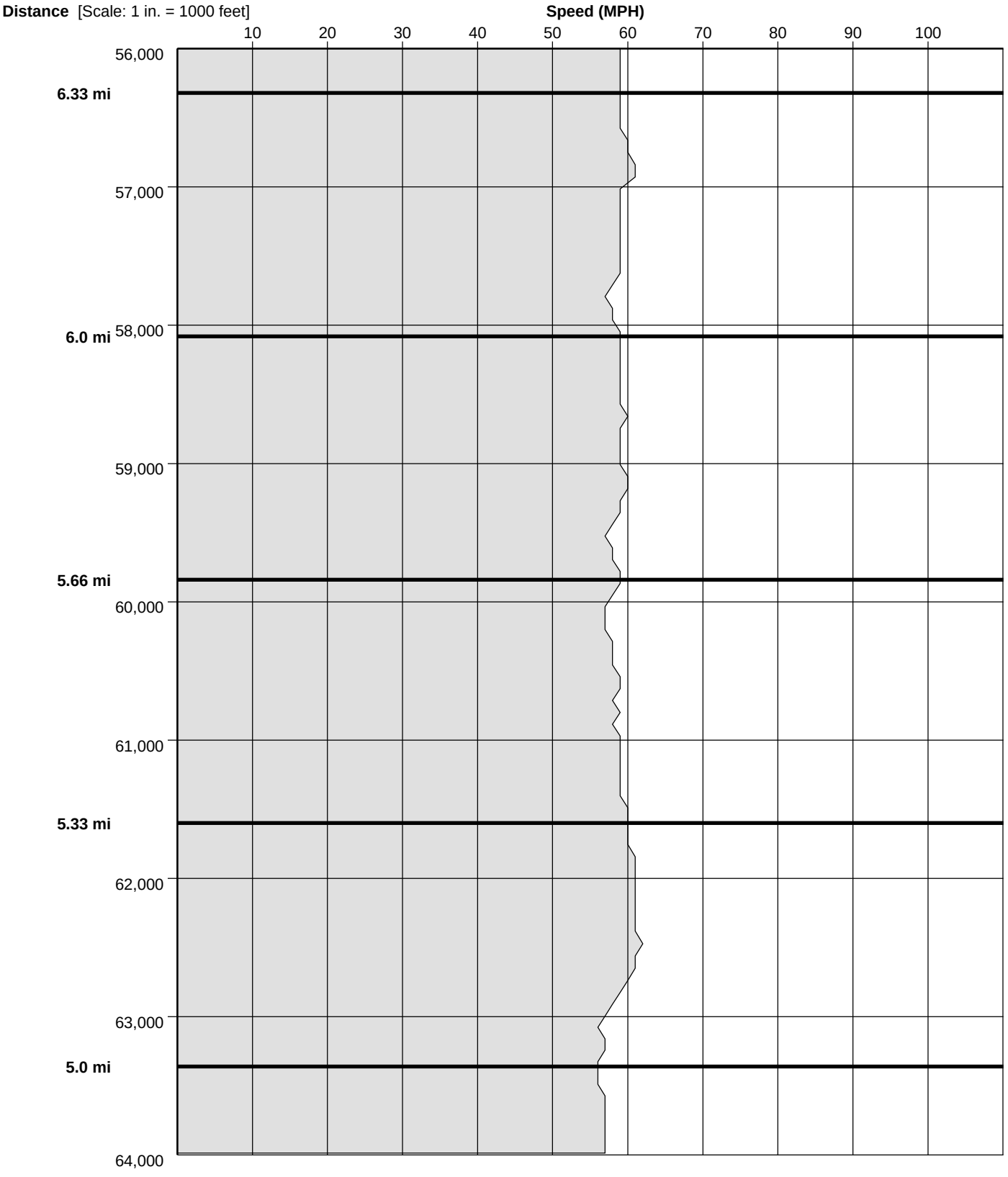
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 24**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



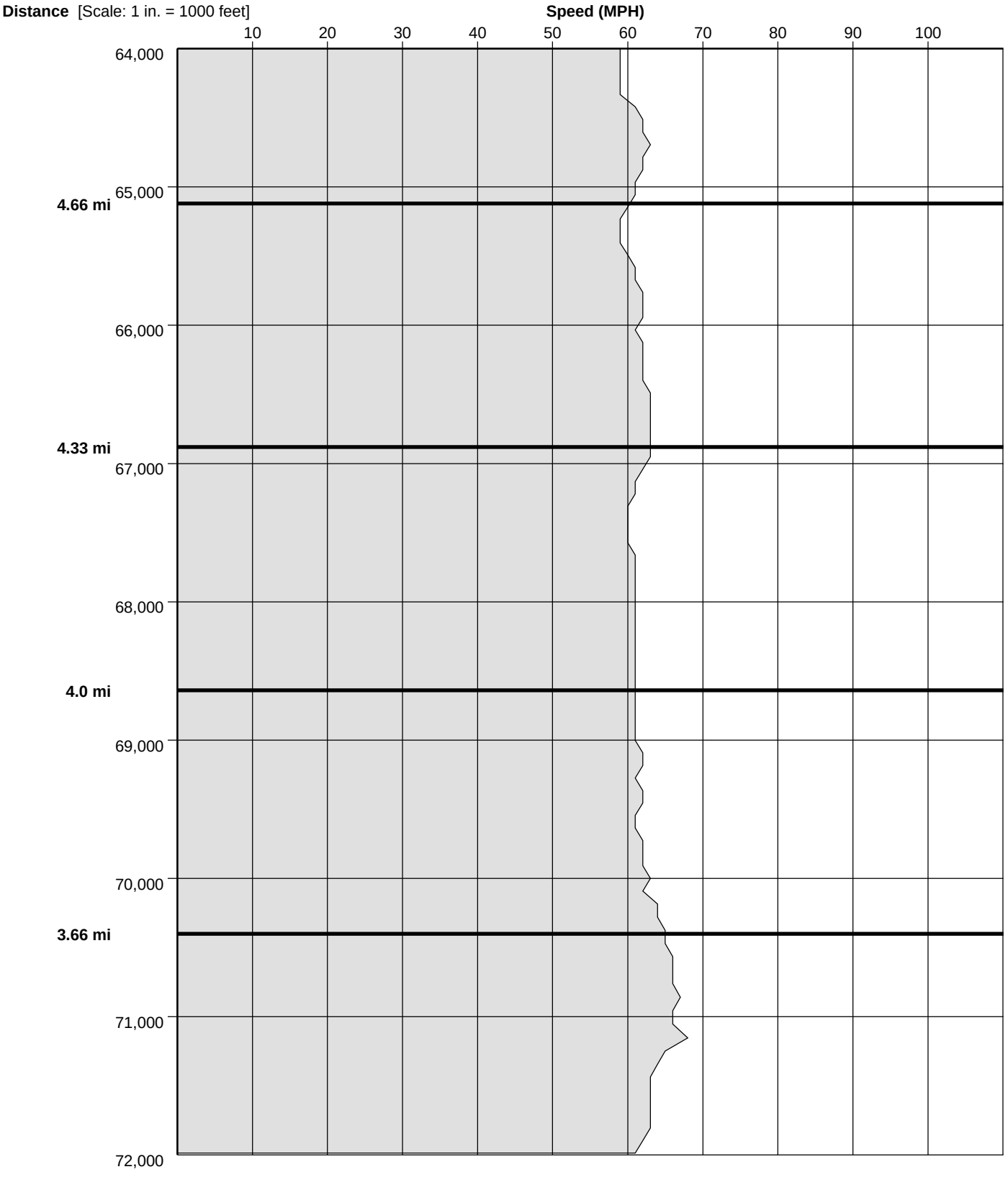
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 25**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



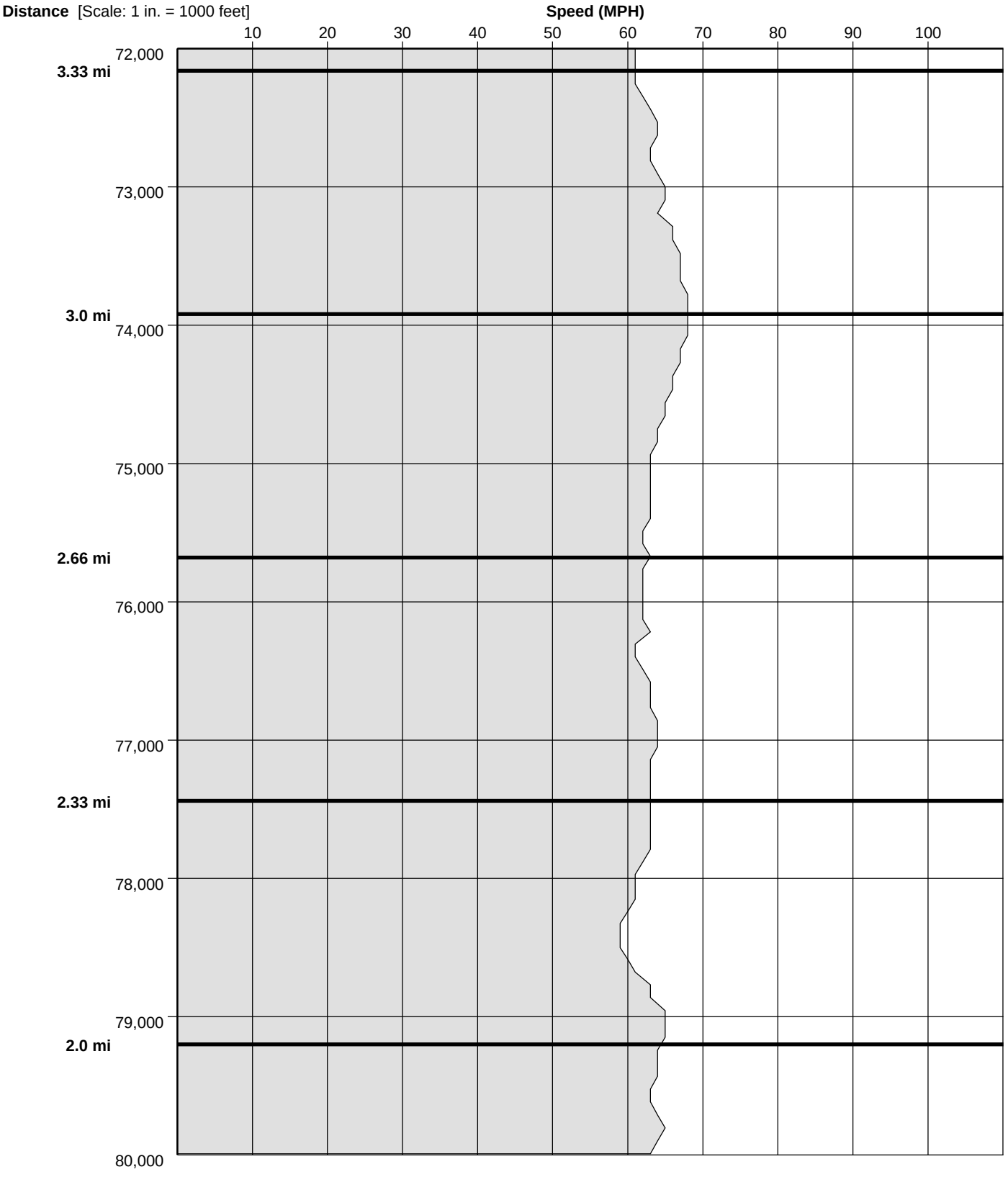
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 26**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



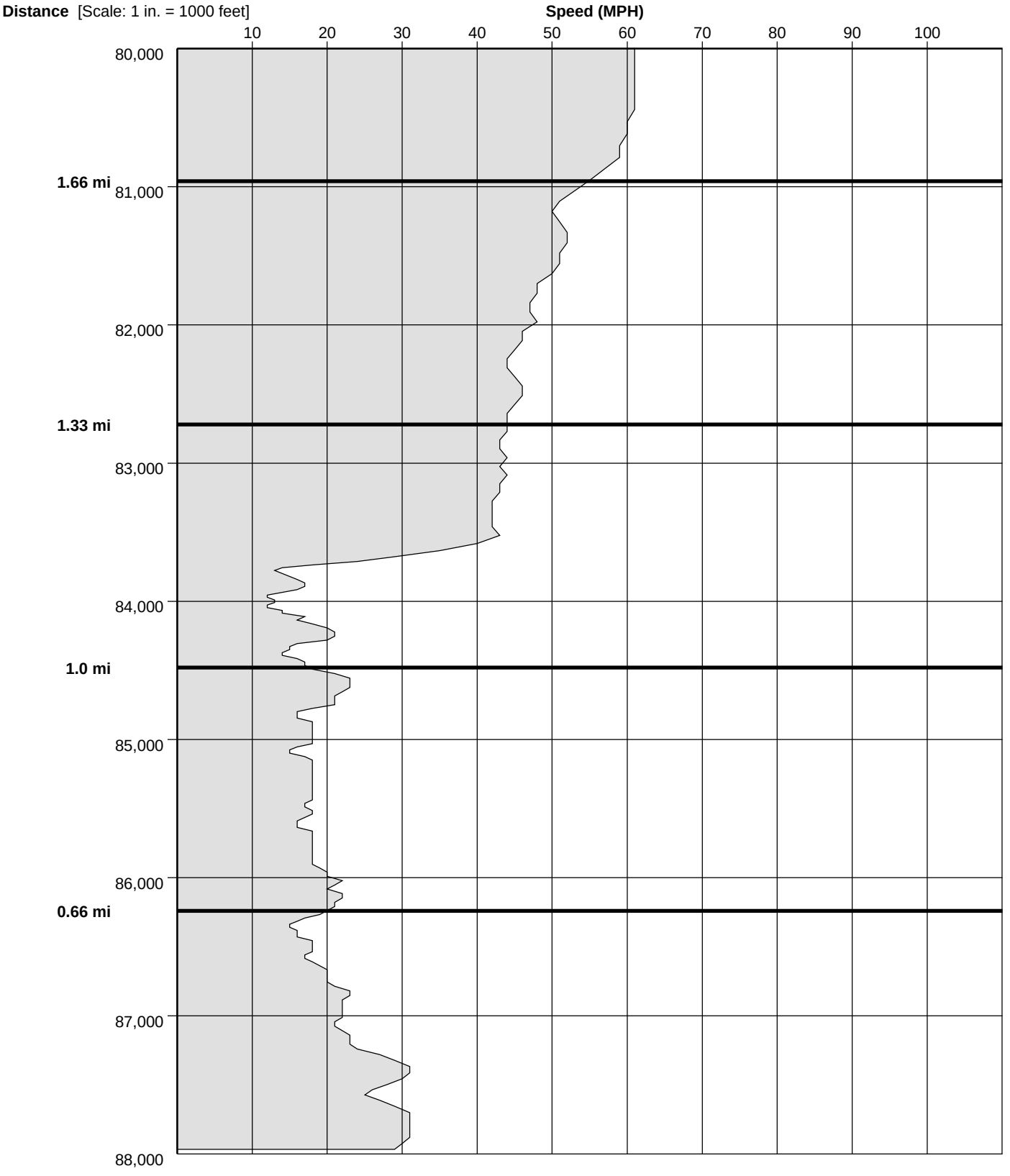
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 27**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



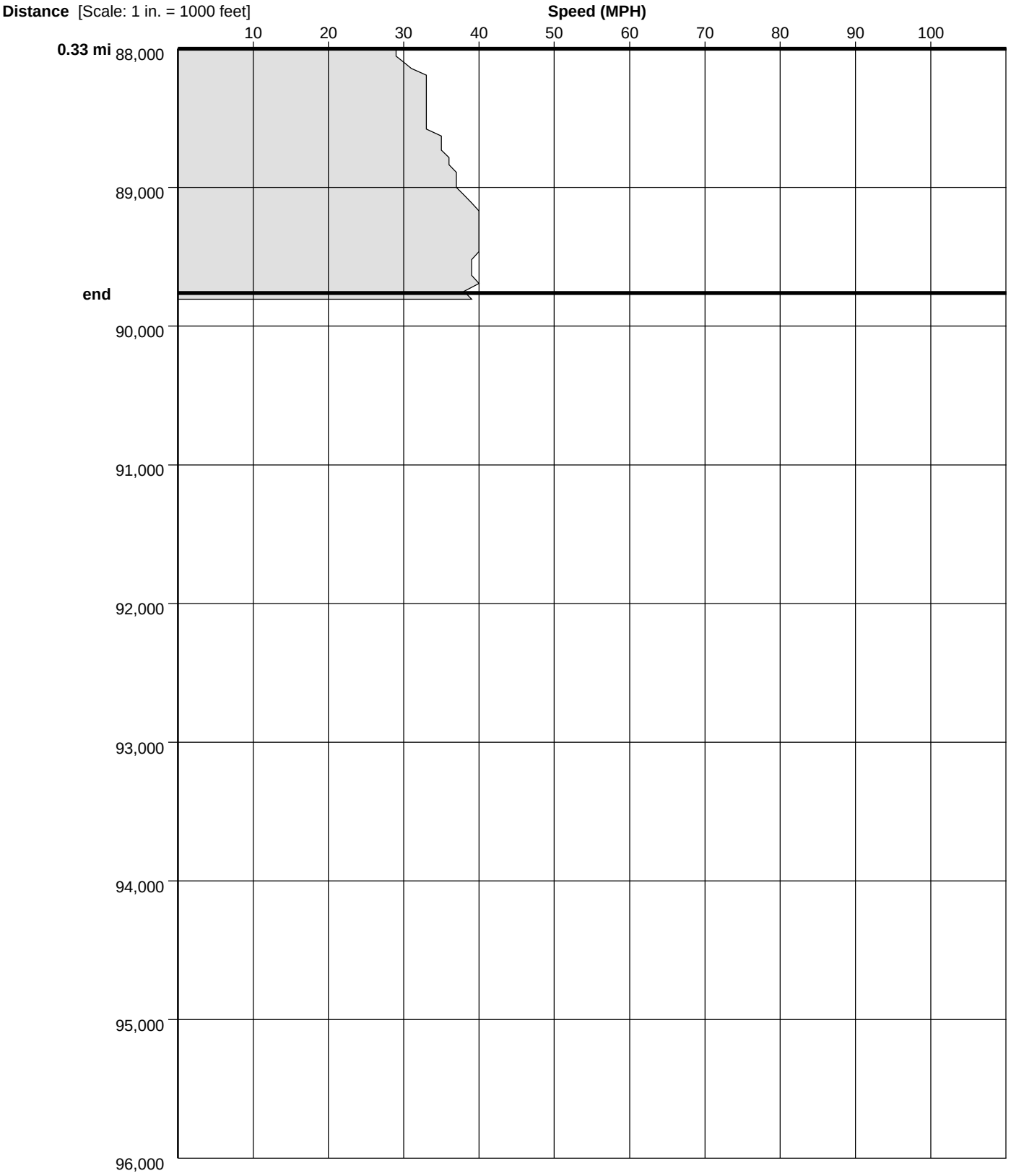
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 28**

Speed Profile

Run : I-75 SB-Halle-SB-002 Start Time: 16:28 (This is a Before Run)



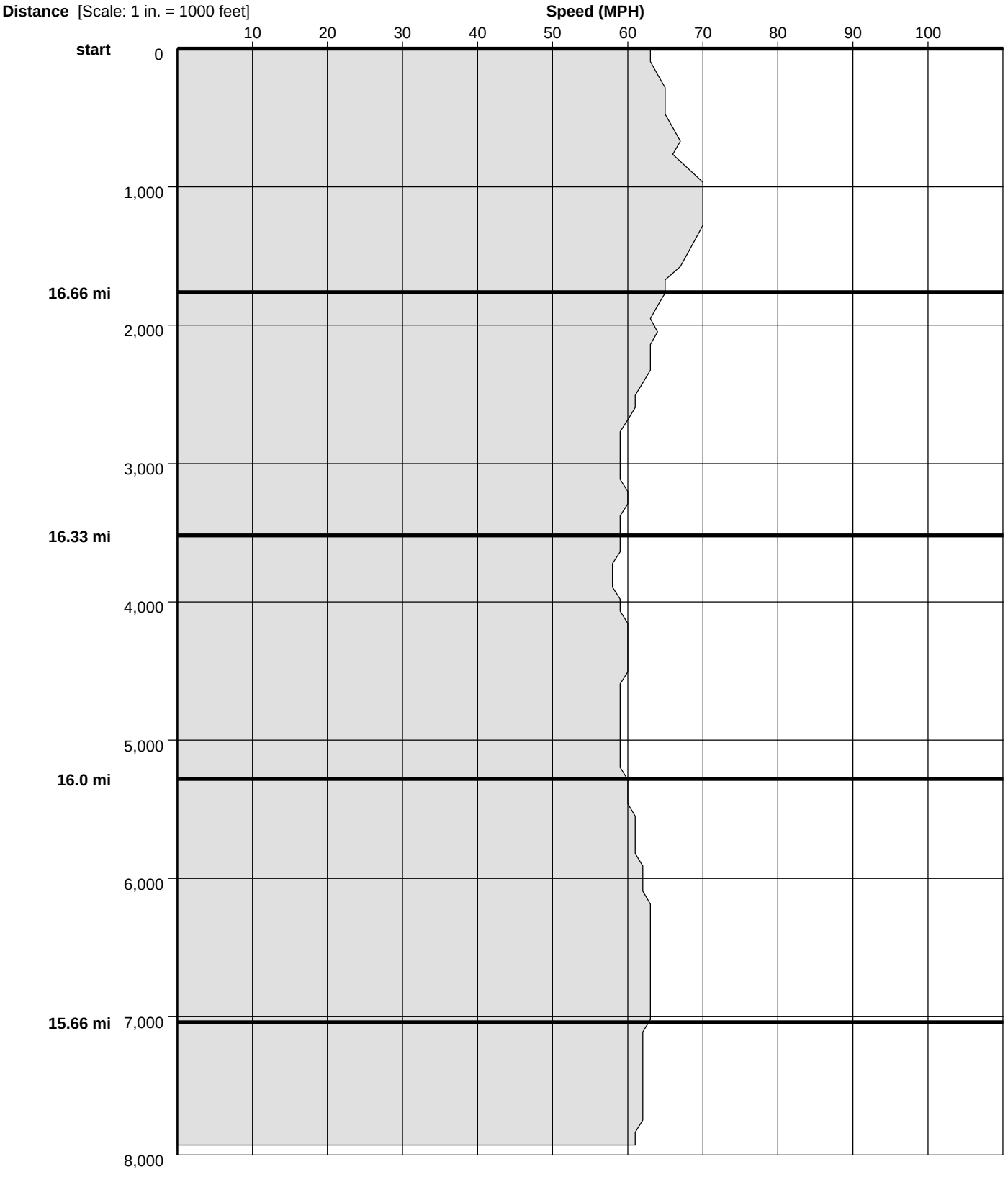
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 29**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



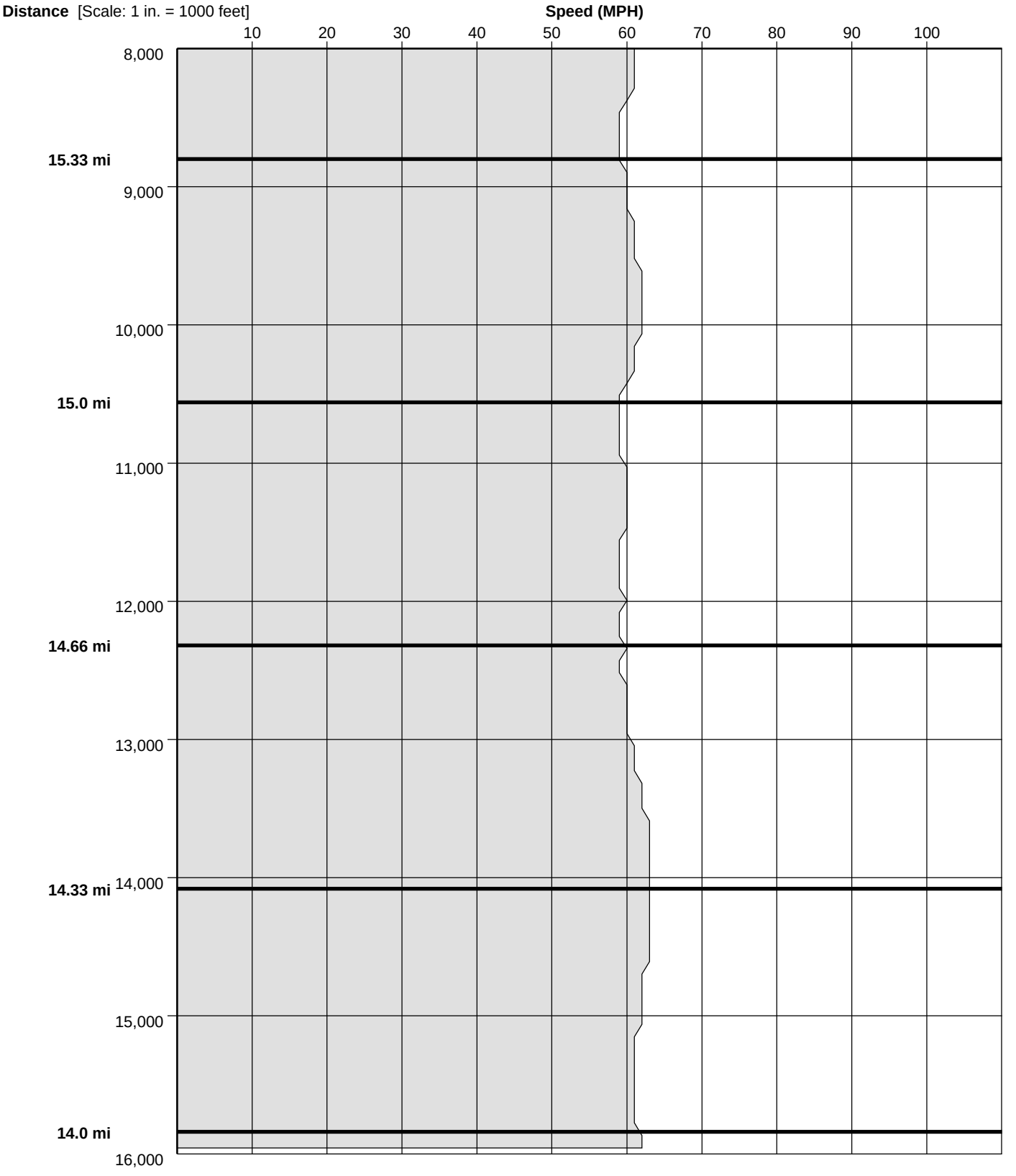
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 30**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



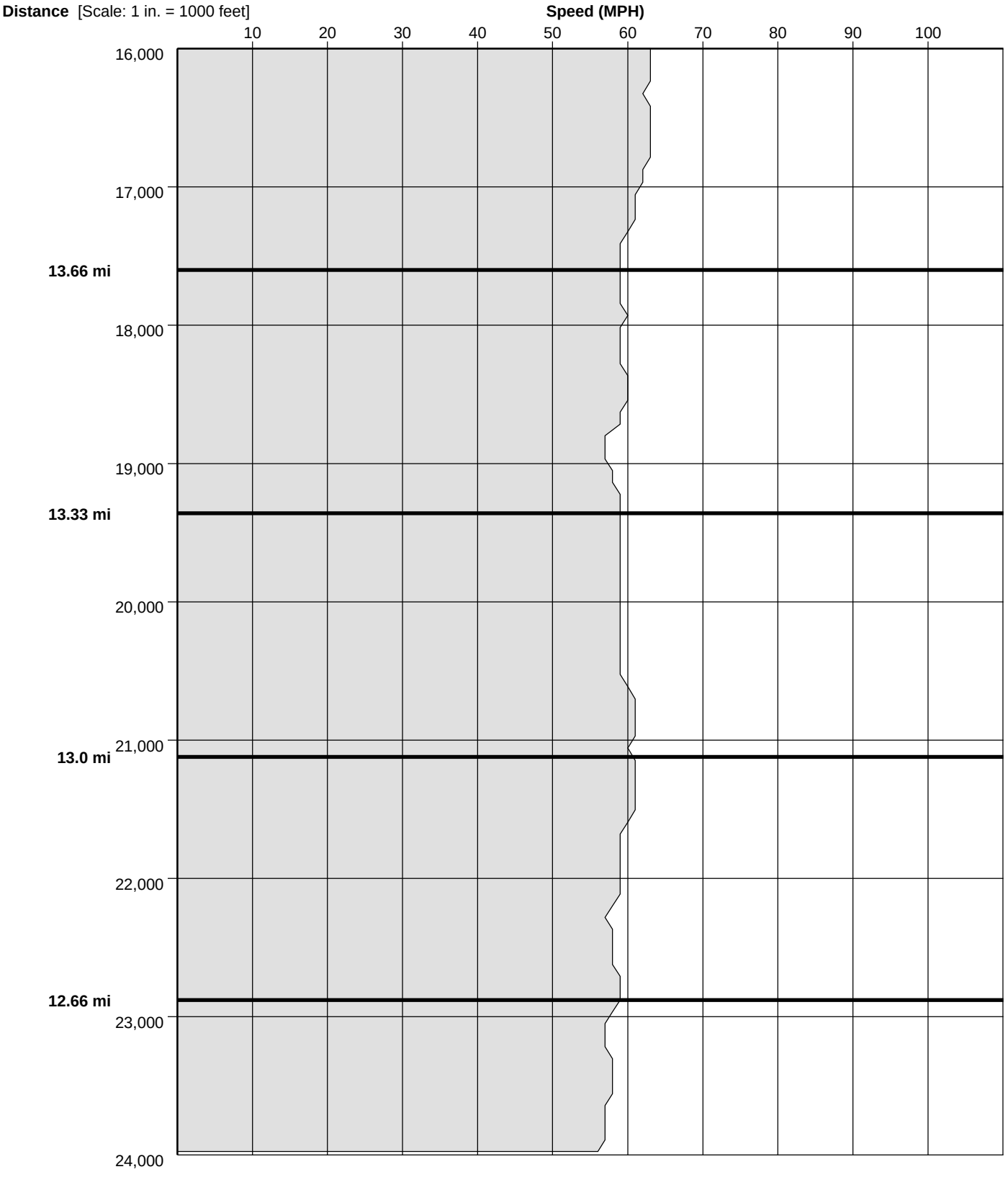
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 31**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



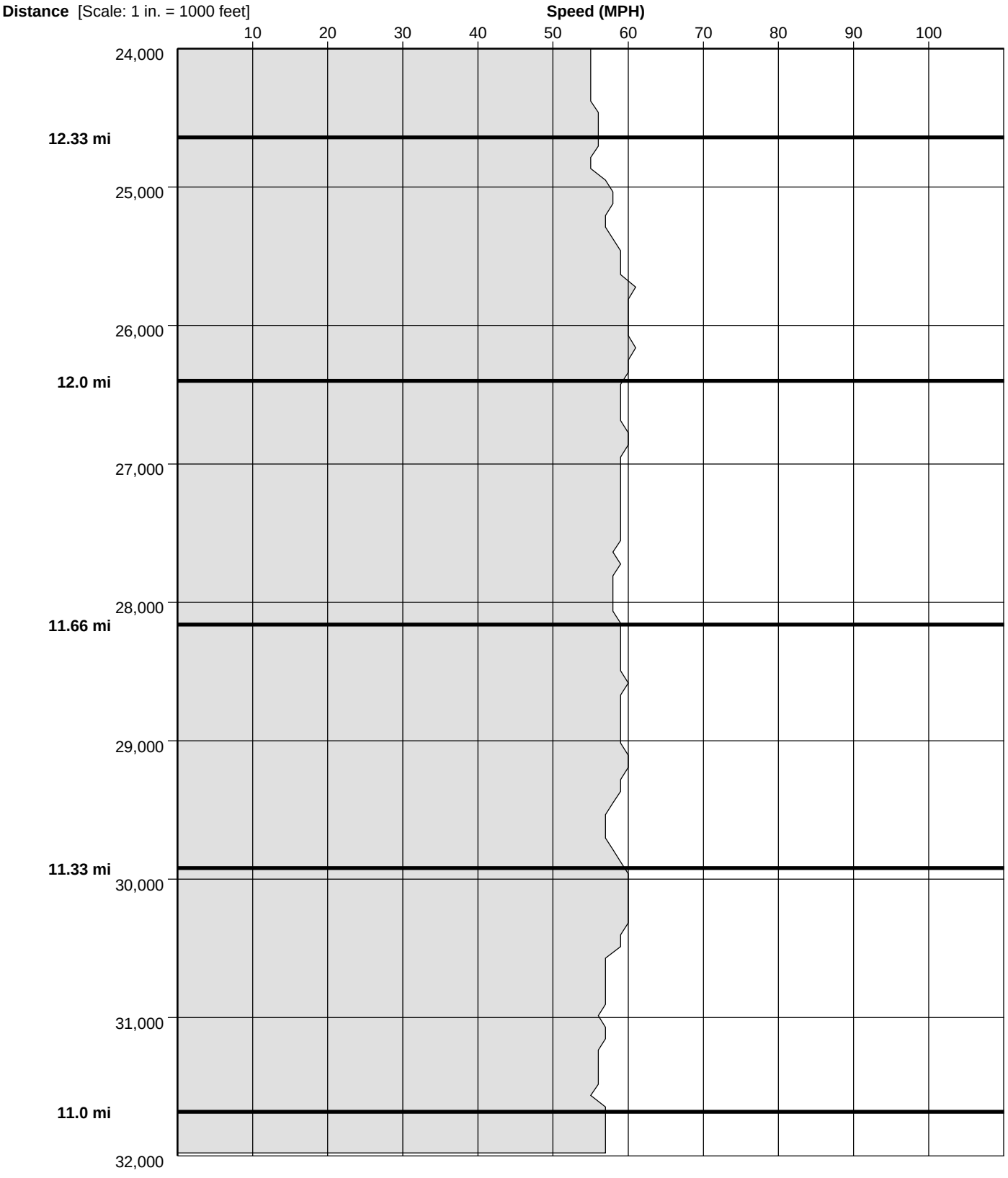
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 32**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



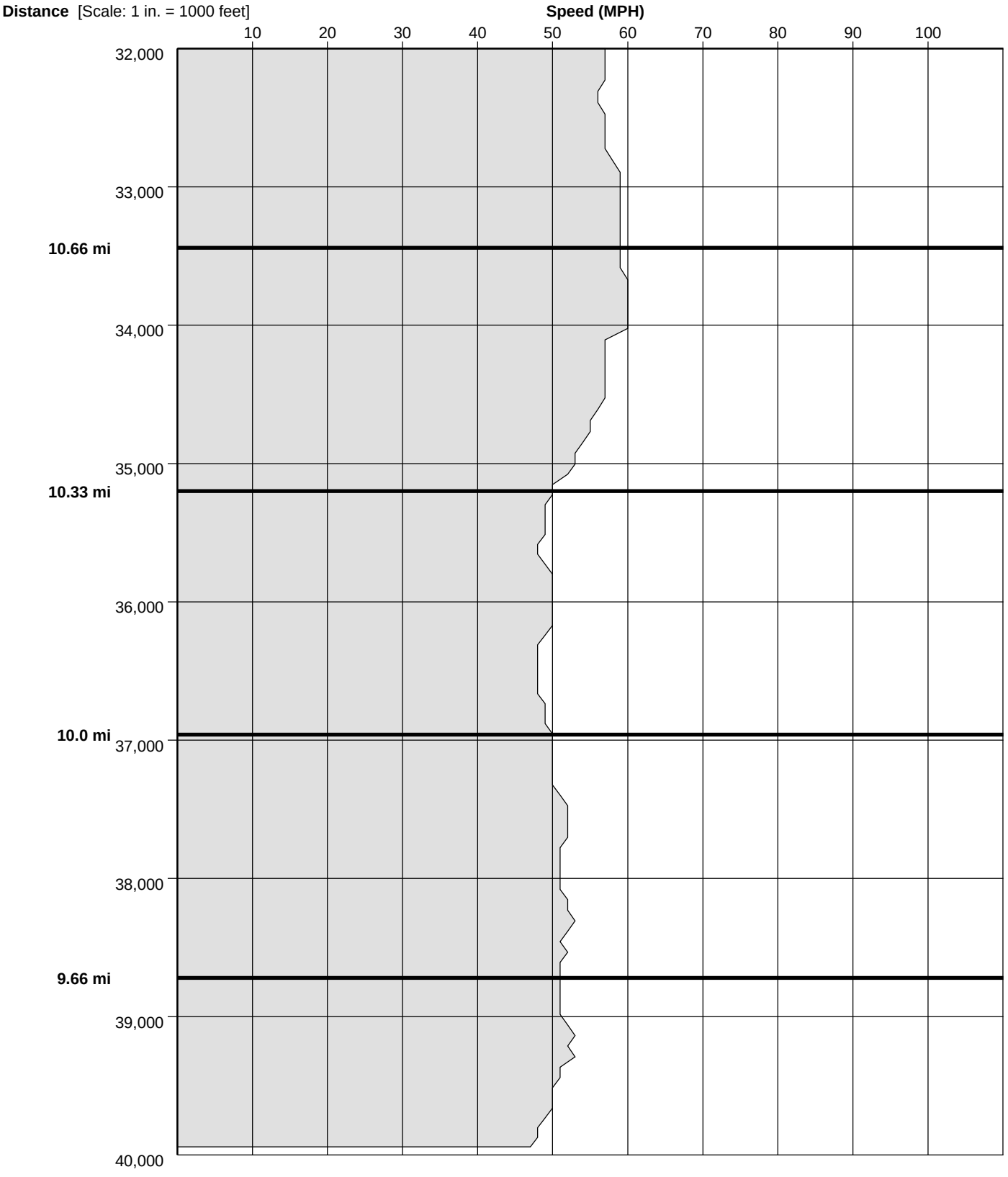
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 33**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



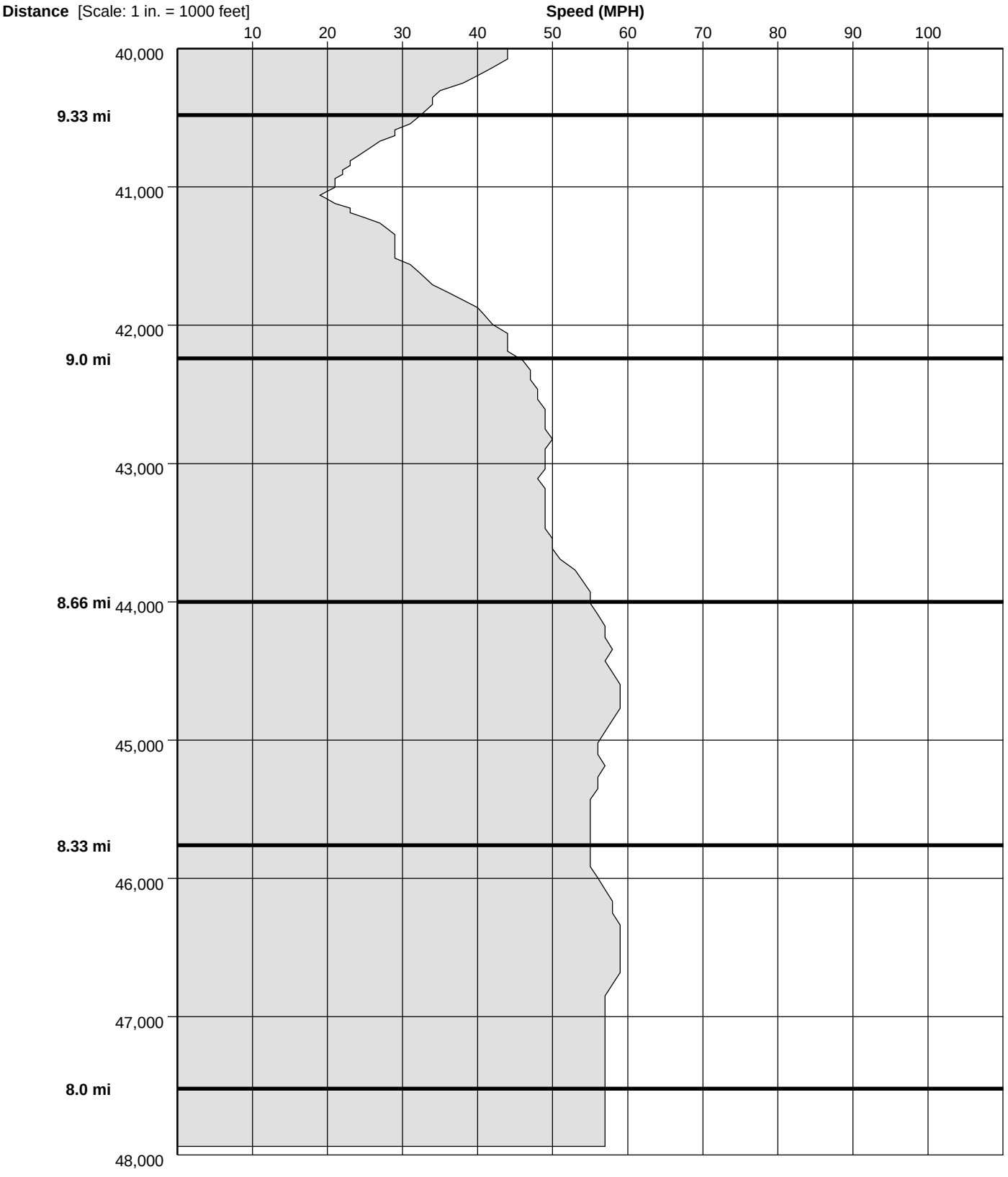
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 34**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



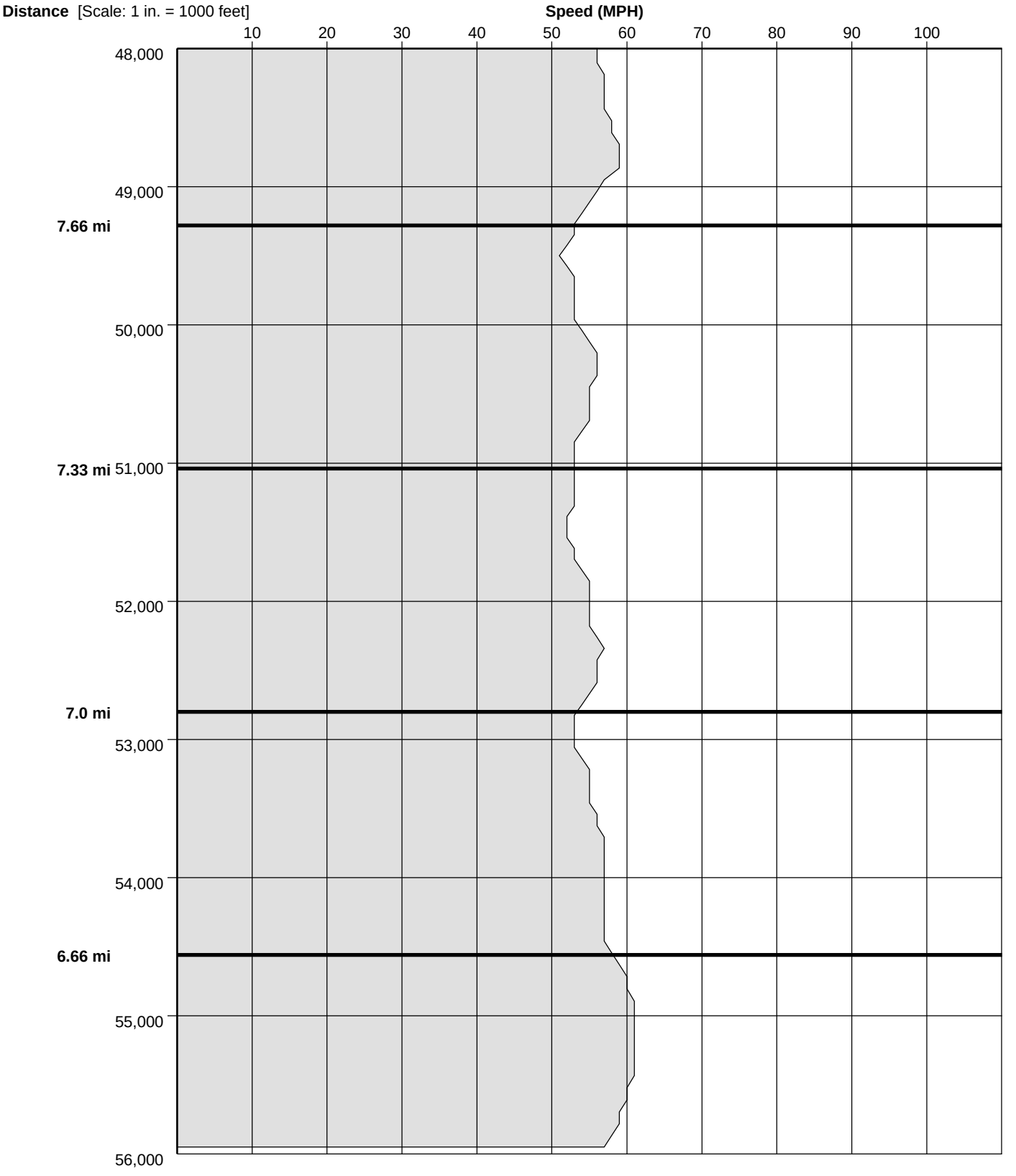
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 35**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



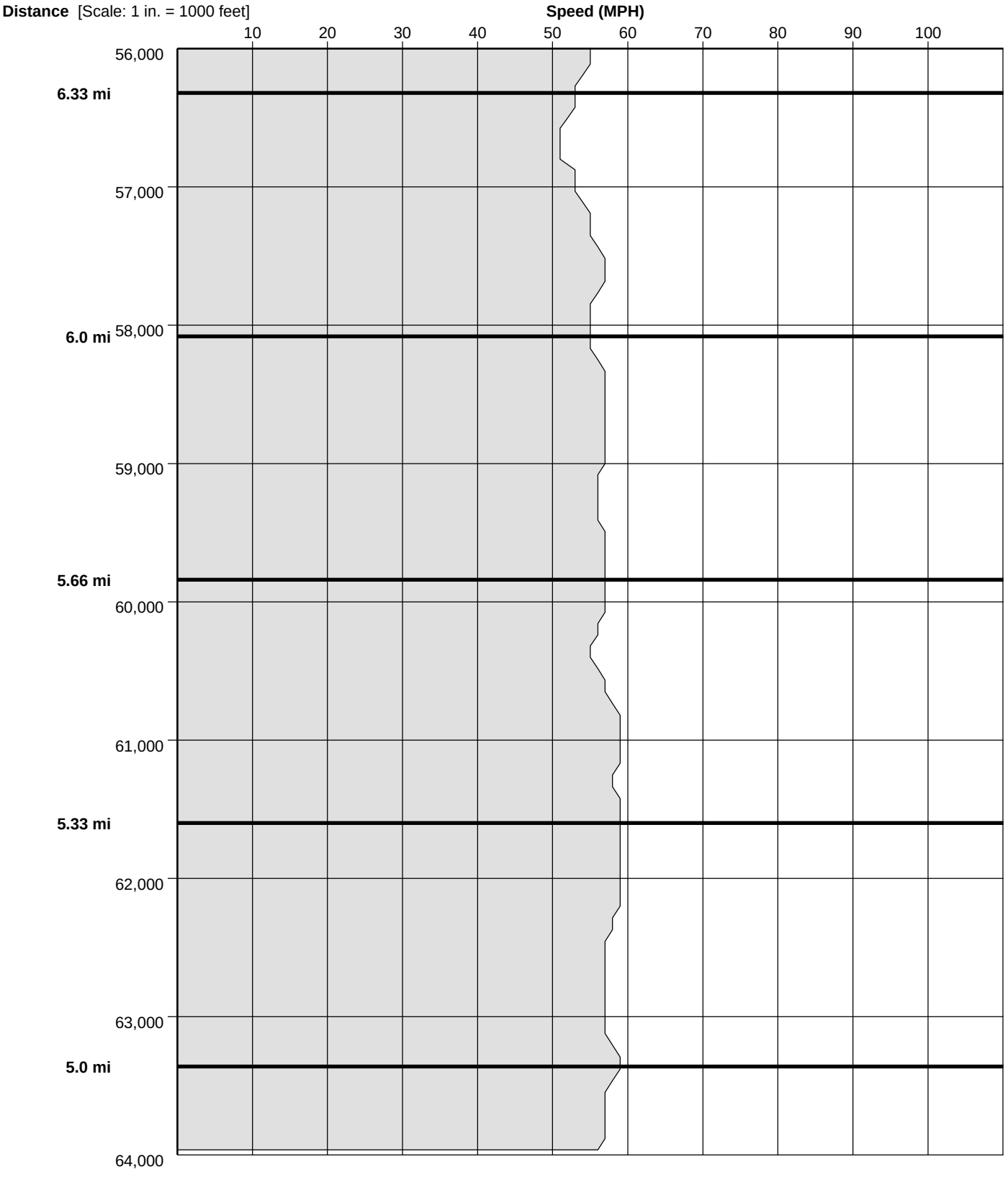
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 36**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



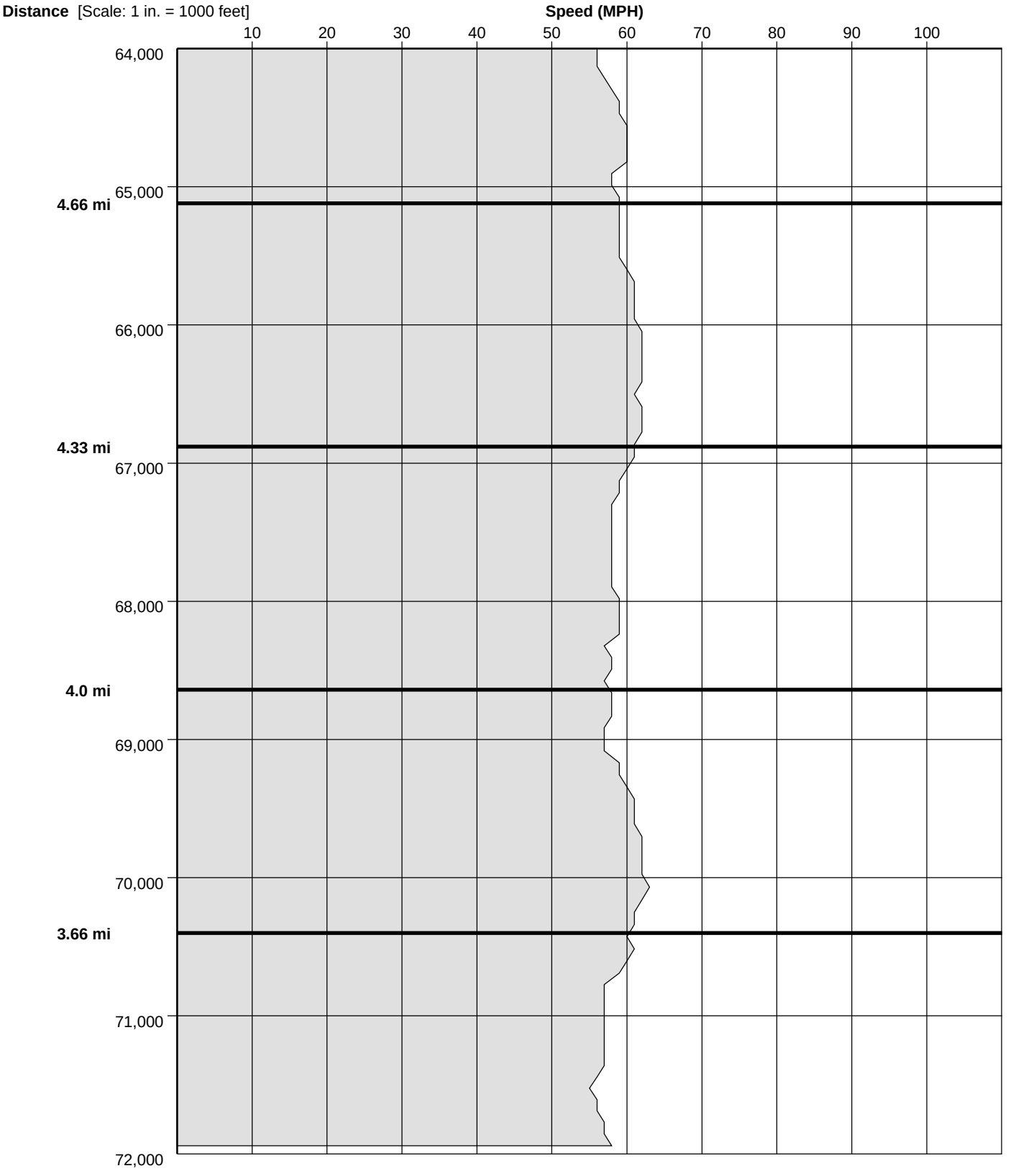
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 37**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



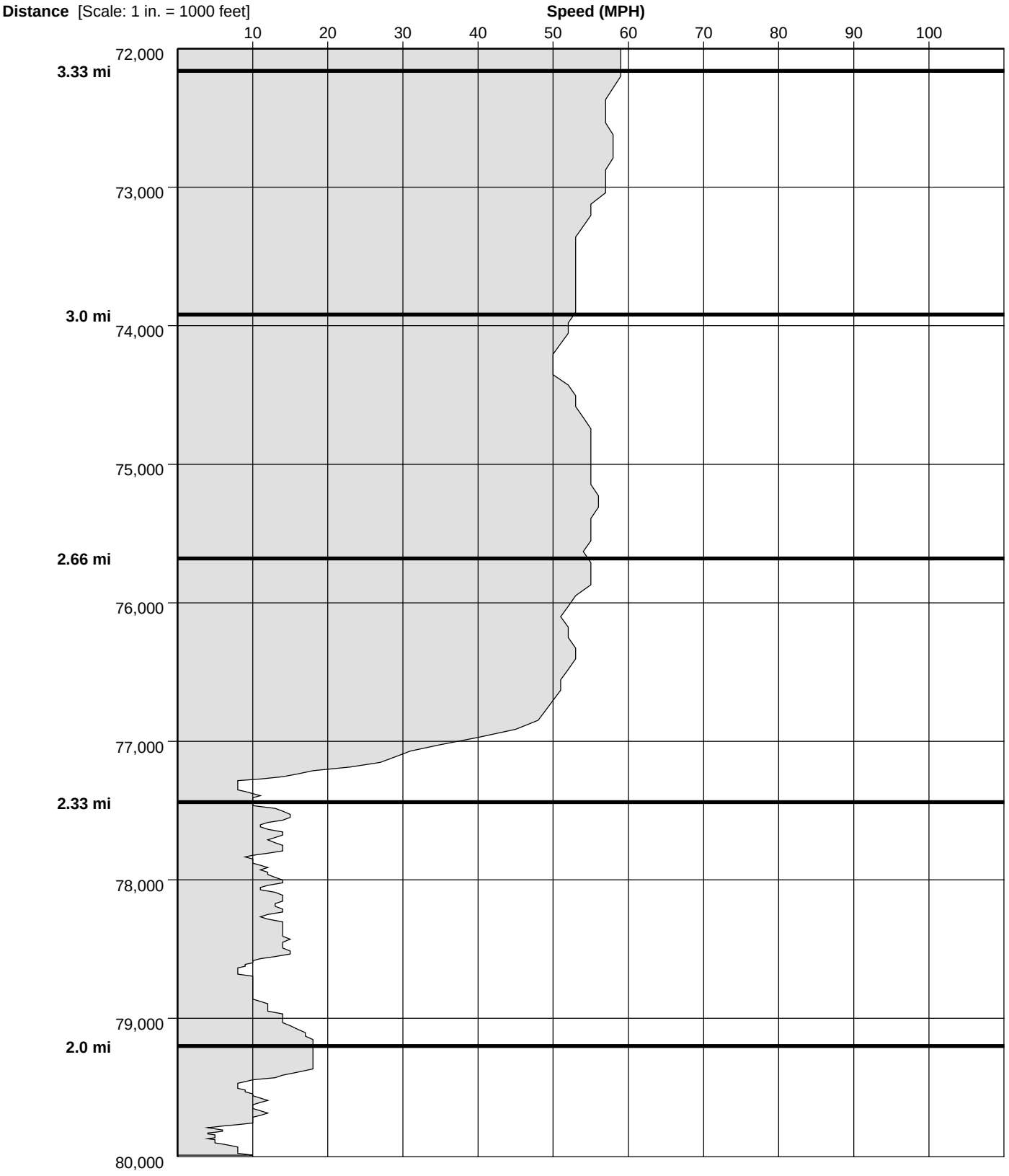
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 38**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



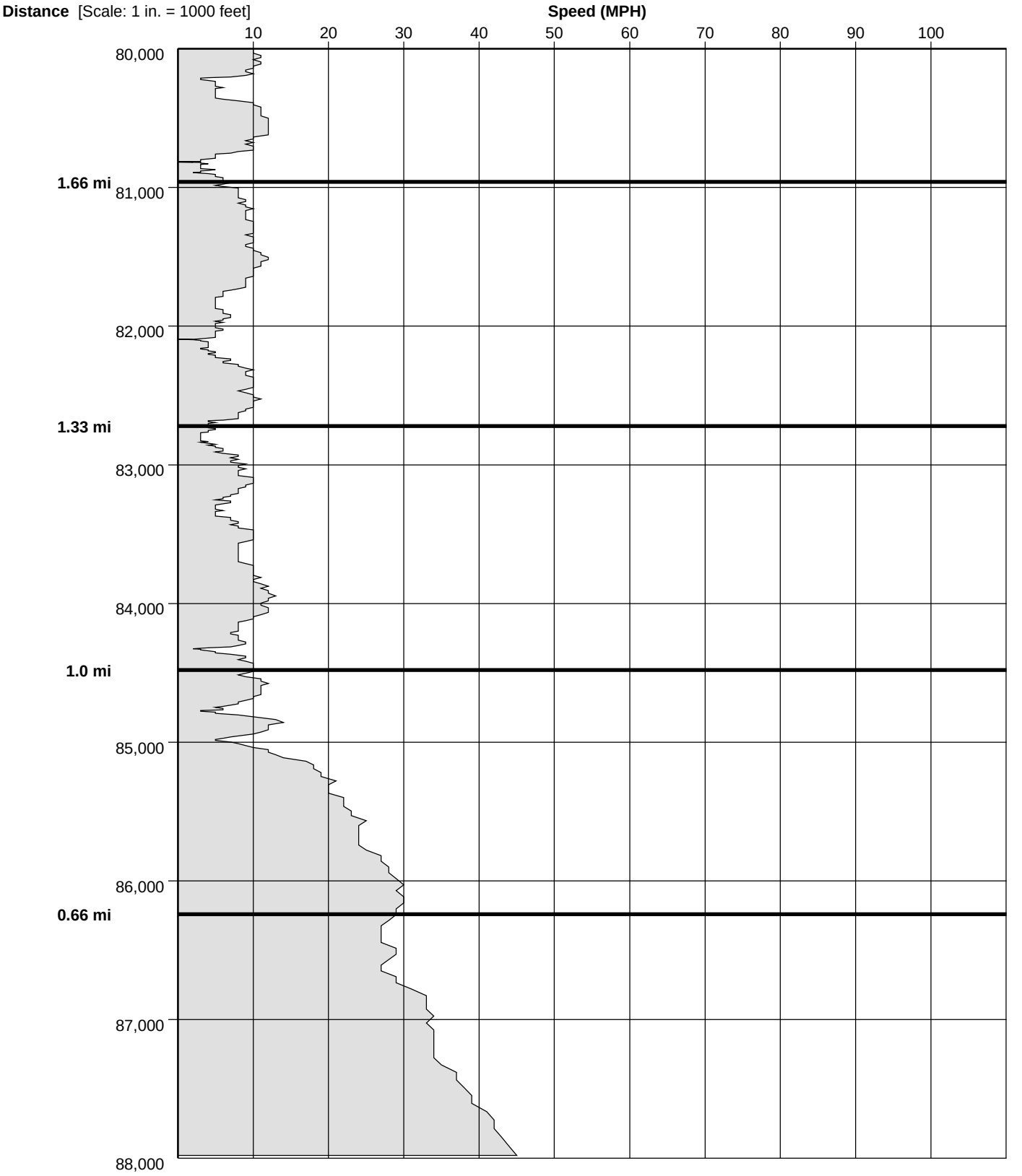
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 39**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



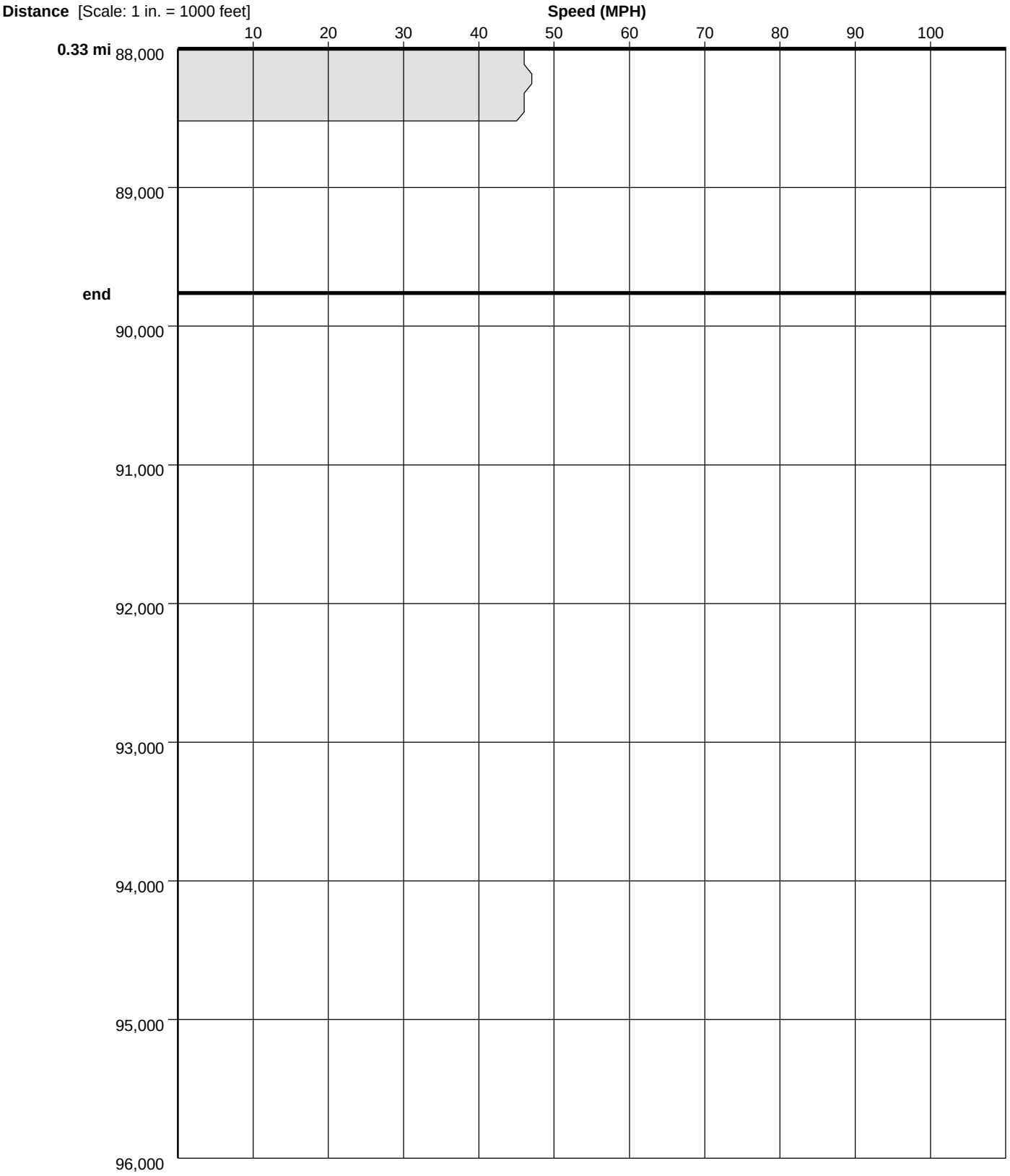
I-75 SB (Halle)

12-18-06

Study Name **: I-75 SB**
Study Date **: 12/21/2006**
Page No. **: 40**

Speed Profile

Run : I-75 SB-Halle-SB-003 Start Time: 17:16 (This is a Before Run)



Appendix C Detector Station Data

			Milemarker
SEG075058	Southbound	75	4.5
SEG075056	Southbound	75	4.9
SEG075055	Northbound	75	4.5
SEG075053	Northbound	75	4.9
SEG075050	Southbound	75	6.3
SEG075047	Northbound	75	6.3
SEG075046	Southbound	75	7.4
SEG075044	Southbound	75	7.8
SEG075043	Northbound	75	7.4
SEG075041	Northbound	75	7.8
SEG075040	Southbound	75	8.7
SEG075038	Southbound	75	9.1
SEG075037	Northbound	75	8.7
SEG075035	Northbound	75	9.1
SEG075032	Southbound	75	10.3
SEG075029	Northbound	75	10.3
SEG075026	Southbound	75	11.4
SEG075024	Southbound	75	11.9
SEG075023	Northbound	75	11.5
SEG075022	Southbound	75	12.4
SEG075021	Northbound	75	11.9
SEG075020	Southbound	75	12.9
SEG075019	Northbound	75	12.4
SEG075017B	Northbound	75	12.9
SEG075017A	Northbound	75	12.9
SEG075008	Southbound	75	15.6

SEG075005	Northbound	75	15.6

Data for segment SEGO75 008 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:10:06	30	42	181	1
	0:25:05	30	36	114	0
	0:40:06	30	36	127	1
	0:55:06	30	34	133	1
	1:10:05	30	35	95	0
	1:25:05	30	38	152	1
	1:40:06	30	33	110	1
	1:55:06	30	28	98	0
	2:10:06	30	28	84	0
	2:25:06	30	26	76	0
	2:40:06	30	36	106	1
	2:55:06	30	35	70	1
	3:10:06	30	30	85	1
	3:25:06	30	30	102	0
	3:40:05	30	33	87	0
	3:55:06	30	33	118	1
	4:10:06	30	31	104	1
	4:25:06	30	35	134	1
	4:40:05	30	40	167	1
	4:55:06	30	42	200	2
	5:10:05	30	43	241	2
	5:25:06	30	49	313	3
	5:40:05	30	56	454	3
	5:55:06	30	56	636	5
	6:10:06	30	58	759	6
	6:25:05	30	58	1073	9
	6:40:06	30	56	1197	10
	6:55:05	30	54	1415	12
	7:10:06	30	55	1423	12
	7:25:06	30	52	1447	13
	7:40:05	30	51	1380	13
	7:55:06	30	52	1217	11
	8:10:06	30	55	1104	10
	8:25:06	30	54	1011	9
	8:40:06	30	52	1013	9
	8:55:06	30	53	913	8
	9:10:06	30	51	877	8
	9:25:06	30	50	939	9
	9:40:06	30	49	912	9
	9:55:06	30	51	872	8
	10:10:06	30	50	800	8
	10:25:05	30	51	803	8
	10:40:06	30	49	827	8
	10:55:05	30	50	830	8
	11:10:05	30	51	799	8
	11:25:06	30	51	837	8
	11:40:06	30	52	822	8

11:55:06	30	50	833	9
12:10:06	30	51	812	8
12:25:05	30	49	859	8
12:40:06	30	49	668	7
12:55:06	30	53	565	5
13:10:05	30	39	892	11
13:25:06	30	47	916	10
13:40:06	30	51	833	8
13:55:05	30	53	825	8
14:10:06	30	48	909	9
14:25:05	30	51	1015	10
14:40:06	30	52	1012	10
14:55:06	30	50	1011	10
15:10:05	30	49	906	9
15:25:06	30	51	992	9
15:40:06	30	52	984	9
15:55:06	30	52	1023	9
16:10:06	30	54	909	8
16:25:05	30	53	1001	9
16:40:06	30	53	940	8
16:55:06	30	53	1016	9
17:10:06	30	55	974	8
17:25:06	30	56	987	8
17:40:06	30	54	899	8
17:55:06	30	53	970	8
18:10:05	30	52	917	8
18:25:06	30	51	933	9
18:40:05	30	52	830	8
18:55:06	30	53	694	6
19:10:06	30	50	667	7
19:25:06	30	51	645	6
19:40:06	30	50	548	5
19:55:06	30	52	578	5
20:10:05	30	53	507	4
20:25:06	30	48	531	5
20:40:06	30	50	492	4
20:55:06	30	44	413	5
21:10:06	30	49	400	4
21:25:05	30	52	454	4
21:40:06	30	50	440	4
21:55:06	30	47	345	3
22:10:05	30	52	368	3
22:25:06	30	51	416	4
22:40:06	30	48	318	3
22:55:05	30	50	341	3
23:10:06	30	48	283	2
23:25:05	30	48	331	3
23:40:06	30	49	305	3
23:55:06	30	52	348	3

Zones Of fline:

Data for segment SEGO75 020 for 12/18/2006
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:00:05	30	45	200	1
	0:15:05	30	39	170	1
	0:30:04	30	33	108	0
	0:45:05	30	35	144	1
	1:00:05	30	38	124	0
	1:15:05	30	32	94	0
	1:30:04	30	42	166	1
	1:45:05	30	30	115	1
	2:00:05	30	29	100	1
	2:15:04	30	24	70	0
	2:30:05	30	29	88	1
	2:45:05	30	29	97	1
	3:00:04	30	28	69	1
	3:15:05	30	30	75	1
	3:30:04	30	30	73	0
	3:45:04	30	31	100	0
	4:00:05	30	35	104	0
	4:15:05	30	28	103	1
	4:30:05	30	35	123	1
	4:45:05	30	36	166	1
	5:00:05	30	31	179	2
	5:15:05	30	38	213	2
	5:30:04	30	44	292	2
	5:45:05	30	50	385	3
	6:00:05	30	52	502	4
	6:15:04	30	51	612	5
	6:30:05	30	54	847	7
	6:45:05	30	52	1041	9
	7:00:04	30	52	1115	10
	7:15:05	30	53	1182	10
	7:30:05	30	51	1174	11
	7:45:05	30	31	1017	19
	8:00:05	30	22	862	25
	8:15:05	30	44	824	9
	8:30:04	30	49	809	8
	8:45:04	30	48	775	7
	9:00:05	30	49	722	7
	9:15:04	30	47	774	7
	9:30:05	30	46	867	9
	9:45:05	30	46	893	9
	10:00:04	30	47	795	8
	10:15:05	30	47	753	8
	10:30:04	30	46	761	8
	10:45:05	30	45	810	9
	11:00:05	30	47	789	8
	11:15:04	30	47	747	7
	11:30:05	30	45	835	9
	11:45:05	30	49	783	8

12:00:04	30	45	784	8
12:15:05	30	46	776	8
12:30:05	30	46	846	9
12:45:04	30	51	659	6
13:00:05	30	49	643	6
13:15:05	30	42	849	10
13:30:05	30	48	919	9
13:45:04	30	49	851	8
14:00:05	30	48	843	8
14:15:05	30	46	909	10
14:30:04	30	49	959	9
14:45:05	30	47	1031	10
15:00:05	30	45	1005	11
15:15:04	30	47	943	10
15:30:04	30	48	1044	10
15:45:05	30	49	1037	10
16:00:04	30	47	1075	11
16:15:04	30	51	941	9
16:30:05	30	50	1023	10
16:45:05	30	50	1048	10
17:00:04	30	50	1010	9
17:15:05	30	52	1048	9
17:30:05	30	52	1048	9
17:45:04	30	49	965	9
18:00:05	30	52	935	9
18:15:05	30	49	881	8
18:30:04	30	47	932	9
18:45:05	30	50	825	8
19:00:05	30	50	680	6
19:15:04	30	46	711	7
19:30:05	30	47	675	7
19:45:05	30	51	569	5
20:00:04	30	48	619	6
20:15:05	30	50	588	5
20:30:05	30	48	576	6
20:45:04	30	48	474	5
21:00:05	30	45	475	5
21:15:05	30	47	432	4
21:30:04	30	48	465	4
21:45:05	30	46	455	5
22:00:05	30	47	355	3
22:15:05	30	52	412	3
22:30:04	30	50	431	4
22:45:05	30	46	358	3
23:00:04	30	47	362	4
23:15:05	30	48	343	3
23:30:05	30	43	303	3
23:45:05	30	49	341	3

Zones Of fline:

Data for segment SEGO75 022 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:06:32	30	33	106	1
	0:21:31	30	34	98	1
	0:36:32	30	31	78	1
	0:51:31	30	29	70	1
	1:06:31	30	29	73	1
	1:21:32	30	39	59	0
	1:36:31	30	33	96	1
	1:51:32	30	27	60	1
	2:06:31	30	27	58	1
	2:21:32	30	28	43	2
	2:36:31	30	27	65	1
	2:51:32	30	43	63	2
	3:06:31	30	30	46	1
	3:21:32	30	31	45	1
	3:36:32	30	26	49	1
	3:51:32	30	30	70	1
	4:06:32	30	26	68	1
	4:21:31	30	22	58	1
	4:36:32	30	31	80	1
	4:51:31	30	32	89	1
	5:06:32	30	37	108	1
	5:21:31	30	45	151	2
	5:36:32	30	48	195	2
	5:51:32	30	56	279	3
	6:06:32	30	52	317	4
	6:21:32	30	53	493	6
	6:36:32	30	56	657	8
	6:51:31	30	51	856	12
	7:06:32	30	53	838	11
	7:21:31	30	49	918	14
	7:36:32	30	30	843	24
	7:51:31	30	19	752	33
	8:06:32	30	15	696	37
	8:21:31	30	37	653	16
	8:36:32	30	47	654	10
	8:51:32	30	48	564	8
	9:06:31	30	48	558	8
	9:21:32	30	47	622	9
	9:36:31	30	45	641	10
	9:51:32	30	48	599	9
	10:06:32	30	47	532	8
	10:21:31	30	48	525	8
	10:36:32	30	46	572	9
	10:51:31	30	48	641	10
	11:06:32	30	49	577	8
	11:21:31	30	48	577	9
	11:36:32	30	46	620	10
	11:51:31	30	51	567	8

12:06:32	30	48	629	10
12:21:32	30	48	688	11
12:36:32	30	47	572	9
12:51:32	30	52	476	7
13:06:31	30	47	565	9
13:21:32	30	47	683	11
13:36:32	30	50	686	10
13:51:32	30	48	640	10
14:06:31	30	48	595	9
14:21:32	30	49	798	12
14:36:31	30	49	772	12
14:51:32	30	48	859	13
15:06:31	30	48	819	13
15:21:32	30	48	825	13
15:36:31	30	50	908	14
15:51:32	30	51	919	13
16:06:31	30	49	817	12
16:21:32	30	51	865	12
16:36:31	30	51	857	12
16:51:32	30	49	920	14
17:06:31	30	52	835	12
17:21:32	30	51	915	13
17:36:31	30	49	869	13
17:51:32	30	51	810	11
18:06:31	30	53	662	9
18:21:32	30	50	777	11
18:36:31	30	50	707	10
18:51:32	30	52	548	7
19:06:31	30	52	529	7
19:21:32	30	51	506	7
19:36:32	30	48	441	6
19:51:32	30	51	429	6
20:06:32	30	50	420	6
20:21:32	30	53	438	6
20:36:32	30	49	362	5
20:51:32	30	46	320	5
21:06:32	30	47	300	5
21:21:31	30	47	286	4
21:36:32	30	51	294	4
21:51:32	30	46	296	4
22:06:32	30	49	237	3
22:21:32	30	54	272	3
22:36:32	30	44	254	4
22:51:31	30	47	241	3
23:06:32	30	46	198	3
23:21:31	30	47	223	3
23:36:32	30	44	208	3
23:51:32	30	49	235	3

Zones Of fline: 2

Data for segment SEGO7 5 024 for ########
Number o f Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:02:35	30	0	0	0
	0:17:35	30	0	0	0
	0:32:36	30	0	0	0
	0:47:35	30	0	0	0
	1:02:35	30	0	0	0
	1:17:35	30	0	0	0
	1:32:36	30	0	0	0
	1:47:35	30	0	0	0
	2:02:35	30	0	0	0
	2:17:36	30	0	0	0
	2:32:35	30	0	0	0
	2:47:35	30	0	0	0
	3:02:36	30	0	0	0
	3:17:35	30	0	0	0
	3:32:36	30	0	0	0
	3:47:36	30	0	0	0
	4:02:35	30	0	0	0
	4:17:35	30	0	0	0
	4:32:35	30	0	0	0
	4:47:36	30	0	0	0
	5:02:35	30	0	0	0
	5:17:35	30	0	0	0
	5:32:36	30	0	0	0
	5:47:35	30	0	0	0
	6:02:36	30	0	0	0
	6:17:36	30	0	0	0
	6:32:35	30	0	0	0
	6:47:35	30	0	0	0
	7:02:36	30	0	0	0
	7:17:35	30	0	0	0
	7:32:35	30	0	0	0
	7:47:36	30	0	0	0
	8:02:35	30	0	0	0
	8:17:35	30	0	0	0
	8:32:36	30	0	0	0
	8:47:36	30	0	0	0
	9:02:35	30	0	0	0
	9:17:36	30	0	0	0
	9:32:35	30	0	0	0
	9:47:35	30	0	0	0
	10:02:35	30	0	0	0
	10:17:35	30	0	0	0
	10:32:36	30	0	0	0
	10:47:35	30	0	0	0
	11:02:35	30	0	0	0
	11:17:36	30	0	0	0
	11:32:35	30	0	0	0
	11:47:35	30	0	0	0

12:02:36	30	0	0	0
12:17:35	30	0	0	0
12:32:35	30	0	0	0
12:47:36	30	0	0	0
13:02:35	30	0	0	0
13:17:35	30	0	0	0
13:32:36	30	0	0	0
13:47:36	30	0	0	0
14:02:35	30	0	0	0
14:17:35	30	0	0	0
14:32:36	30	0	0	0
14:47:35	30	0	0	0
15:02:35	30	0	0	0
15:17:36	30	43	259	15
15:32:35	30	46	1268	13
15:47:35	30	49	178	14
16:02:36	30	0	0	0
16:17:36	30	0	0	0
16:32:35	30	0	0	0
16:47:35	30	0	0	0
17:02:36	30	0	0	0
17:17:35	30	0	0	0
17:32:35	30	0	0	0
17:47:36	30	0	0	0
18:02:35	30	0	0	0
18:17:35	30	0	0	0
18:32:36	30	0	0	0
18:47:35	30	0	0	0
19:02:35	30	0	0	0
19:17:36	30	0	0	0
19:32:35	30	0	0	0
19:47:35	30	0	0	0
20:02:36	30	0	0	0
20:17:35	30	0	0	0
20:32:35	30	0	0	0
20:47:36	30	0	0	0
21:02:35	30	0	0	0
21:17:35	30	0	0	0
21:32:36	30	0	0	0
21:47:35	30	0	0	0
22:02:35	30	0	0	0
22:17:36	30	0	0	0
22:32:36	30	0	0	0
22:47:35	30	0	0	0
23:02:36	30	0	0	0
23:17:35	30	0	0	0
23:32:35	30	0	0	0
23:47:35	30	0	0	0

Zones Of fline:

Data for segment SEGO75 026 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:13:02	30	43	208	1
	0:28:02	30	37	132	1
	0:43:03	30	35	145	1
	0:58:02	30	36	137	1
	1:13:02	30	35	121	0
	1:28:03	30	38	157	1
	1:43:02	30	31	133	1
	1:58:02	30	34	113	1
	2:13:02	30	27	84	1
	2:28:03	30	27	76	0
	2:43:02	30	31	125	1
	2:58:03	30	35	87	1
	3:13:02	30	27	79	0
	3:28:03	30	26	91	1
	3:43:02	30	31	88	0
	3:58:02	30	31	130	1
	4:13:02	30	30	114	1
	4:28:02	30	34	132	1
	4:43:03	30	38	178	1
	4:58:02	30	38	194	2
	5:13:03	30	38	216	2
	5:28:02	30	48	306	3
	5:43:03	30	55	412	3
	5:58:02	30	54	520	4
	6:13:02	30	57	615	5
	6:28:02	30	56	886	7
	6:43:02	30	55	1086	9
	6:58:02	30	53	1223	11
	7:13:03	30	52	1232	11
	7:28:02	30	31	1210	22
	7:43:03	30	22	1111	27
	7:58:02	30	15	1012	33
	8:13:03	30	18	1071	31
	8:28:02	30	28	1039	21
	8:43:02	30	46	933	10
	8:58:03	30	51	868	8
	9:13:02	30	50	885	8
	9:28:03	30	48	969	10
	9:43:03	30	47	1003	11
	9:58:02	30	49	974	10
	10:13:03	30	50	875	8
	10:28:02	30	49	898	9
	10:43:03	30	48	978	10
	10:58:02	30	47	941	10
	11:13:02	30	49	931	9
	11:28:02	30	48	959	10
	11:43:03	30	50	959	10
	11:58:02	30	49	947	10

12:13:02	30	47	965	10
12:28:02	30	47	1016	11
12:43:03	30	52	865	8
12:58:02	30	55	746	6
13:13:02	30	47	1026	11
13:28:02	30	49	1075	11
13:43:02	30	50	1040	10
13:58:03	30	50	1039	10
14:13:02	30	48	1035	11
14:28:03	30	50	1197	12
14:43:02	30	47	1233	13
14:58:03	30	49	1273	13
15:13:02	30	49	1252	13
15:28:03	30	50	1240	12
15:43:02	30	51	1392	13
15:58:03	30	51	1344	13
16:13:02	30	53	1254	11
16:28:03	30	52	1317	12
16:43:02	30	53	1247	11
16:58:03	30	54	1308	12
17:13:02	30	55	1297	11
17:28:03	30	55	1364	12
17:43:02	30	53	1249	11
17:58:03	30	55	1151	10
18:13:02	30	52	1059	10
18:28:02	30	51	1115	10
18:43:02	30	53	1016	10
18:58:03	30	54	833	7
19:13:02	30	51	843	8
19:28:02	30	52	790	8
19:43:03	30	52	703	7
19:58:02	30	50	696	7
20:13:02	30	53	678	6
20:28:02	30	52	687	6
20:43:03	30	51	620	6
20:58:02	30	48	502	5
21:13:03	30	50	494	5
21:28:02	30	50	531	5
21:43:03	30	49	519	5
21:58:02	30	46	417	4
22:13:03	30	53	457	4
22:28:02	30	54	474	4
22:43:03	30	50	421	4
22:58:02	30	50	409	4
23:13:03	30	48	351	3
23:28:02	30	50	400	4
23:43:03	30	49	382	3
23:58:02	30	50	419	4

Zones Of fline:

Data for segment SEGO75 032 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:00:58	30	52	232	1
	0:15:58	30	46	199	1
	0:30:58	30	43	134	1
	0:45:58	30	44	150	1
	1:00:59	30	40	138	0
	1:15:58	30	39	112	0
	1:30:58	30	44	175	1
	1:45:58	30	41	140	1
	2:00:58	30	33	106	1
	2:15:59	30	33	86	0
	2:30:58	30	34	102	1
	2:45:58	30	37	109	1
	3:00:58	30	42	92	1
	3:15:58	30	38	87	1
	3:30:58	30	29	93	1
	3:45:58	30	40	114	0
	4:00:58	30	34	124	1
	4:15:58	30	32	133	1
	4:30:58	30	37	150	1
	4:45:58	30	45	200	1
	5:00:58	30	41	215	2
	5:15:59	30	42	243	2
	5:30:58	30	52	370	3
	5:45:58	30	62	465	3
	6:00:58	30	59	586	4
	6:15:58	30	61	741	5
	6:30:59	30	60	1018	8
	6:45:58	30	51	1195	12
	7:00:58	30	27	1306	26
	7:15:58	30	28	1330	25
	7:30:58	30	24	1257	28
	7:45:58	30	22	1245	29
	8:00:58	30	22	1189	29
	8:15:58	30	24	1218	27
	8:30:59	30	24	1161	26
	8:45:58	30	24	1079	24
	9:00:58	30	36	1013	18
	9:15:58	30	54	993	9
	9:30:59	30	52	1084	10
	9:45:59	30	51	1035	10
	10:00:58	30	53	1034	10
	10:15:58	30	55	947	8
	10:30:58	30	54	969	9
	10:45:58	30	52	1075	10
	11:00:59	30	53	979	9
	11:15:59	30	55	972	9
	11:30:58	30	53	1045	10
	11:45:58	30	56	1028	9

12:00:58	30	54	975	9
12:15:58	30	54	983	9
12:30:58	30	53	1081	10
12:45:59	30	57	978	9
13:00:59	30	60	838	7
13:15:58	30	49	1119	11
13:30:58	30	55	1184	11
13:45:58	30	55	1108	10
14:00:58	30	53	1081	10
14:15:58	30	52	1140	11
14:30:58	30	54	1222	11
14:45:58	30	53	1301	12
15:00:58	30	53	1294	12
15:15:58	30	54	1312	12
15:30:58	30	54	1310	12
15:45:58	30	50	1412	14
16:01:28	30	32	1246	22
16:16:29	30	38	1340	19
16:31:28	30	57	1302	11
16:46:28	30	58	1341	11
17:01:28	30	58	1297	11
17:16:29	30	59	1404	12
17:31:28	30	54	1343	12
17:46:28	30	46	1274	15
18:01:28	30	58	1133	10
18:16:28	30	56	1139	10
18:31:28	30	56	1103	10
18:46:28	30	56	1078	9
19:01:28	30	57	820	7
19:16:29	30	55	843	7
19:31:28	30	54	801	7
19:46:28	30	59	720	6
20:01:28	30	53	714	6
20:16:28	30	57	698	6
20:31:29	30	56	686	6
20:46:28	30	56	577	5
21:01:28	30	52	530	5
21:16:28	30	54	490	4
21:31:28	30	55	538	4
21:46:28	30	53	520	5
22:01:28	30	52	398	3
22:16:28	30	58	467	4
22:31:29	30	57	491	4
22:46:28	30	56	434	4
23:01:28	30	51	413	3
23:16:28	30	54	395	3
23:31:58	30	50	351	3
23:46:58	30	55	405	3

Zones Of fline:

Data for segment SEGO75 038 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:00:42	30	50	257	1
	0:15:41	30	45	230	2
	0:30:41	30	40	171	1
	0:45:41	30	41	165	1
	1:00:41	30	37	144	1
	1:15:41	30	34	135	1
	1:30:42	30	43	170	1
	1:45:42	30	38	143	1
	2:00:41	30	33	124	1
	2:15:41	30	27	99	0
	2:30:41	30	33	93	1
	2:45:42	30	32	121	1
	3:00:41	30	30	91	0
	3:15:41	30	31	105	1
	3:30:41	30	33	111	1
	3:45:41	30	34	116	0
	4:00:41	30	35	125	1
	4:15:41	30	40	141	2
	4:30:41	30	41	173	1
	4:45:42	30	41	221	2
	5:00:41	30	38	247	2
	5:15:41	30	43	272	2
	5:30:41	30	49	374	3
	5:45:41	30	57	534	4
	6:00:41	30	56	618	5
	6:15:41	30	58	793	6
	6:30:41	30	56	1066	9
	6:45:42	30	54	1364	12
	7:00:41	30	54	1465	13
	7:15:41	30	54	1614	15
	7:30:41	30	53	1571	14
	7:45:42	30	43	1604	19
	8:00:41	30	40	1551	20
	8:15:41	30	47	1531	16
	8:30:42	30	43	1467	18
	8:45:41	30	42	1362	16
	9:00:41	30	42	1245	16
	9:15:41	30	50	1147	11
	9:30:41	30	50	1191	12
	9:45:41	30	48	1192	12
	10:00:41	30	51	1147	11
	10:15:41	30	51	1090	10
	10:30:42	30	49	1042	11
	10:45:41	30	47	1195	12
	11:00:41	30	48	1126	12
	11:15:41	30	49	1106	11
	11:30:41	30	51	1142	11
	11:45:41	30	51	1143	11

12:00:41	30	49	1068	11
12:15:42	30	48	1149	12
12:30:41	30	48	1190	12
12:45:41	30	50	1123	11
13:00:42	30	55	965	9
13:15:41	30	45	1182	13
13:30:41	30	48	1257	13
13:45:42	30	50	1241	12
14:00:41	30	52	1186	11
14:15:41	30	49	1228	12
14:30:41	30	51	1356	13
14:45:41	30	49	1398	14
15:00:41	30	51	1366	13
15:15:41	30	50	1463	14
15:30:41	30	51	1402	14
15:45:41	30	50	1582	15
16:00:41	30	50	1433	14
16:15:41	30	45	1499	16
16:30:41	30	53	1481	14
16:45:41	30	54	1441	13
17:00:41	30	52	1435	14
17:15:42	30	53	1556	14
17:30:41	30	42	1477	18
17:45:41	30	39	1374	19
18:00:42	30	50	1330	14
18:15:41	30	51	1244	12
18:30:42	30	48	1272	14
18:45:41	30	52	1152	11
19:00:41	30	55	997	9
19:15:47	30	51	903	9
19:30:41	30	52	896	8
19:45:41	30	54	836	7
20:00:42	30	54	795	7
20:15:41	30	53	749	7
20:30:41	30	53	744	7
20:45:41	30	53	693	6
21:00:42	30	50	549	5
21:15:41	30	51	568	5
21:30:41	30	53	572	5
21:45:41	30	50	568	5
22:00:42	30	51	432	4
22:15:41	30	56	558	5
22:30:42	30	53	550	5
22:45:41	30	53	486	4
23:00:42	30	51	449	4
23:15:41	30	49	418	4
23:30:41	30	50	449	4
23:45:41	30	53	472	4

Zones Of fline:

Data for segment SEGO75 040 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:13:40	30	43	219	1
	0:28:40	30	41	197	1
	0:43:40	30	38	163	1
	0:58:41	30	39	155	1
	1:13:40	30	34	127	0
	1:28:40	30	36	172	1
	1:43:40	30	34	150	1
	1:58:40	30	36	122	1
	2:13:41	30	27	105	1
	2:28:40	30	27	83	0
	2:43:40	30	30	119	1
	2:58:41	30	30	100	1
	3:13:40	30	30	107	1
	3:28:40	30	30	104	1
	3:43:40	30	34	108	1
	3:58:40	30	33	132	1
	4:13:40	30	36	143	2
	4:28:41	30	33	150	1
	4:43:41	30	41	237	2
	4:58:40	30	38	220	2
	5:13:40	30	41	267	2
	5:28:41	30	49	367	3
	5:43:40	30	54	516	4
	5:58:40	30	56	611	5
	6:13:41	30	60	742	5
	6:28:40	30	60	1013	8
	6:43:40	30	60	1360	11
	6:58:41	30	58	1541	13
	7:13:40	30	59	1554	13
	7:28:40	30	59	1587	14
	7:43:40	30	54	1650	15
	7:58:40	30	49	1630	18
	8:13:40	30	49	1591	17
	8:28:40	30	49	1530	16
	8:43:41	30	46	1427	17
	8:58:40	30	38	1384	21
	9:13:40	30	50	1221	12
	9:28:40	30	54	1240	11
	9:43:40	30	51	1248	12
	9:58:40	30	54	1232	11
	10:13:40	30	54	1070	9
	10:28:40	30	53	1151	11
	10:43:40	30	53	1172	11
	10:58:41	30	52	1248	12
	11:13:40	30	54	1132	10
	11:28:40	30	56	1172	10
	11:43:40	30	55	1154	11
	11:58:41	30	55	1053	9

12:13:40	30	56	1127	10
12:28:40	30	54	1171	11
12:43:41	30	56	1089	10
12:58:40	30	63	931	7
13:13:40	30	53	1085	10
13:28:40	30	55	1236	11
13:43:41	30	57	1212	10
13:58:40	30	59	1231	10
14:13:40	30	55	1173	11
14:28:41	30	56	1385	12
14:43:40	30	53	1470	14
14:58:40	30	54	1500	14
15:13:41	30	54	1506	14
15:28:40	30	54	1493	14
15:43:40	30	54	1605	15
15:58:40	30	54	1477	13
16:13:41	30	53	1534	14
16:28:40	30	54	1499	14
16:43:40	30	56	1486	13
16:58:41	30	56	1507	13
17:13:40	30	53	1560	15
17:28:40	30	50	1515	15
17:43:41	30	46	1425	15
17:58:40	30	54	1392	13
18:13:40	30	55	1246	11
18:28:41	30	53	1406	13
18:43:40	30	54	1242	11
18:58:40	30	56	1050	9
19:13:40	30	55	961	8
19:28:40	30	53	991	9
19:43:40	30	54	854	7
19:58:40	30	55	853	7
20:13:40	30	53	769	7
20:28:40	30	55	797	7
20:43:40	30	55	702	6
20:58:40	30	52	601	5
21:13:40	30	52	558	5
21:28:40	30	54	608	5
21:43:41	30	50	587	5
21:58:40	30	50	475	4
22:13:40	30	55	526	4
22:28:40	30	54	576	5
22:43:41	30	53	505	5
22:58:40	30	53	481	4
23:13:40	30	47	398	4
23:28:41	30	50	486	4
23:43:41	30	50	483	4
23:58:40	30	55	497	4

Zones Of fline:

Data for segment SEGO75 044 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:11:42	30	0	0	0
	0:26:42	30	0	0	0
	0:41:42	30	0	0	0
	0:56:42	30	0	0	0
	1:11:42	30	0	0	0
	1:26:42	30	0	0	0
	1:41:42	30	0	0	0
	1:56:42	30	0	0	0
	2:11:41	30	0	0	0
	2:26:41	30	0	0	0
	2:41:41	30	0	0	0
	2:56:41	30	0	0	0
	3:11:41	30	0	0	0
	3:26:41	30	0	0	0
	3:41:42	30	0	0	0
	3:56:41	30	0	0	0
	4:11:42	30	0	0	0
	4:26:41	30	0	0	0
	4:41:42	30	0	0	0
	4:56:42	30	0	0	0
	5:11:41	30	0	0	0
	5:26:42	30	0	0	0
	5:41:42	30	0	0	0
	5:56:42	30	0	0	0
	6:11:42	30	0	0	0
	6:26:42	30	0	0	0
	6:41:42	30	0	0	0
	6:56:42	30	0	0	0
	7:11:42	30	0	0	0
	7:26:42	30	0	0	0
	7:41:42	30	0	0	0
	7:56:41	30	0	0	0
	8:11:41	30	0	0	0
	8:26:42	30	0	0	0
	8:41:42	30	0	0	0
	8:56:42	30	0	0	0
	9:11:41	30	0	0	0
	9:26:41	30	0	0	0
	9:41:42	30	0	0	0
	9:56:42	30	0	0	0
	10:11:42	30	0	0	0
	10:26:42	30	0	0	0
	10:41:42	30	0	0	0
	10:56:41	30	0	0	0
	11:11:41	30	0	0	0
	11:26:41	30	0	0	0
	11:41:41	30	0	0	0

11:56:42	30	0	0	0
12:11:41	30	0	0	0
12:26:41	30	0	0	0
12:41:41	30	0	0	0
12:56:42	30	0	0	0
13:11:41	30	0	0	0
13:26:41	30	0	0	0
13:41:41	30	0	0	0
13:56:42	30	0	0	0
14:11:42	30	0	0	0
14:26:41	30	0	0	0
14:41:42	30	0	0	0
14:56:42	30	0	0	0
15:11:41	30	0	0	0
15:26:41	30	0	0	0
15:41:42	30	0	0	0
15:56:42	30	0	0	0
16:11:42	30	0	0	0
16:26:42	30	0	0	0
16:41:42	30	0	0	0
16:56:42	30	0	0	0
17:11:42	30	0	0	0
17:26:42	30	0	0	0
17:41:42	30	0	0	0
17:56:41	30	0	0	0
18:11:41	30	0	0	0
18:26:41	30	0	0	0
18:41:41	30	0	0	0
18:56:42	30	0	0	0
19:11:41	30	0	0	0
19:26:41	30	0	0	0
19:41:42	30	0	0	0
19:56:42	30	0	0	0
20:11:42	30	0	0	0
20:26:42	30	0	0	0
20:41:42	30	0	0	0
20:56:42	30	0	0	0
21:11:42	30	0	0	0
21:26:42	30	0	0	0
21:41:42	30	0	0	0
21:56:42	30	0	0	0
22:11:42	30	0	0	0
22:26:42	30	0	0	0
22:41:42	30	0	0	0
22:56:42	30	0	0	0
23:11:42	30	0	0	0
23:26:42	30	0	0	0
23:41:42	30	0	0	0
23:56:42	30	0	0	0

Zones Of fline: 1 2 3

Data for segment SEGO75 046 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:00:53	30	95	4225	5
	0:15:52	30	98	4758	5
	0:30:53	30	93	3763	5
	0:45:53	30	100	3899	4
	1:00:53	30	106	4050	4
	1:15:52	30	92	4091	4
	1:30:53	30	97	3356	5
	1:45:53	30	89	4517	4
	2:00:53	30	88	4164	4
	2:15:53	30	97	4128	5
	2:30:52	30	99	4605	3
	2:45:53	30	99	3989	4
	3:00:52	30	83	3417	3
	3:15:53	30	101	3648	4
	3:30:53	30	96	4250	3
	3:45:53	30	88	3555	4
	4:00:52	30	88	3313	4
	4:15:53	30	82	3837	5
	4:30:53	30	95	3943	4
	4:45:53	30	103	4536	6
	5:00:52	30	85	4449	6
	5:15:53	30	102	4159	6
	5:30:53	30	100	3888	7
	5:45:53	30	93	2525	8
	6:00:53	30	99	3691	8
	6:15:53	30	106	3799	10
	6:30:52	30	95	3781	12
	6:45:53	30	92	4232	15
	7:00:53	30	95	3811	16
	7:15:53	30	103	3538	15
	7:30:53	30	87	3895	16
	7:45:53	30	94	2682	16

Data for segment SEGO75 050 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:12:23	30	42	196	1
	0:27:23	30	38	155	1
	0:42:23	30	41	150	1
	0:57:23	30	38	126	0
	1:12:24	30	38	131	1
	1:27:24	30	39	112	0
	1:42:23	30	34	141	1
	1:57:24	30	33	97	1
	2:12:23	30	30	96	1
	2:27:23	30	27	88	1
	2:42:23	30	29	100	1
	2:57:23	30	30	83	0
	3:12:23	30	32	89	0
	3:27:23	30	31	95	1
	3:42:23	30	33	93	0
	3:57:24	30	30	97	1
	4:12:23	30	32	116	1
	4:27:23	30	32	138	1
	4:42:23	30	36	163	1
	4:57:24	30	38	171	1
	5:12:23	30	36	217	2
	5:27:23	30	45	280	2
	5:42:24	30	48	347	3
	5:57:23	30	54	391	3
	6:12:23	30	55	464	3
	6:27:24	30	55	638	5
	6:42:23	30	56	822	7
	6:57:23	30	53	1006	9
	7:12:24	30	56	990	8
	7:27:23	30	56	1039	8
	7:42:23	30	55	1087	9
	7:57:26	30	55	1030	8
	8:12:25	30	53	1038	9
	8:27:25	30	54	1010	8
	8:42:26	30	49	1016	10
	8:57:25	30	51	879	8
	9:12:26	30	50	823	7
	9:27:26	30	49	885	8
	9:42:25	30	48	882	9
	9:57:25	30	47	930	9
	10:12:25	30	50	845	8
	10:27:25	30	49	875	9
	10:42:26	30	48	894	9
	10:57:25	30	48	963	10
	11:12:25	30	50	851	8
	11:27:26	30	50	900	9
	11:42:25	30	49	893	9
	11:57:25	30	49	826	8

12:12:25	30	48	863	9
12:27:26	30	48	978	10
12:42:25	30	49	920	9
12:57:25	30	54	870	8
13:12:25	30	49	857	9
13:27:26	30	47	1027	10
13:42:25	30	52	1028	9
13:57:26	30	50	1040	10
14:12:25	30	48	955	9
14:27:25	30	49	1128	11
14:42:25	30	50	1095	11
14:57:25	30	51	1212	12
15:12:25	30	50	1141	11
15:27:25	30	50	1218	12
15:42:25	30	51	1332	13
15:57:25	30	51	1304	12
16:12:25	30	51	1275	12
16:27:26	30	52	1307	12
16:42:25	30	52	1224	11
16:57:25	30	53	1285	12
17:12:26	30	54	1228	11
17:27:25	30	55	1273	11
17:42:25	30	53	1155	10
17:57:26	30	54	1110	10
18:12:25	30	53	990	9
18:27:25	30	53	1017	9
18:42:26	30	51	942	9
18:57:25	30	54	849	7
19:12:25	30	51	743	7
19:27:25	30	52	744	7
19:42:25	30	50	702	7
19:57:25	30	53	651	6
20:12:25	30	52	651	6
20:27:25	30	53	608	5
20:42:25	30	52	545	5
20:57:25	30	49	509	5
21:12:26	30	49	482	5
21:27:25	30	49	465	4
21:42:25	30	49	461	4
21:57:25	30	47	429	4
22:12:26	30	52	417	3
22:27:25	30	55	419	3
22:42:25	30	51	405	4
22:57:26	30	51	376	3
23:12:25	30	46	352	3
23:27:25	30	52	365	3
23:42:25	30	45	372	4
23:57:26	30	53	421	3

Zones Of fline:

Data for segment SEGO75 056 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:12:01	30	49	226	1
	0:27:01	30	37	179	1
	0:42:01	30	38	163	1
	0:57:02	30	37	162	1
	1:12:01	30	35	131	1
	1:27:01	30	37	119	0
	1:42:01	30	38	158	1
	1:57:01	30	34	130	1
	2:12:01	30	27	101	1
	2:27:01	30	28	100	1
	2:42:01	30	29	107	1
	2:57:01	30	28	105	1
	3:12:01	30	35	102	0
	3:27:01	30	34	117	1
	3:42:01	30	27	99	0
	3:57:01	30	29	103	1
	4:12:01	30	29	129	1
	4:27:01	30	33	134	1
	4:42:02	30	38	172	1
	4:57:01	30	41	190	1
	5:12:01	30	38	216	2
	5:27:01	30	46	295	3
	5:42:01	30	50	377	3
	5:57:01	30	53	423	3
	6:12:01	30	55	511	4
	6:27:01	30	52	682	6
	6:42:01	30	55	858	7
	6:57:01	30	52	1086	10
	7:12:01	30	55	1043	9
	7:27:01	30	55	1161	10
	7:42:02	30	54	1187	10
	7:57:01	30	54	1198	10
	8:12:01	30	53	1165	10
	8:27:01	30	53	1125	10
	8:42:01	30	46	1135	12
	8:57:01	30	49	1032	10
	9:12:02	30	50	869	8
	9:27:01	30	47	980	10
	9:42:01	30	46	1003	11
	9:57:01	30	48	1015	10
	10:12:01	30	48	950	10
	10:27:01	30	49	983	10
	10:42:01	30	49	995	10
	10:57:01	30	48	1053	11
	11:12:01	30	48	1018	10
	11:27:01	30	49	1000	10
	11:42:02	30	49	993	10
	11:57:01	30	50	984	10

12:12:02	30	48	972	10
12:27:01	30	49	1078	11
12:42:01	30	48	1092	11
12:57:01	30	52	998	10
13:12:02	30	49	956	10
13:27:01	30	47	1156	12
13:42:02	30	50	1136	11
13:57:01	30	50	1156	11
14:12:01	30	49	1129	11
14:27:01	30	48	1247	13
14:42:01	30	50	1235	12
14:57:02	30	50	1381	14
15:12:01	30	49	1319	14
15:27:01	30	48	1427	15
15:42:02	30	50	1511	15
15:57:01	30	49	1564	16
16:12:01	30	50	1424	14
16:27:01	30	50	1517	15
16:42:01	30	52	1383	13
16:57:01	30	52	1489	14
17:12:01	30	52	1440	14
17:27:01	30	53	1503	14
17:42:01	30	53	1328	12
17:57:01	30	51	1268	12
18:12:01	30	51	1138	11
18:27:01	30	52	1174	11
18:42:02	30	50	1060	11
18:57:01	30	53	995	9
19:12:01	30	51	864	8
19:27:01	30	51	838	8
19:42:01	30	49	821	8
19:57:01	30	54	742	7
20:12:01	30	49	750	8
20:27:01	30	52	745	7
20:42:01	30	51	626	6
20:57:01	30	46	589	6
21:12:01	30	51	566	5
21:27:01	30	49	538	5
21:42:02	30	49	533	5
21:57:01	30	47	499	5
22:12:01	30	50	464	4
22:27:01	30	52	477	4
22:42:01	30	49	460	4
22:57:01	30	49	434	4
23:12:01	30	44	396	4
23:27:01	30	52	420	4
23:42:01	30	47	424	4
23:57:01	30	52	449	4

Zones Of fline:

Data for segment SEGO75 058 for ########
Number of Lanes: 3

#	Time	Samp	Speed	Vol	Occ
	0:12:27	30	59	179	1
	0:27:27	30	49	140	1
	0:42:27	30	48	123	0
	0:57:28	30	46	130	1
	1:12:27	30	40	101	0
	1:27:27	30	46	105	0
	1:42:27	30	47	136	1
	1:57:28	30	39	102	0
	2:12:27	30	40	90	1
	2:27:27	30	36	87	0
	2:42:27	30	34	88	0
	2:57:27	30	39	91	1
	3:12:27	30	42	79	0
	3:27:27	30	37	90	1
	3:42:27	30	38	89	0
	3:57:27	30	37	87	1
	4:12:27	30	35	109	1
	4:27:27	30	40	122	1
	4:42:27	30	49	154	1
	4:57:27	30	48	163	1
	5:12:28	30	45	196	2
	5:27:27	30	52	265	2
	5:42:27	30	62	356	3
	5:57:27	30	68	370	3
	6:12:28	30	69	447	3
	6:27:28	30	67	616	5
	6:42:27	30	70	728	6
	6:57:27	30	66	925	8
	7:12:27	30	71	906	7
	7:27:27	30	69	992	8
	7:42:27	30	69	1025	8
	7:57:27	30	69	1049	8
	8:12:28	30	67	1004	8
	8:27:28	30	68	995	8
	8:42:27	30	60	954	9
	8:57:27	30	43	853	15
	9:12:27	30	39	708	13
	9:27:28	30	61	847	8
	9:42:27	30	58	845	9
	9:57:27	30	60	876	9
	10:12:27	30	60	788	8
	10:27:27	30	61	816	8
	10:42:28	30	61	835	8
	10:57:28	30	60	898	9
	11:12:27	30	60	834	8
	11:27:27	30	62	837	8
	11:42:27	30	63	858	8
	11:57:27	30	63	825	8

12:12:27	30	60	809	8
12:27:27	30	61	903	9
12:42:27	30	60	892	9
12:57:27	30	66	816	7
13:12:28	30	62	790	8
13:27:27	30	60	972	10
13:42:27	30	61	942	9
13:57:27	30	64	934	9
14:12:27	30	62	909	9
14:27:27	30	61	1007	10
14:42:28	30	61	986	9
14:57:27	30	64	1069	10
15:12:27	30	62	1034	10
15:27:27	30	61	1067	10
15:42:27	30	64	1133	11
15:57:27	30	64	1146	10
16:12:27	30	64	1068	10
16:27:27	30	64	1092	10
16:42:27	30	67	1002	9
16:57:28	30	67	1043	9
17:12:27	30	67	1020	9
17:27:27	30	68	1056	9
17:42:27	30	66	957	8
17:57:28	30	65	931	8
18:12:27	30	65	833	8
18:27:27	30	65	865	8
18:42:27	30	64	827	8
18:57:28	30	67	757	7
19:12:28	30	62	642	6
19:27:27	30	64	640	6
19:42:27	30	61	641	6
19:57:27	30	69	575	5
20:12:27	30	60	566	5
20:27:27	30	65	554	5
20:42:27	30	64	493	5
20:57:27	30	58	453	4
21:12:27	30	64	441	4
21:27:28	30	63	415	4
21:42:28	30	62	398	4
21:57:27	30	55	387	4
22:12:27	30	62	369	3
22:27:27	30	66	368	3
22:42:27	30	61	367	3
22:57:28	30	58	347	3
23:12:28	30	53	319	3
23:27:27	30	62	333	3
23:42:27	30	57	323	3
23:57:27	30	58	309	3

Zones Of fline: