

PREPARATION MANUAL FOR THE FIRE SCENE SIMULATION EXERCISE

SAN FRANCISCO FIRE DEPARTMENT H-50 ASSISTANT CHIEF

This manual is divided into seven sections:

Section 1 gives you a general overview of the exercise and what it is comprised of

Section 2 provides a list of the knowledge areas and abilities that may be measured in the exercise.

Section 3 describes the content of the exercise and the conditions that you are to assume exist when responding to the test questions.

Section 4 outlines the steps that you should follow when taking the exercise.

Section 5 explains how performance on the exercise will be evaluated.

Section 6 describes how a candidate should prepare for the FSSE.

Section 7 explains how and where to direct any questions that you may have about the Preparation Manual.

Section 1: General Overview

The exercise is designed to measure how well you can coordinate, direct, and give orders to companies under your command at a fire scene. Throughout the exercise you will be Chris Candidate, Assistant Chief of Division 4. The exercise consists of four different scenarios. For each of the scenarios in the exercise, you will manage the personnel associated with a “second alarm” dispatch or a “high-rise second alarm” dispatch, as appropriate. You will also have one H-10 Incident Support Specialist throughout the exercise.

The Fire Scene Simulation Exercise [FSSE] is presented via audio narration, and written and visual background information. Via the narration, you will be told when to review test materials, when to start your answers to the test questions, and when to stop. An MP3 player will be used to play the narration, and a digital recorder will be used to record your responses. You will be wearing a clip-on microphone during the exercise. You are to describe verbally into the audio recorder the actions that you would take and the orders that you would issue for each scenario. Everything that you know about each scenario will be based on the photos, audio narration, and accompanying written information. Narrated exercise instructions will provide additional information, as appropriate, for each scenario.

After the fourth and final fire scenario is over, the proctor will collect all of your test materials, including your notes. Then you will be taken to another room where you will wait until the clarity of your audio recording has been verified.

Section 2: What Knowledge Areas and Abilities Does the FSSE Measure?

The FSSE is a job simulation designed to measure the ability to perform specific job-related tasks and to apply knowledge. The knowledge areas and abilities were identified in the job analysis as critical and essential the first day on the job as an Assistant Chief in responding to fire emergencies. The job knowledge areas and abilities tested will come from the following list:

- Knowledge of planning and time management.
- Knowledge of response procedures for the Division.
- Knowledge of Standardize, Triage, And Rapid Transport (START) procedure to assist in aiding injured individuals.
- Knowledge of the Department's radio procedures.
- Knowledge of relevant Departmental procedures, General Orders, and manuals in designing a firefighting plan.
- Knowledge of search procedures used by SFFD.
- Knowledge of shutoff procedures for all utilities (electrical, gas, and water).
- Knowledge of EMT procedures.
- Knowledge of the Department's policies regarding vehicle operation in an emergency.
- Knowledge of Department's policies regarding whom to inform and contact for emergency or routine events.
- Knowledge of the Department's policies regarding uniforms and protective clothing.
- Knowledge of the Department's staffing policy regarding the appropriate level of staffing in fire suppression units.

- Knowledge of arson devices and traps and trailers that would suggest the cause of the fire.
- Knowledge of common arson techniques.
- Knowledge of various methods of tampering with or bypassing meters and distribution panels (gas and electric).
- Knowledge of firefighting equipment, its uses, capabilities, and limitations.
- Knowledge of general principles of hydraulics, water supply, friction loss, back pressure, and hose equipment required to deliver fire stream.
- Knowledge of nozzles, their use and adjustments.
- Knowledge of sprinkler supply and operation.
- Knowledge of hazardous materials and their implications for firefighting situations.
- Knowledge of hazardous materials and their effect on safety of crew and environment.
- Knowledge of smoke and heat and how they travel (e.g., backdrafts).
- Knowledge of the fire ignition sequence.
- Knowledge of common electrical hazards (e.g., frayed wires, multiple outlets, pennies in fuse boxes) that would suggest the cause of the fire.
- Knowledge of which support units and additional resources need to be called after sizing-up fire.
- Knowledge of the different types of water supply (high-and-low-pressure systems).
- Knowledge of the type of firefighting protection that is available in each structure.
- Knowledge of natural gas distribution systems.
- Knowledge of operation of sprinkler systems and how to operate shutoff valves.
- Knowledge of communications systems, equipment, and procedures used by other groups (e.g., Coast Guard, High Patrol, ambulance, mutual aid agreements) that affect how SFFD will proceed in its approach to an emergency.
- Knowledge of SFFD first aid resources available and those on the way (e.g., what assistance is provided by other units).
- Knowledge of the capabilities of Battalion Chiefs (including technical skills unrelated to their primary job) that can be used at a later time.
- Knowledge of departmental staff and their functions.
- Knowledge of building construction (e.g., type of wall - I to IV) to determine how to ventilate and assess causes of fire.
- Knowledge of building construction to enable one to use firefighting facilities and equipment in building.
- Knowledge of the Building Construction Manual regarding the manner in which fire affects various types of building construction.
- Knowledge of the Building Construction Manual and Building Code with regard to the types of construction of various types of buildings.
- Knowledge of the Hazardous Materials Manual (Emergency Response Guidebook, DOT), regarding operating procedures at hazardous materials incidents.
- Knowledge of the Department's Truck and Ladder Manual regarding capabilities of trucks.
- Knowledge of ladder-raising procedures in order to determine where and how ladders should be placed in all situations (e.g., on hills or near wires).
- Knowledge of the Water Supply Manual regarding types of hydrants (single, double, high/low pressure).
- Knowledge of the Water Supply Manual regarding water flow.
- Knowledge of the Water Supply Manual regarding water availability, emergency sources of water, and auxiliary water supply systems.
- Knowledge of the Water Supply Manual regarding how low-pressure system in San Francisco operates.
- Knowledge of the Department's Hose Appliance Manual regarding types of sprinkler systems.
- Knowledge of the Department's Hose Appliance Manual regarding types of standpipe systems.

- Knowledge of the Ventilation Manual regarding behavior, spread, and characteristics of fire.
 - Knowledge of the Ventilation Manual regarding ventilation procedures (e.g., cross ventilation, roof ventilation, basement ventilation).
 - Knowledge of the Ventilation Manual regarding trucks and ladders.
 - Knowledge of construction methods, to direct firefighters to disassemble relevant parts of building.
 - Knowledge of building materials, in order to choose appropriate tools for overhaul.
 - Knowledge of building construction, such as plumbing, electricity, and gas in order to work safely within building in firefighting situation.
 - Knowledge of the Department's Pump Operator's Manual regarding the capabilities of pumps.
 - Knowledge of the Department's High-Rise Manual regarding operational procedures for high-rise buildings.
 - Knowledge of the Department's Rapid Transit Manual regarding operational procedures for BART and MUNI emergency incidents.
 - Knowledge of how to use all the departmental manuals.
 - Knowledge of the Incident Command System.
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- Ability to track where all the companies are, what they doing, what support they need, and to direct them accordingly.
 - Ability to adapt to changing conditions in weather, fire, extent of damage, and exposure.
 - Ability to recognize differences in resources and equipment to assign and delegate appropriately.
 - Ability to assess multiple events and circumstances and to coordinate a response.
 - Ability to recognize severity of injuries, and to decide whom to treat first, in multiple-injury accidents.
 - Ability to adapt or improvise methods, equipment, and salvage procedures to the requirements of the situation.
 - Ability to use overhaul equipment in a way that results in the least damage to the building.
 - Ability to decide quickly how to rescue victims, crew, or self.
 - Ability to make decisions when under pressure or in emergency.
 - Ability to coordinate emergency response activities with personnel from other departments (e.g., police, highway patrol, or Red Cross).
 - Ability to take command of situation as Incident Commander or before higher-ranking officer arrives.
 - Ability to direct others in responding to an emergency according to plans.
 - Ability to take command of a medical emergency.
 - Ability to coordinate fire attack through clear and concise orders.
 - Ability to communicate verbally with people from wide variety of backgrounds.
 - Ability to communicate verbally information about fire or other emergency to team members.
 - Ability to speak clearly at all times, but particularly when under pressure or in an emergency situation.
 - Ability to transmit messages clearly, concisely, and according to proper procedure using equipment such as radio or telephone.
 - Ability to relay information that can be understood by those in distress.
 - Ability to understand verbal communications from others.
 - Ability to communicate problems with equipment to others.
 - Ability to explain technical information in a way that is understood by those who need to know.
 - Ability to select, organize, and present pertinent information in logical order.
 - Ability to allocate resources according to the needs of the situation.
 - Ability to anticipate outcomes and to redirect attack or approach to emergency.
 - Ability to visualize spread of fire, based upon understanding of construction of building and the characteristics of its contents, in order to determine approach for firefighting activity.

- Ability to assess situation at emergency scene in order to instruct companies where to position apparatus.
- Ability to recognize the potential for the emergency to escalate and the need for additional resources or assistance.
- Ability to evaluate spread of fire and extent of damage on scene and decide whether to extinguish the fire or protect an exposure.
- Ability to evaluate smoke characteristics and fight fire accordingly.
- Ability to relate characteristics of fire to type of occupancy and location of facility.
- Ability to assess smoke characteristics such as color of smoke during daylight, volume of smoke, pressure of smoke, amount of flame production, and amount of smoke production, in order to know stage of fire and when/how to ventilate.
- Ability to choose ventilation position based on heat, fire, and smoke.
- Ability to assess the safety characteristics of the roof structure.
- Ability to draw logical conclusions from a body of facts (e.g., in initial size-up of fire or emergency situation.)
- Ability to sense heat, sounds, smoke, winds, etc., and to evaluate situation before taking action at fire scene.
- Ability to judge speed necessary to perform and execute an activity in question (e.g., emergency response vs. overhaul).
- Ability to estimate or gauge distances/heights so as to order appropriate ladder for fire escapes or to place aerial ladder.
- Ability to anticipate changes in conditions and circumstances and adapt approach accordingly.
- Ability to integrate information gathered from visual, aural, and other senses and to act accordingly.
- Ability to recognize information that will be useful to the firefighting situation.
- Ability to determine which equipment should be used in firefighting activities.
- Ability to recognize which object in salvage should be saved.
- Ability to recognize what material needs to be removed from the premises.
- Ability to determine which areas and the amount of areas of building that need to be checked for fire damage.
- Ability to recognize a hazardous material spill.
- Ability to recognize dangerous situations involving crowds.
- Ability to recognize signs of suspicious origin of fire.
- Ability to recognize that something unusual has taken place or that something unusual is on site that would suggest the cause of the fire.
- Ability to recognize and preserve a potential piece of evidence for determining the cause of fire.
- Ability to relate first observations (e.g., conditions at outset of fire) to later needs (e.g., determining the cause of fire).
- Ability to recognize unusual, suspicious, or irrational behavior on the part of occupants or witnesses.
- Ability to recall and describe circumstances, conditions, and events that are noticed at the outset of an emergency.
- Ability to recognize building code violations that have to be referred to other agencies.
- Ability to recognize violations of rules and procedures.
- Ability to evaluate extent of injuries in determining rescue operations (e.g., whether to apply first aid or remove victim from problem area).
- Ability to adapt or improvise methods for carrying victims from the scene of a fire or other emergency situation.
- Ability to quickly decide course of action in response to fire or other emergency.
- Ability to select rescue tools and procedures appropriate to the situation.
- Ability to assess and evaluate the risk involved in rescue operations, and to perform accordingly.

- Ability to comprehend and learn from SFFD manuals.
- Ability to read and interpret floor plans.
- Ability to extract information from manuals and to apply to maintenance, training, and firefighting activities.
- Ability to read and interpret written material available in fire college, in manuals, or in material found at fire scenes.
- Ability to integrate information from non-SFFD sources (e.g., BART, hospital) with SFFD rules, regulations, and procedures.
- Ability to read and interpret maps in order to locate addresses, cisterns, etc.
- Ability to apply general principles of hydraulics to maintenance, training, and firefighting activities.
- Ability to apply general principles of mechanics to maintenance, training, and firefighting activities.
- Ability to apply general electrical principles to maintenance, training, and firefighting activities.
- Ability to read and interpret written messages and dispatches.
- Ability to remain calm and to follow directions when under pressure or in an emergency.

Section 3: Content / Conditions of the Exercise

The following materials will be provided for your use when taking the FSSE:

1. ***Test Questions Page***

This document contains the four questions that you will answer for each of the four scenarios.

2. ***Symbols Page***

The Symbols Page shows the symbols [and their meanings] that are used on the Street Diagram. You should use these symbols when drawing on the Street Diagram.

3. ***Dispatch Booklet***

This booklet contains a written copy of the dispatch information for each scenario. The dispatch booklet for the sample exercise [included in this manual] contains the dispatch for the sample exercise.

4. ***Photo Booklet***

This booklet contains the photos for the fire scenarios. You will be provided with at least one photo for each scenario. The photo booklet for the sample exercise [included in this manual] contains an approach shot and an on-scene shot

5. ***Street Diagram Booklet***

This booklet contains the street diagrams for the four scenarios. The street diagram booklet for the sample exercise [included in this manual] contains the street diagram for the sample exercise as well as a copy of the street diagram upon which a sample answer

to the sample scenario has been illustrated. Note that “Route” indicated on the street diagram is the direction from which you are approaching the incident. The route that arriving companies take to approach the incident is at the discretion of you, the incident commander.

6. *Notepaper*

You will be provided with five pages of lined notepaper for your use during the FSSE.

For purposes of this exercise, the following will apply:

1. An Engine company will consist of an officer and three firefighters.
2. A Truck company will consist of an officer and four firefighters.
3. You will always be the senior officer on scene, and in command of the incident. At no time will you be relieved of command. You will have an H-10 Incident Support Specialist with you throughout the four scenarios.
4. Any engine that responds will have a 1500 gpm pump, a 500 gallon tank, with at least 1,000 feet of 3” hose in the main hose bed. Each engine will also have two 1 ¾” ready lines, each 200 feet in length; two small line bundles, each 100 feet in length; three 50’ lengths of 2 ½” hose; and a High Rise bag.
5. Any truck that responds will be equipped with a 100-foot aerial ladder with hydraulic outriggers, as well as a full complement of ladders and equipment.
6. During your response to a scenario, you may call for resources in addition to the personnel and equipment listed on the dispatch. Other resources that may be called for includes, but is not limited to:

HazMat Unit
Hose Tender
Ambulances

7. For each of the four scenarios, a second alarm will have been called prior to your arrival on scene. However, for purposes of the test, **no additional information** other than the request for the second alarm will have been communicated to DEC prior to your arrival. The apparatus responding to a high-rise incident will be as specified in the High Rise manual. The apparatus responding to any non-high rise incident will be the following:

1 st Alarm	Working Fire	2 nd Alarm
Three engines	One RIC	Four engines
Two trucks	One Rescue Captain	One truck
One Assistant Chief		One Battalion Chief
Two Battalion Chiefs		One ambulance

One Rescue Squad		One Rescue Captain
One ambulance		Bureau of Equipment
		Arson – 4710
		Mobil Air

8. If you call for additional alarms beyond the second alarm response, the alarm assignments will consist of the following:

3 rd Alarm	4 th Alarm	5 th Alarm
Four engines	Four engines	Four engines
Two trucks	One truck	One truck
One Battalion Chief	One Battalion Chief	One Battalion Chief
One ambulance	One ambulance	One ambulance

Section 4: Steps for Taking the Exercise

A test proctor will be in the room to give you the exercise materials and to ensure that the audio recorder is working. The narrated instructions will tell you when to do the following:

1. Review the test questions page and the symbols page.
2. Review the dispatch information.
3. View the photo(s) for the scenario.
4. Review the street diagram.
5. Respond to the questions. When responding to the questions, be very clear, thorough, and complete in your instructions. For example, you might say, “I would tell the Division of Emergency Communications ...” or “I would direct E-53 to ...”.

Once you are told by the narrator to begin your verbal responses [“Begin your response now”], you will have 12 minutes to state your responses, draw on the street diagram, and listen to the narrator provide additional information. During the response period, you will be informed by the narrator when each responding company arrives on scene or the narrator will provide additional information relevant to the scenario. The narrator will also inform you when the response period is over by saying “stop your response now”. Any response that is recorded after the narrator states, “stop your response now” will not be scored. It is recommended that you wear a watch so that you can monitor your response time.

You may draw on the street diagram only during the verbal response period of the exercise. Using the symbols on the symbols page, you should draw on the street diagram the position where you would establish the command post; where you would direct companies to locate their apparatus; where you would direct companies to place ladders

and/or extend hose lines; etc. It is recommended that you first provide your verbal response, then draw on the street diagram. Your drawing will not be scored, but can be used by the raters to better understand your response regarding your actions and directions. **If you do not verbally state your directives, the *Street Diagram* will not be reviewed by the raters.**

You will have note paper on which to make notes, and you will have to turn in these notes at the end of the exercise. However, your notes will not be seen or evaluated by the raters.

Remember: You will be required to verbally answer the same four questions for each scenario. All of your answers will be recorded and scored.

Section 5: How Is Performance on the Fire Scene Simulation Exercise Evaluated?

Scoring will involve two groups, one to develop the scoring key and one to do the ratings. The Scoring Key Development Committee will be composed of officers at the rank of Battalion Chief or above from the SFFD who will develop the scoring key to be used to rate candidates. The Rating Committee will be comprised of subject matter experts from outside the SFFD who will be trained on the scoring key by the test expert. Your exercise score will be based upon an evaluation of only your verbal, recorded responses. Your responses will be independently evaluated by two raters. The two raters will then confer to reach a consensus final rating.

Section 6: Sample Exercise Materials

To prepare for the FSSE, you should familiarize yourself with the following:

Sample Audio Narration. The sample audio file will be available on the Department of Human Resources web site at www.sfdhr.org under Department Highlights, H-50 Assistant Chief by Noon on July 14, 2010.

In order to become familiar and comfortable with the booklet and audio formats, it is recommended that you listen to a sample audio file while using the sample exercise materials. The sample audio file narration and sample test materials are similar to the narration and test materials that you will receive on the day of the examination.

Sample Test Materials. The sample test materials that follow are similar to the materials that you will receive at the time of the exercise. Please note that for the actual examination, the relevant written materials will be presented in separate booklets or pages.

1. Sample Test Questions
2. Sample Symbols Page
3. Sample Dispatch Booklet
4. Sample Photo Booklet

5. Sample Street Diagram Booklet containing a sample diagram and a sample diagram answer.

Sample Test Questions

Question 1: What initial and subsequent reports do you give to the Division of Emergency Communications?

Question 2: Would you request additional resources? If so, what additional resources do you request? You may request additional resources at any time during the scenario. If you do request additional resources, you must indicate the specific resource and its purpose at the fire scene. If you do not wish to request additional resources, say so.

Question 3: What directions or assignments do you give to the officers of the companies on scene?

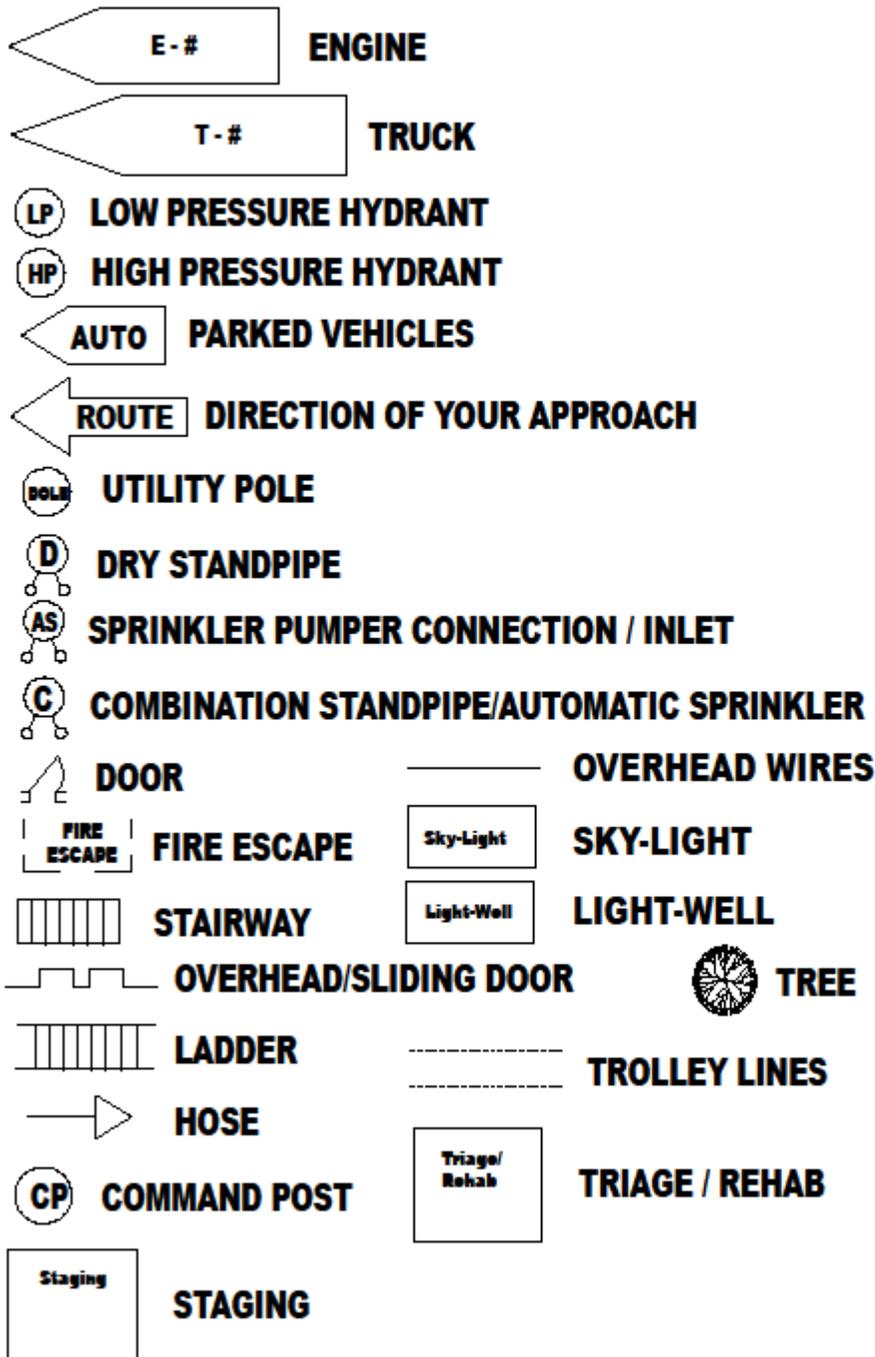
When answering this question, be sure to include:

- Where you would order the companies to place their apparatus in response to the alarm.
- The orders you would give to these companies with respect to special assignment, and ladder placement and hose leads [specify size of hose line].
- Where the companies should go and what actions they should take once ladders have been placed and hose leads made.

Remember that you will be told during the response period when a company arrives. Each of these companies must also be given direction as described above. Also, remember that you will be penalized for giving assignments to any company that has not arrived on scene.

Question 4: What, if any, special equipment should a company take with them to carry out the actions that you assign?

FIRE SCENE SIMULATION SYMBOLS



SAN FRANCISCO FIRE DEPARTMENT



H-50 ASSISTANT CHIEF EXAMINATION FIRE SCENE SIMULATION EXERCISE

Sample Exercise Dispatch Booklet

DISPATCH Sample:

10037460	8462	A11	FD05	19:35	1 st						
ADDRESS	632 HIXON AVE, SF (D=2E X STREET KITT ST & ELIVAS ST)										
1A:	E53	E55	E57	T33	T35	B26	B28	D04	RS5	TCA 26	M103
	KITT ST & ELIVAS ST										
FIB	REPORTED AS A FIRE IN THE BUILDING										
ENTRY AD	632 HIXON AVE										

10037460	8462	A11	FD05	19:35	WF
ADDRESS	632 HIXON AVE, SF (D=2E X STREET KITT ST & ELIVAS ST)				
FIB	REPORTED AS A WORKING FIRE				
	UNITS DUE E59 AND RC08				
	E59 IS RIC				

10037460	8462	A12	FD05	19:35	2 nd						
ADDRESS	632 HIXON AVE, SF (D=2E X STREET KITT ST & ELIVAS ST)										
2A:	E61	E63	E65	E67	T37	B30	RC09	M105	AR1	BE1	MA1
	KITT ST & ELIVAS ST										
FIB	REPORTED AS A WORKING FIRE										
ENTRY AD	632 HIXON AVE										

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Sample Exercise Photo Booklet





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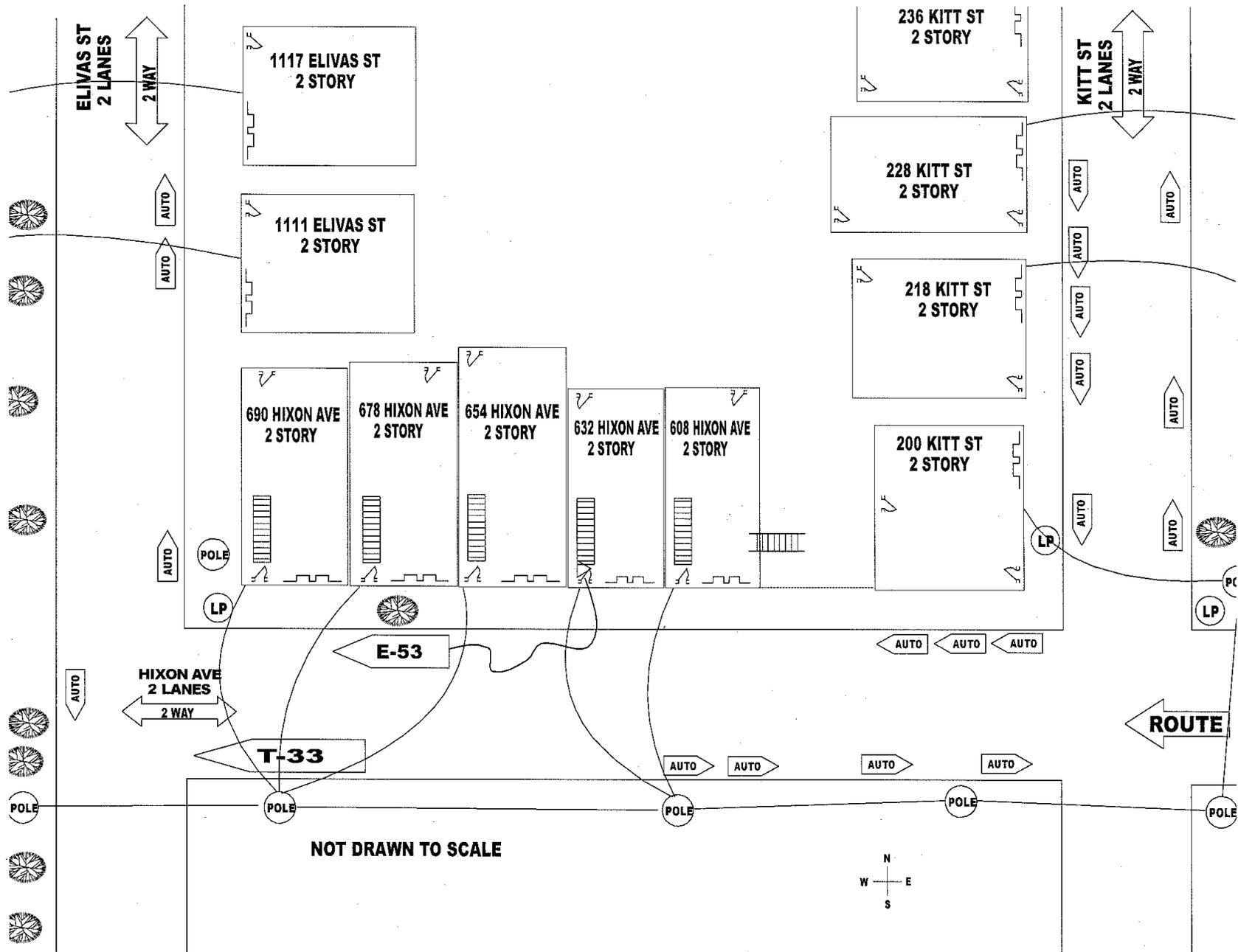
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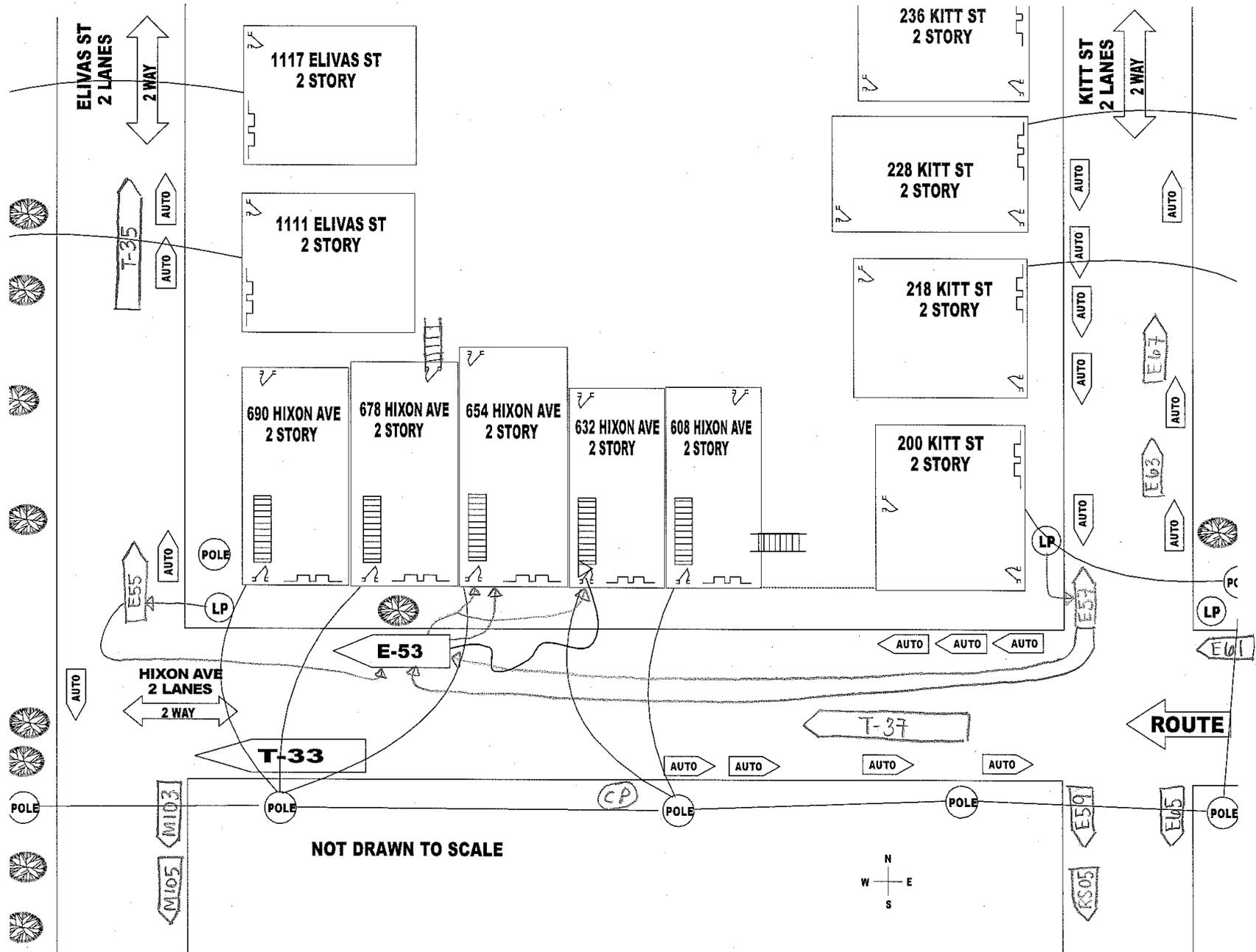
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Sample Exercise Street Diagram Booklet and Sample Answer Diagram





Section 7: Answers to Questions

Any questions that you have regarding this Preparation Manual must be submitted via email by 5:00 PM on 07/19/10 to dave.johnson@sfgov.org. A publication containing the answers to questions submitted will be made available to all candidates prior to the administration of the exercise.