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Handout

Los Alamos County Fire Department

LAFD: TA-3 NISC & SCC Facility Familiarization Tour

OJT #53356

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TITLE PAGE

Course Title	**LAFD: TA-3 NISC & SCC Facility Familiarization Tour**
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Training Setting	**Facility Tour**
Target Audience	**All Los Alamos Fire Department Response Personnel**
Optimum Training Location	**Onsite**

Introduction

Los Alamos National Laboratory (LANL, the Laboratory, or the Lab) conducts familiarization tours for Los Alamos County Fire Department (LAFD) personnel at the Strategic Computing Complex (SCC), TA-03-2327, and the Nonproliferation & International Security Complex (NISC), TA-03-2322. These tours are official LANL business; their purpose is to orient the firefighters to the SCC and the NISC so that they can respond efficiently and quickly to a variety of emergency situations. The tour includes ingress and egress of the buildings, layout and organization of the buildings, evacuation procedures, and areas of concern to emergency responders within these buildings. LAFD firefighters have the training, skills, and abilities to perform these emergency responder tasks; other LANL personnel who have the required clearance level cannot perform these tasks.

This handout provides details of the information, along with maps and diagrams, to be presented during the familiarization tours. The report will be distributed to the trainees at the time of the tour. A corresponding checklist will also be used as guidance during the familiarization tours to ensure that all required information is presented to the LAFD personnel.

Background of the SCC and the NISC

The SCC is a three-story structure with approximately 303,000 square feet that houses some of the world's largest and most capable computers. The SCC is one of the newer buildings at LANL, having been dedicated in May 2002. The specially designed computer rooms occupy 43,500 square feet and are supported by electrical and mechanical rooms in excess of 60,000 square feet. Options are available for cooling the computers with either air or water. Power capabilities are expandable up to 30 MW, and water requirements may reach 215,000 GPD.

The SCC provides a dynamic environment for approximately 300 technical experts to conduct cutting edge simulations and modeling. The SCC features two immersive visualization theaters, both featuring the latest in three-dimensional, virtual-reality environments for data viewing analysis. Individual office and administrative areas, called “pods,” surround the central computing facility. A 200-seat auditorium is also available for meetings and presentations.

Because most of the work in the pods and the computer rooms at the SCC is classified, most of these areas are considered to be vault-type rooms (VTRs). An escort is required throughout most of the building for visitors who do not have the appropriate clearance. The LANL security and protection force maintains a guard station in the main lobby of the building.

The NISC is a four-story facility with a basement of approximately 164,000 square feet, which houses more than 400 employees. The NISC is also one of the newer buildings at LANL, having been completed in December 2002. The building is designed for technical and administrative offices, light laboratories and manufacturing, and special security and support activities. Laboratory capabilities include physics, electronics, optics, instrumentation and computer development, and intelligence support. A high-bay laboratory, with an adjacent machine shop, is located on the first floor. The aboveground floors contain technical and administrative workspace, as well as areas designated to support projects with special security requirements.

LAFD Familiarization Escorts and Training Coordinators

The escorts and training coordinators (trainers) for the LAFD familiarization tours of the TA-3-2327, SCC and TA-3-2322, NISC facilities also include subject matter experts from Security & Emergency Operations (SEO). The contact information for trainers of Course #53356 is

- Rich Norman, 795-5265, rnorman@lanl.gov (NISC)
- Paul A. Blumberg, 500-2488, blumberg@lanl.gov (NISC)
- Gene Montoya, 795-5265, genem@lanl.gov (SCC)
- Peter S. Sandoval, 695-4441, (SCC).

Elements of the Familiarization Tour: SCC

Introduction in the Strategic Computing Complex (SCC) Main Lobby

1a. To initiate the familiarization tour, meet in the south end of the main corridor of the SCC, near the protective force guard station. Handouts will be distributed to each LAFD trainee; trainees will also sign the roster.

1b. Check that none of the LAFD personnel are carrying prohibited or controlled articles. Prohibited articles are those not permitted on Laboratory property, including parking lots, unless approved in advance by the Associate Directorate for Mission Assurance, Security, and Emergency Response—Investigation and Policy (ADMASER-IP). If a prohibited article is found, LANL may treat it as a reportable incident.

Prohibited Articles:

- Any dangerous weapons, explosives, or other dangerous instrument or material likely to cause substantial injury or damage to persons or property
- Alcoholic beverages, including unopened bottles or cans
- Controlled substances (e.g., illegal drugs and associated paraphernalia, but not prescription medicine)
- Other items prohibited by law

Controlled articles are those not permitted in a Laboratory security area, such as the SCC and the NISC, without prior authorization. The following articles are controlled:

- Recording equipment (audio, video, optical, or data)
- Cameras (video, still cell phones with cameras)
- Electronic equipment with a data exchange port capable of being connected to automatic information system equipment
- Radio-frequency-transmitting equipment
- Cell phones, two-way pagers, and personal digital assistants
- Computers, thumb drives, and associated media (including palm-top computers)

Government cell phones are allowed into security areas, as long as the batteries are removed. Trunked radios that are approved by LANL and required for work are also allowed. All other controlled articles should be placed in the lockable storage units outside the main entrance to the SCC.

1c. Discuss the history and purpose of the SCC. Discuss the general design and organization of the building, highlighting important features. For details, see *Background of the SCC and the NISC* above.

SCC Access Gates

2a. In the event of an emergency, notify Emergency Operations (EO) at 667-6211. This notification will also alert protective force personnel at the SCC security desk.
2b. Fire department personnel may also contact SOC-LA directly (665-7708) while in transit to the SCC in response to emergencies. The SCC security desk is manned by SOC-LA 24 hours a day, 7 days a week.
2c. The SCC is located between Bikini Atoll Road on the west and Pajarito Road on the east. The SCC is enclosed within a security fence that includes that segment of Pajarito Road to the east of the SCC.
2d. Emergency response vehicles can gain access to the SCC building through four electronically controlled gates: two from Bikini Atoll Road, one on each end of the closed section of Pajarito Road, one just to the north of the SCC building, and one just to the south. (See the SCC Building Evacuation Key Plan on page 9 for gate positions). These access points are also addressed in Sections 4b and 6a.
2e. The external access gates are controlled by protective force personnel at the SCC security desk. Protective force personnel will open the external gates to allow fire trucks to be driven into the complex and will escort firefighters to specific locations in the building in response to emergencies.

NOTE: ACCESS DURING AN ELECTRICAL OUTAGE
In the event of an electrical outage, protective force guards will be unable to open the gates electronically. After coordination with protective force personnel at the SCC security desk (665-7708), the gates may be opened following the instructions given on page 8.

SCC Main Lobby Features

3a. The main lobby of the SCC can be accessed through one of three entry doors: one each on the north, east, and south. A combination badge reader and palm reader is required for access to the main lobby of the building.

3b. The main lobby of the SCC is open to Q-cleared badge holders. Access to the pods, auditorium, and computer room is gained from the lobby. Except for the auditorium and the meeting rooms along the main lobby, access to the rest of the building is restricted.

3c. The security desk in the south end of the main lobby is a prominent feature. EO, at 667-6211, should also be notified in the event of any emergency.

3d. Floor plans for all three floors of the SCC are posted on the wall immediately north of the security desk. These floor plans show the locations of pods, two computer rooms, mechanical rooms, the auditorium, and other locations within the building.

3e. The fire alarm panel is located on the wall to the left (west) of the floor plans.

3f. Between the security desk and the fire alarm panel are the turnstiles to access the computer rooms, mechanical rooms, and most of the pods. To the right (north) of the fire alarm panel is an elevator to access the second and third floors, outside the pods. A stairway also provides access to the second and third floors. These primary evacuation routes are used during emergencies and for emergency medical evacuations.

3g. Across the hall, to the east on the floor plans, is an entrance to one of the pods. During emergencies, egress from this first-floor pod is through the front door and through the evacuation door at the north end of the main corridor.

3h. The entrance to the 200-seat auditorium is located between the east entry door and the south entry door, in the southeast corner of the SCC.

SCC External Features: East Side

4a. As you exit the east door of the SCC, note the fire department connection (FDC) on your left.

4b. The roadway immediately to the east of the SCC is a closed section of Pajarito Road and is to be used for fire department and other emergency access. During emergencies, protective force personnel will open the gate to the north and the gate to the south of the SCC (See SCC Building Evacuation Key Plan on page 9 for gate positions). Emergency vehicles will most likely enter through the gate to the north and proceed south. A yellow fire hydrant is located between the paved road and the fire department connection. Personnel requiring medical attention will be removed through the east entry door to ambulances waiting at the paved road.

4c. This area will likely be the incident command post during any emergency. Note that the assembly area for evacuating building occupants is located on the west end of the building, opposite the location of the incident commander. All communications with the assembly area will have to be made either through a runner or with a trunked radio.

4d. Note the personnel egress gates at either end (north and south) of this area. The emergency egress gate to the north is adjacent to the emergency access gate. Two walkways also are located between the SCC and the NSSB (TA-3-1400) that cross the paved road. When personnel enter the area during emergencies, emergency responders must be aware of evacuating personnel and civilian foot traffic.

4e. Note that the eastern side of the building is occupied by pods on each of the two floors.

SCC External Features: North Side

5a. Exit through the personnel access building (TA-3-1414) on the northeast corner of the SCC. People use this portal to access the NSSB, as well as the SCC and the NISC. This portal is also a primary route for evacuating personnel.

5b. One of three primary entrances to the SCC is located on the northeast corner of the building.

5c. About halfway between the east end and the west end of the building, note the evacuation door from the pods on the north side of the building. These pods occupy the first, second, and third floors. Building occupants who evacuate from this door will proceed to the assembly area to the east of the building.

5d. The security fence essentially surrounds the SCC, limiting access to a few locations.

SCC External Features: West Side

6a. Two service gates on the west end of the SCC provide access from Bikini Atoll Road. One of these gates is on the northeast corner of the parking lot, adjacent to Bikini Atoll Road. The more heavily used, primary service gate is located at the southeast corner of the parking lot. Protective force personnel will provide access through these gates during emergencies.

6b. The assembly area for occupants who evacuate the SCC is located in the open space to the east of the SCC. Communications with the assembly originate from the incident commander and will have to be done by means of a runner or cell phone to the on scene emergency commander.

6c. Large cooling towers and other infrastructure are located immediately behind the security fence, on the north side of the SCC. This infrastructure does not pose a hindrance to occupants evacuating the building during emergencies. Most of the mechanical rooms and computer-room support infrastructure are located on the north and west sides of the SCC.

6d. The primary service gate, at the southeast corner of the parking lot, accesses loading docks and other service facilities. This gate is not to be used by occupants evacuating the SCC.

6e. An FDC on the west side, just north of the cooling towers, is used for the sprinkler system protecting the computer room and other portions of the building.

SCC External Features: South Side

7a. Note the evacuation door on the southwest corner of the building and the associated crash gate at the security fence. This egress infrastructure services the southwest portions of the building on the second and third floors.

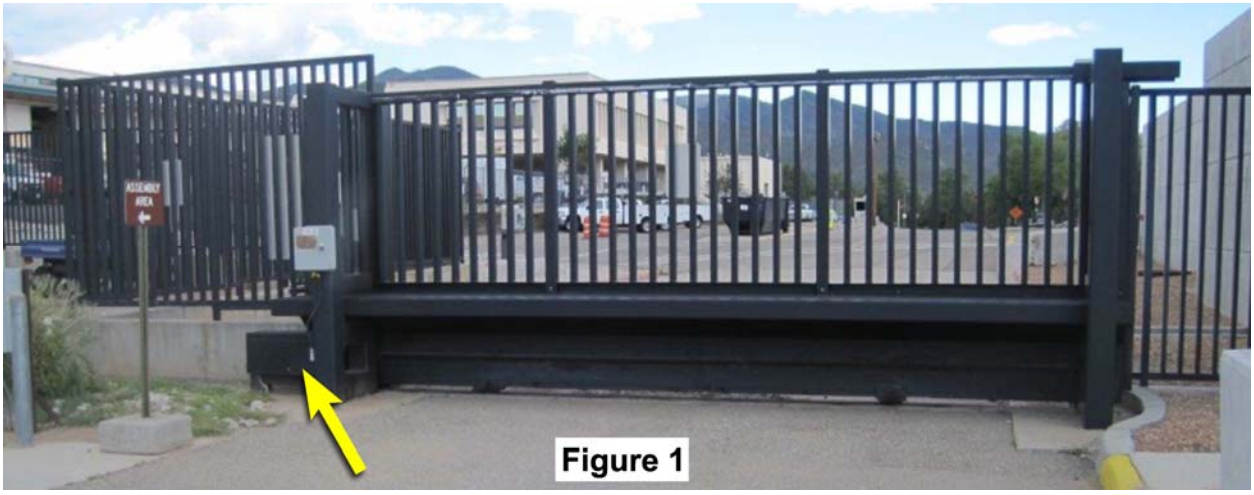
7b. Two FDCs are located at the southwest corner of the building; one is for sprinkler systems protecting portions of the facility, and the other is for a partial dry manual Class I standpipe in the southwest- and southeast-corner stairwells.

7c. At the southeast corner of the building is a second evacuation door and a crash gate. This infrastructure services five pods in this section of the building and is heavily used during emergencies. Evacuating personnel will proceed up the sidewalk to the assembly area on the west end of the building.

7d. One of the three main entrances to the SCC is located in the southeast corner of the building, adjacent to the auditorium. This entrance is the only portion of the SCC that is not surrounded by the security fence. This area is heavily traveled for access to the SCC and the NISC and to the nearby parking lots.

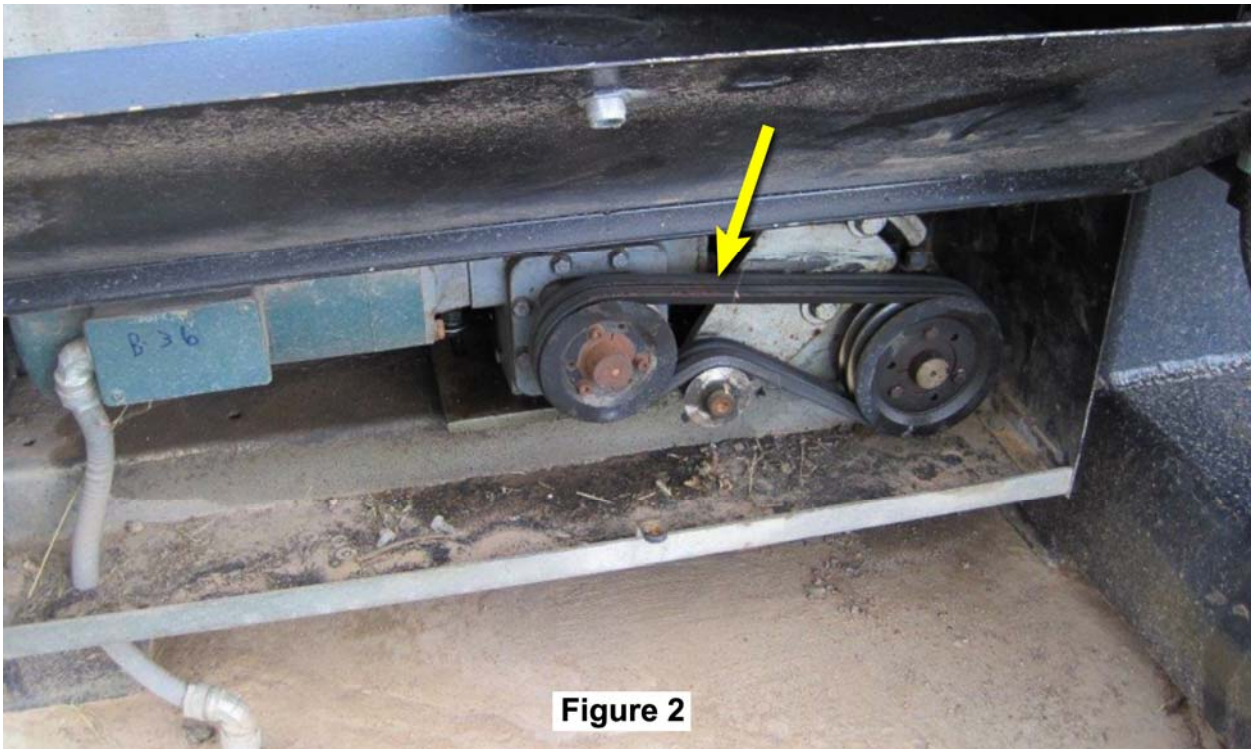
SCC Gate Operation in a Power Outage

The two vehicle access gates to the west of the SCC and the one at the northwest corner of the facility are electrically powered. If a power outage occurs, these gates will not operate. When responding to an emergency at SCC during a power outage, access through the gates requires manual override and operation (see Figure 1).

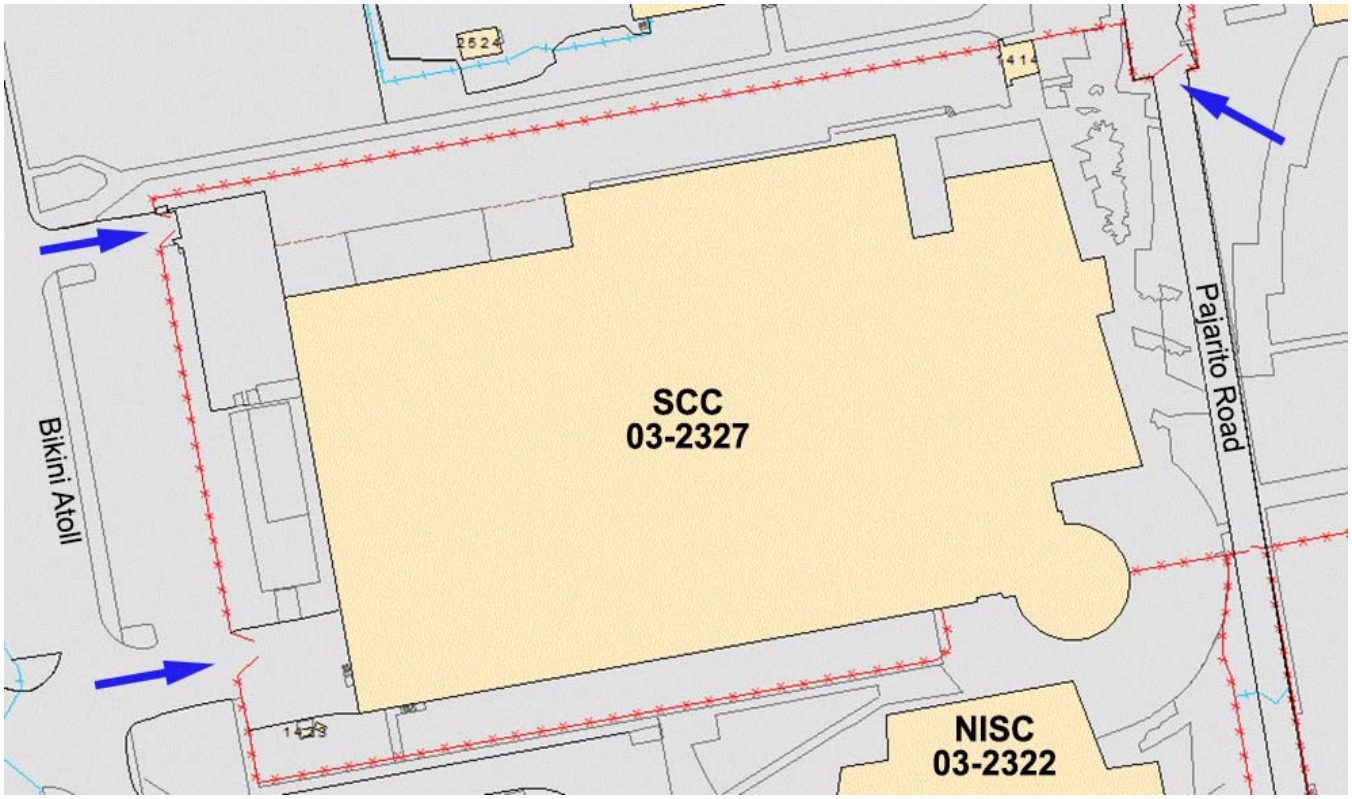


This security gate is located at the northeast corner of the SCC, TA03-2327, and is typical of the three gates that access the limited area adjacent to the facility. The arrow indicates the location of the box containing the drive motor and gear train that operate the gate. To open any of the access gates during an electrical power loss, follow the steps below sequentially:

1. Notify the protective force that LAFD will be opening the gate at _____ location.
2. Access the limited area via the pedestrian security portal (access controls have a nominal 12- to 24-hour battery backup).
3. Open the cover on the gear train box (indicated by the arrow, Figure 1).
4. Cut or otherwise remove the two drive belts connecting the motor and drive gear (Figure 2).
5. Push the gate open (two people can accomplish this easily).
6. Notify the protective force to secure the gate after emergency personnel have accessed the area.



Open gate motor box (the yellow arrow indicates the two drive belts).



Map showing the location of the three SCC vehicle access gates.

Elements of the Familiarization Tour: NISC

Introduction in the Nonproliferation and International Security Complex (NISC)

8a. Meet with the firefighters in the lobby.

8b. Discuss the history and purpose of the NISC. Discuss the general design and organization of the building, highlighting important features. For details, see *Background of the SCC and the NISC* on page 3.

8c. If evacuation of the NISC is required, personnel in the facility will follow the posted evacuation routes using the maps located throughout the building and proceed to their designated assembly area. Once there, personnel accountability will be completed by the appropriate facility representative.

8d. The senior facility representative or the designated facility representative will assume incident command until the LAFD or Emergency Management personnel arrive on scene and take charge.

8e. The Class I dry manual standpipes are located in the northeast stairwell and the southwest stairwell of the facility.

8f. Emergency vehicles can access the NISC from the east of the facility through the sliding gate, from Bikini Atoll Road on the west side, or from Mercury Road on the south.

8g. Two elevators are located in the NISC, one on the northeast side, with a capacity of 3000 lb, and the other on the southwest side, with a capacity of 5000 lb.

8h. Located at the southwest delivery dock is the FDC for the sprinkler and Class I dry manual standpipe systems.

NISC Basement

9a. A stair crawler is located near the northeast stairwell. The stair crawler is used to assist personnel with ambulatory problems up the stairs during an evacuation in which the elevator cannot be used.

9b. The basement of NISC is laid out with a hallway that goes all the way around the level, with laboratories and rooms located on either side of the hallway.

9c. Laboratories in the NISC basement house electronic equipment that is sensitive to static electricity. These laboratories should not be entered without permission, except in an emergency.

9d. Located in Room 503A is the stairway that leads to the mezzanine.

9e. Located in Room 602 are the facility steam valves, air compressors, condensate pumps, chill water pumps, electrical switchgear, and waste storage area.

9f. Laser laboratories are located in the NISC basement (Rooms 606 and 601, and also 511, which is inactive); these laboratories are posted with typical laser lab postings. A green light on the posting means access is permitted, a yellow light means caution, and a red light means access is not permitted.

9g. Located in the NISC basement is a very-high-radiation source area (Room 303). The room is interlocked and posted to prevent personnel from entering while the source is being used. Room 303C is a beryllium and lithium storage area, and it is possible that beryllium and/or lithium could be out in the open in Room 303. Beryllium articles for testing could be in Rooms 503, 601, and 602, but not in the open area of those rooms.

9h. Electrical transformers also are located in Room 303.

9i. Located in Room 302, just outside Room 303, is the hot cell door hydraulic operating system. The hydraulic system operates the heavy shield doors for the hot cell where the very-high-radiation source is located.

9j. The electrical equipment room is located on the west side of the basement (Room 616).

9k. An elevator is located in the southwest corner of the basement and has a capacity of 5000 lb.

9l. Located in the stairwells are the standpipe hose connections.

NISC Fourth Floor

10a. Describe the fourth-floor layout.

10b. The breakout doors for the fourth floor of the Sensitive Compartmented Information Facility (SCIF) are located on the southwest side of the building.

10c. The electrical equipment room is located on the west side (Room 4824).

10d. The access door to the fourth floor roof is located at the southwest stairwell.

10e. The facility elevator mechanical rooms are located on the roof.

NISC Third Floor

11a. Describe the third-floor layout.

11b. The breakout doors for the third floor of the SCIF are located on the southwest side of the building.

11c. The electrical equipment room is located on the west side (Room 3824).

11d. The access door to the second-floor roof is located on the southwest side of the building.

11e. The equipment located on the second-floor roof is the heating, ventilation, and air conditioning (HVAC) system and the high-efficiency particulate air (HEPA) filtration system for the building.

NISC Second Floor

12a. Describe the second-floor layout.

12b. The evacuation chair is located on the southwest side of the second floor.

12c. The electrical equipment room is located on the west side (Room 2824).

NISC First Floor

13a. An emergency egress door is located on the east side of the facility, by the elevators.

13b. The fire panel for the facility is located by the southwest access door on the first floor.

13c. The high-bay rooms are located on the west side of the building.

13d. Flammable cabinets are located in the high-bay area.

13e. The roll-up door for the high bay is located on the southwest corner of the building.

13f. Two ingress/egress doors are located on the southwest side of the facility.

NISC Outside

14a. Located on the south side of the NISC is an equipment pit where facility equipment is stored.

14b. Using the Fire Protection map, locate the fire water post indicator valves (PIVs).

14c. Located at the southwest corner of the building is a liquid nitrogen Dewar.

14d. Located at the southwest corner of the building is the hot-box water shutoff.

14e. Located at the southwest corner of the building is a 500-gallon diesel fuel oil tank.

14f. Located at the southwest corner of the building is the emergency diesel generator.

14g. Located at the southwest corner of the building is the compressed gas storage area.

14h. Located on the west side of the building is the 13.2-kV power shutoff.

14i. Located on the west side of the building are the air conditioning unit condensers.

14j. The four facility assembly areas are located south of the building across Mercury Road. (See the NISC Building Evacuation Key Plan Map on page 16.)

14k. Using the Fire Protection Map on page 22, locate the fire hydrants and fire department connections.

14l. Locate the fire department vehicle access points.

Relative Risks

Electrical Hazards:

Electrical equipment rooms in each building represent electrical shock hazards. All electrical equipment is posted with high-voltage signs according to Laboratory specifications.

Radiological Hazards:

A significant radiation hazard exists in the NISC basement; it is an extremely high-radiation source that is posted and interlocked to prevent inadvertent exposure.

Beryllium Hazards:

Beryllium hazards exist in the basement of the NISC. It is possible that beryllium could be out in the open in Room 303.

Laser Hazards:

Laser rooms are located in the basement of the NISC and are posted and interlocked according to Laboratory specifications.

Hydraulic Fluid Hazards

Located in Room 302 of the basement of the NISC is a hydraulic operating system for the hot cell door. Hydraulic fluid is very flammable, and the system is under pressure to provide motive force to operate the heavy hot cell door.

Pressurized Gas Cylinders:

Pressurized gas cylinders are located throughout the facilities for a variety of uses. The facilities incorporate a pressure safety program to mitigate the hazards presented by the use of pressurized gas (e.g., explosions, release of contents, and mechanical injury).

Cryogenic Hazards:

Cryogenic hazards (liquid nitrogen) are located outside the NISC on the south side.

Controls

The following controls are in place to reduce the risk of accidents that would cause personnel or responders to be exposed to facility hazards.

- *Quality Management Program–Training and Qualification Program:* Workers are trained and qualified on security and safety.
- *Fire Suppression System:* Minimizes the spread of fires and lowers temperatures.
- *Postings:* Postings are as usual for LANL operating areas. All appropriate posting requirements are adhered to.
- *PPE:* Personal protective equipment (PPE) is required as the last line of defense to further protect workers from hazards. In the spirit of Occupational Safety and Health Administration (OSHA) Regulation 1910.132, *General Requirements for PPE,* guidelines for PPE will be determined during the Integrated Work Management process.
- *Integrated Work Management:* An integrated work document (IWD) is required for all moderate- or high-hazard work.

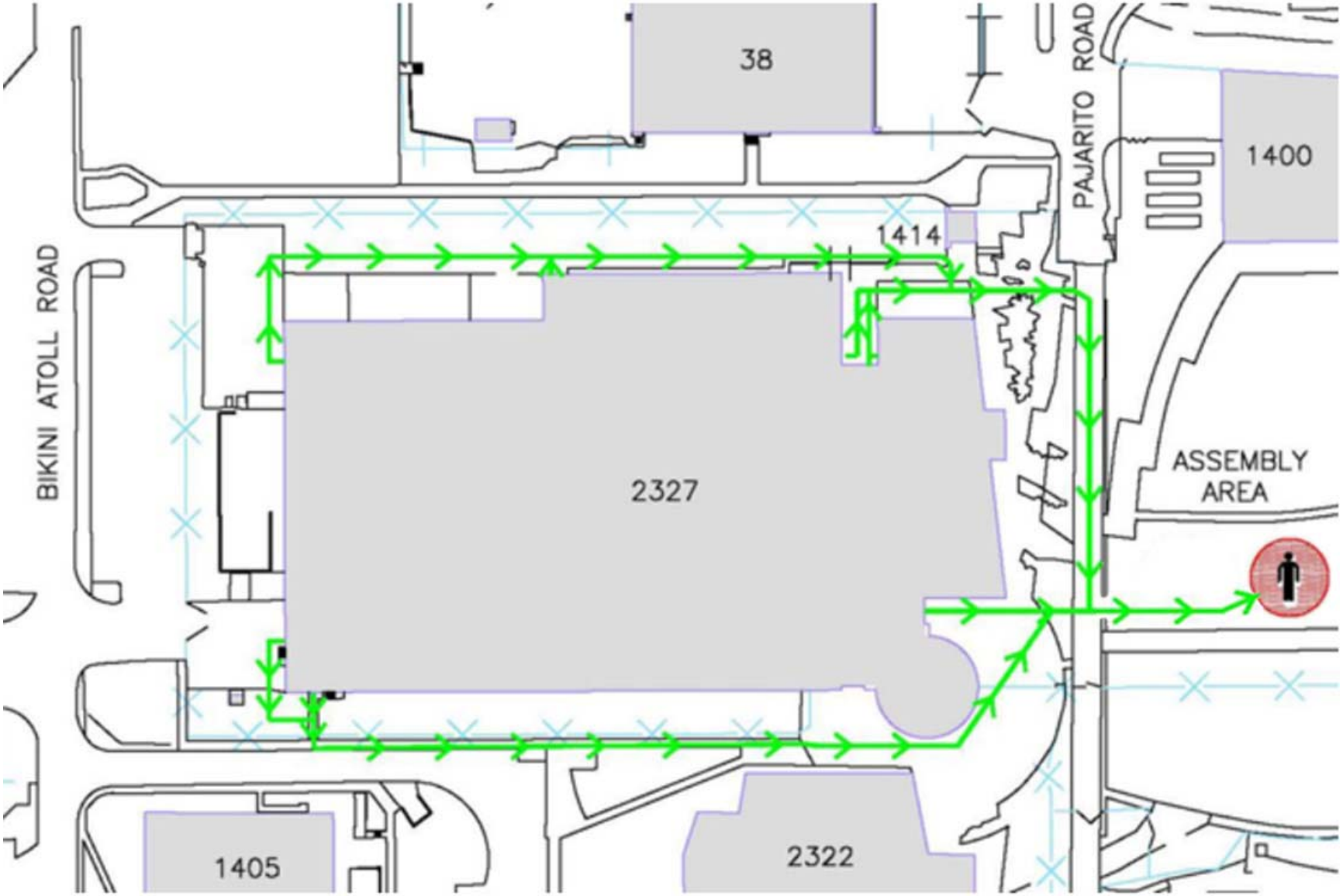
Tour Closeout

15a. At the main lobby of the NISC, summarize the tour and answer any questions.

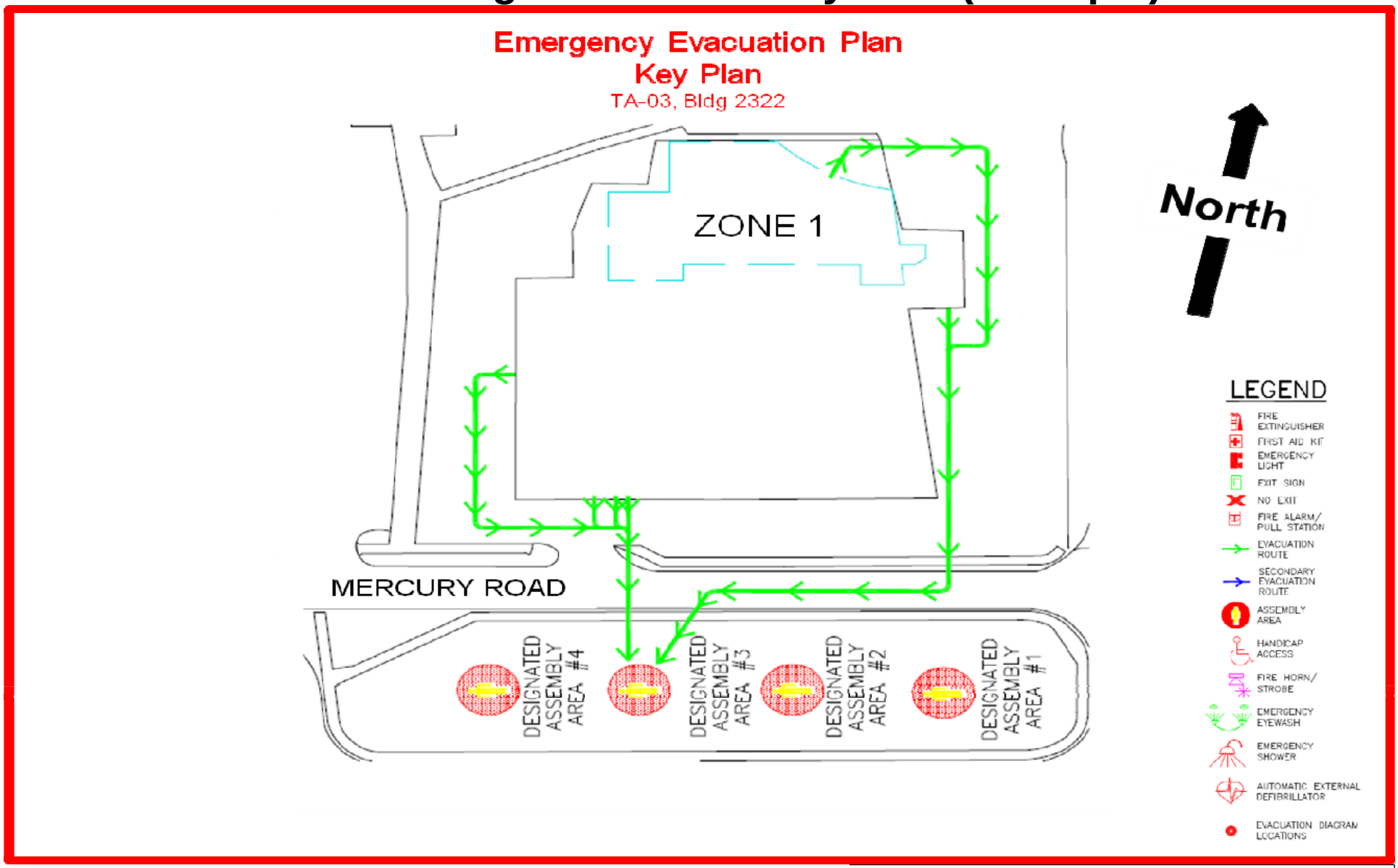
15b. Make sure the roster has been signed—the tour leader completes the date and time and signs as “instructor.” Make a copy or scan of the roster for facility files to serve as a backup copy. Send the original to Victor Rutherford at J596, or arrange to have it picked up. Save a copy of the tour checklist for facility records (SI-ITS does not need a copy of this).

15c. Close out any escort paperwork and notify building security, as appropriate.

SCC Building Evacuation Key Plan

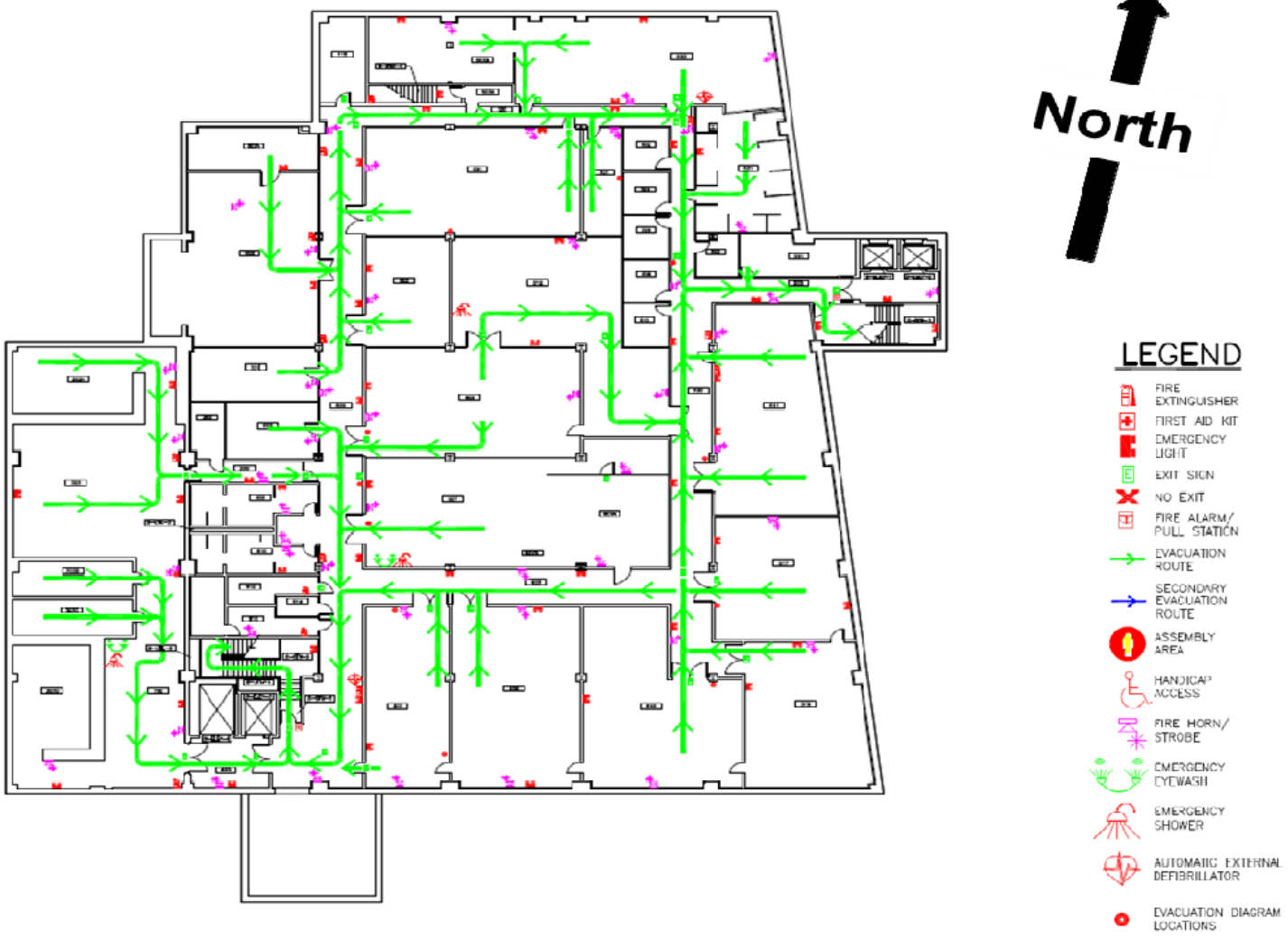


NISC Building Evacuation Key Plan (Example)



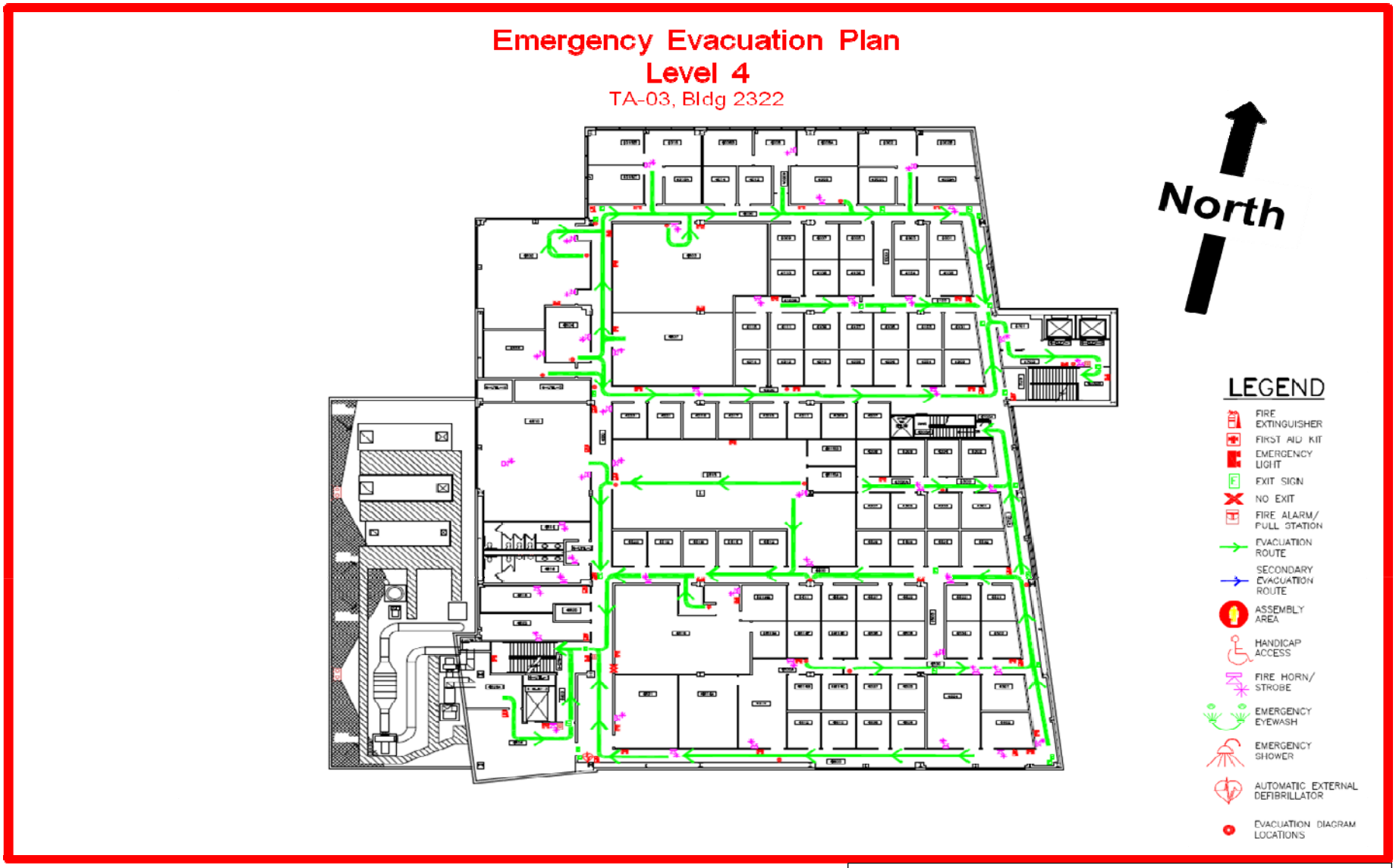
Classification: Unclassified Reviewer: Edward Seawalt Date: 11/08/2010

NISC Basement Evacuation Routes

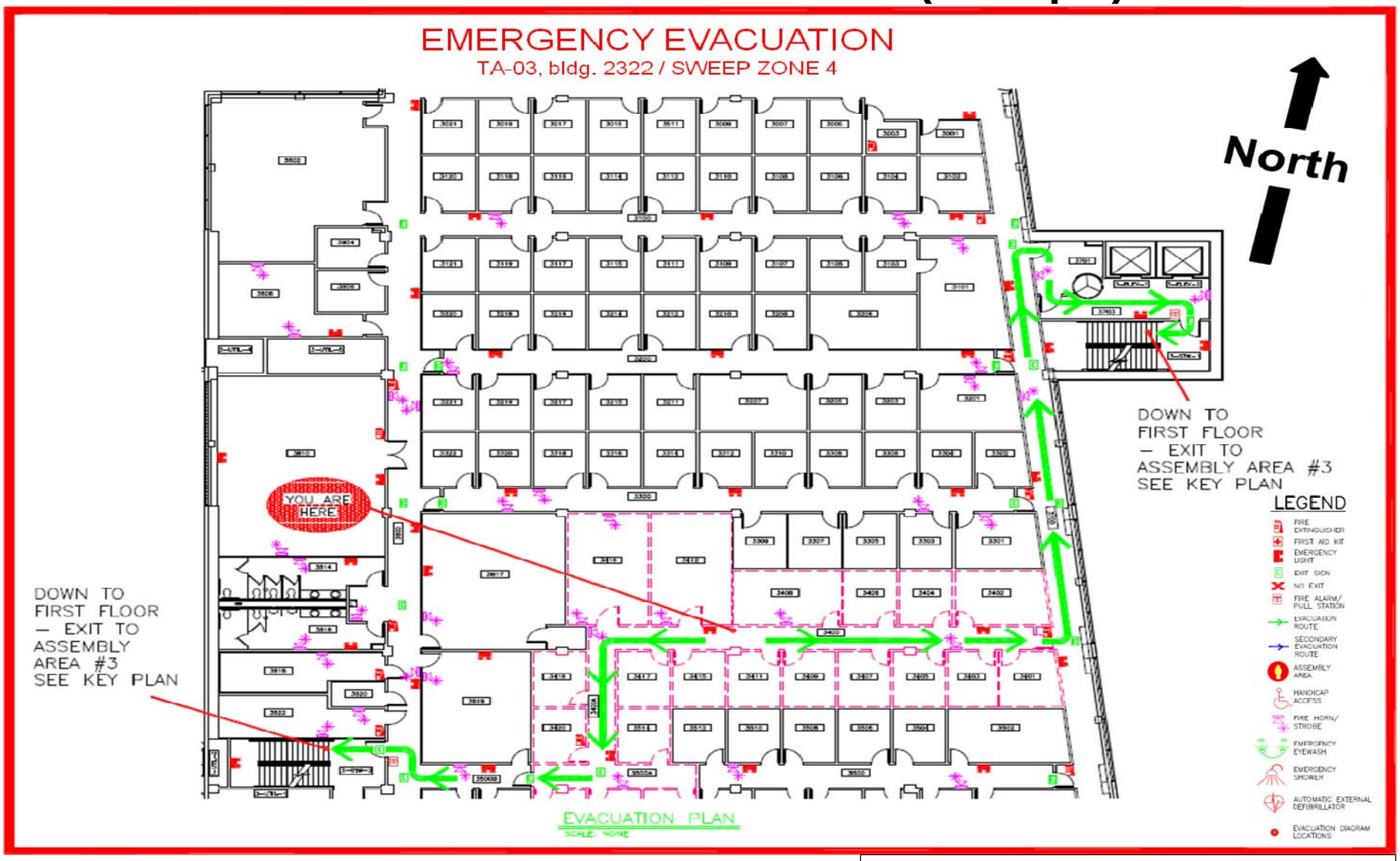


Classif cation: Unclassified Reviewer: Edward Seawalt Date: 08/27/2010

NISC LEVEL 4 Evacuation Routes

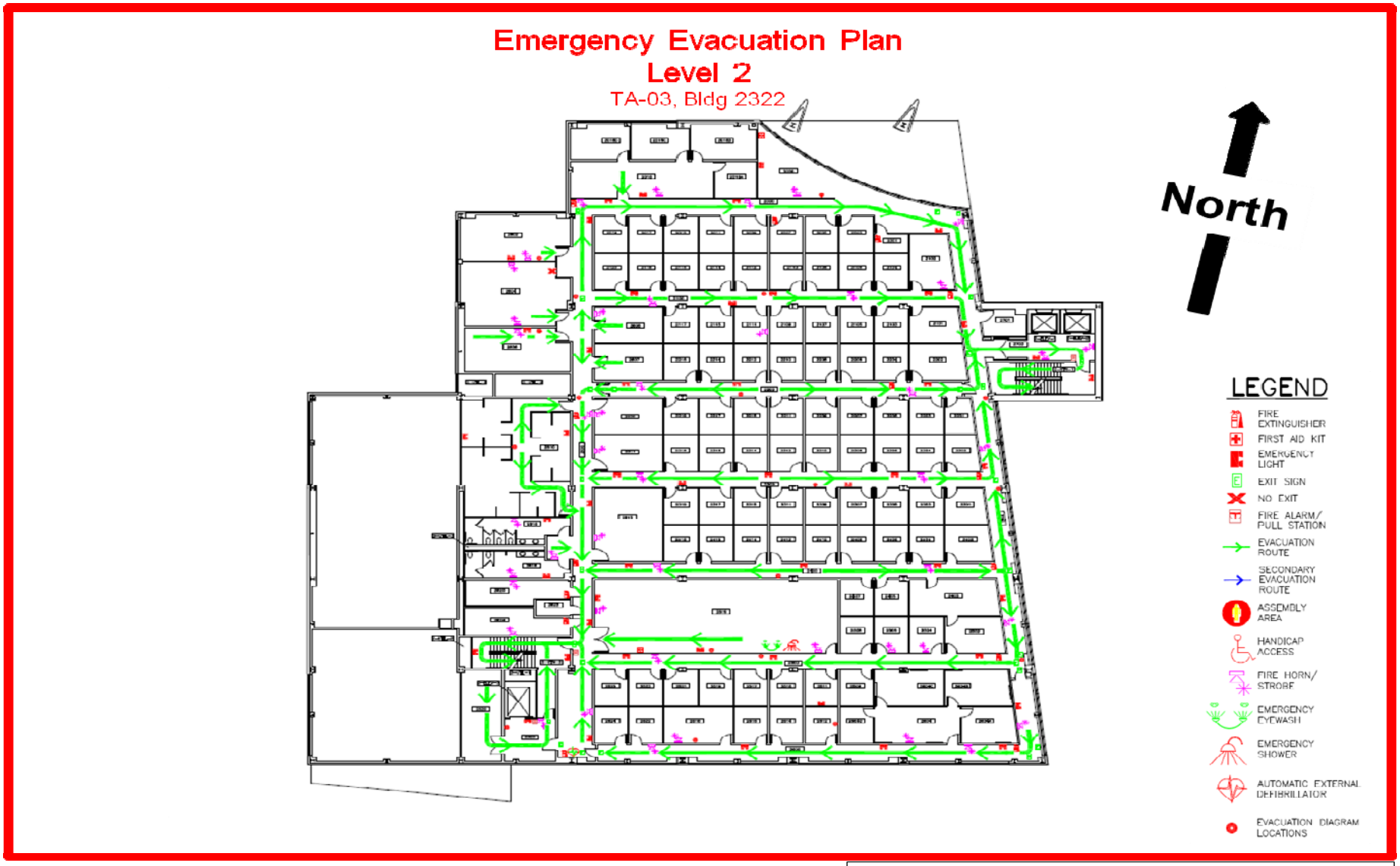


NISC LEVEL 3 Evacuation Routes (Example)



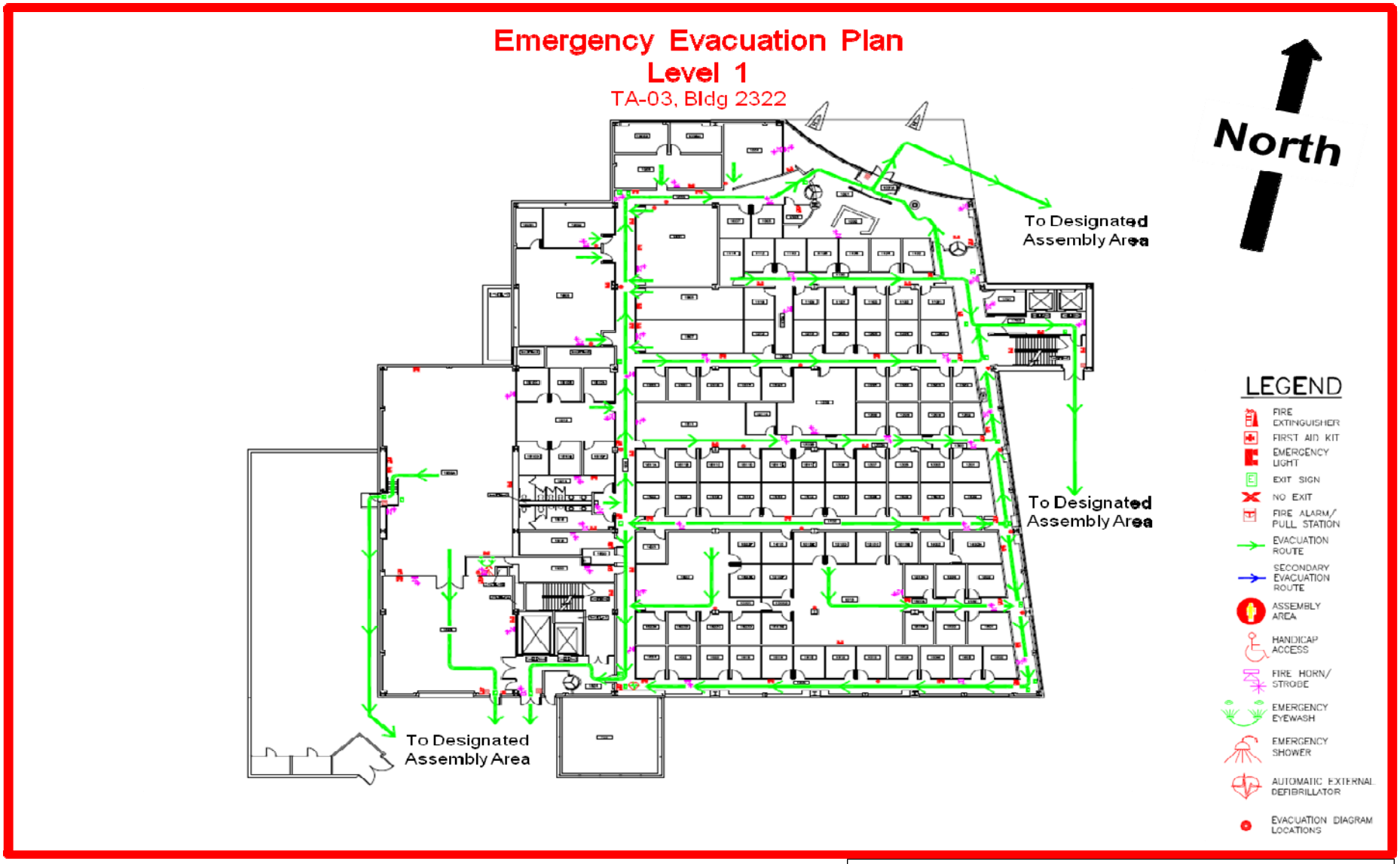
Classification: Unclassified Reviewer: Edward Seawalt Date: 01/31/2011

NISC LEVEL 2 Evacuation Routes



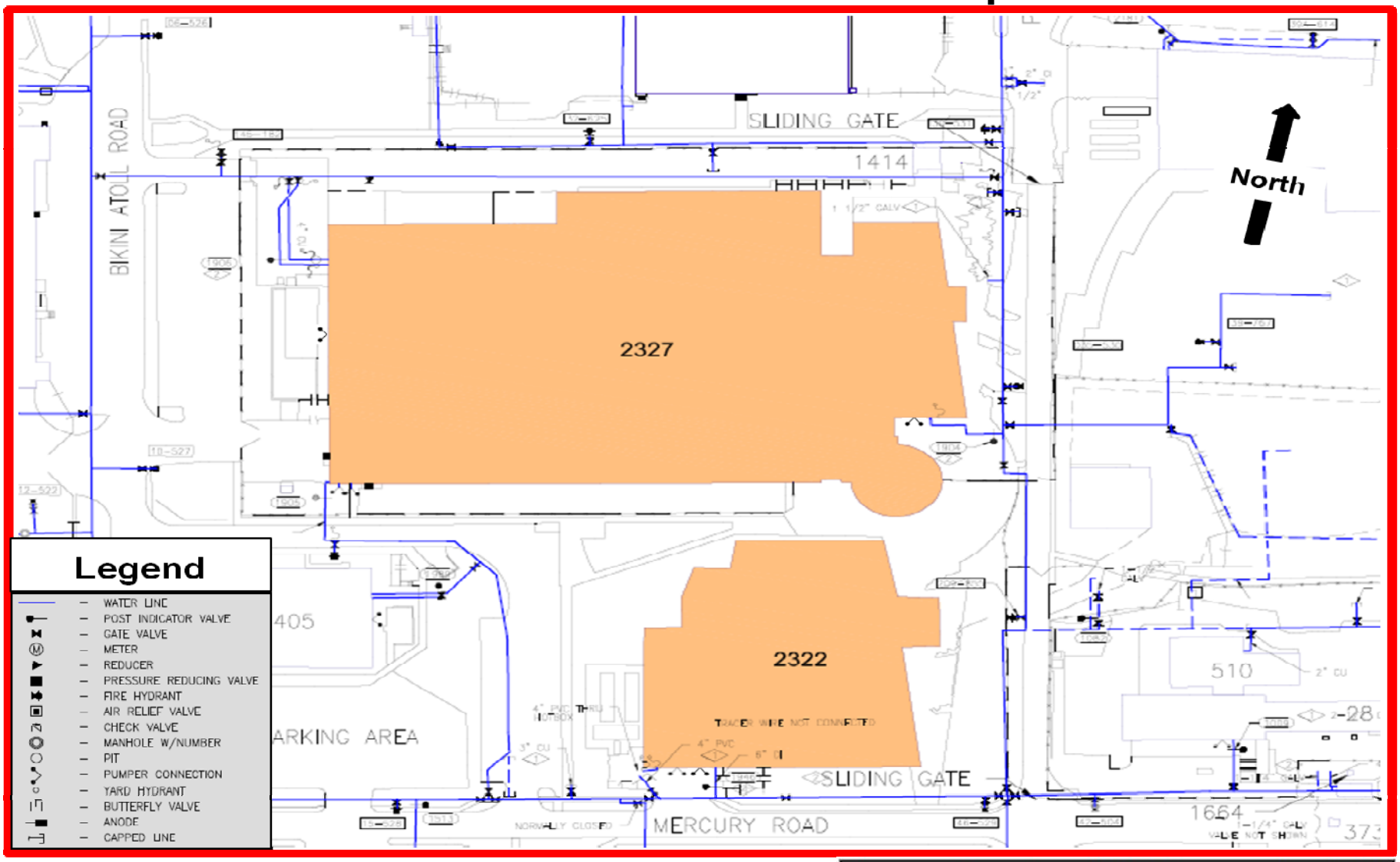
Classification: Unclassified Reviewer: Edward Seawalt Date: 11/08/2010

NISC LEVEL 1 Evacuation Routes



Classification: Unclassified Reviewer: Edward Seawalt Date: 11/08/2010

SCC/NISC Fire Protection Map



Classification: U Reviewer: Harold Salazar Date: 4-5-2011