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Data Center Services

TSDC (DCL) Data Center Fire Suppression Procedures

October 9, 2023

Summary:

This document is intended for personnel who have access to the data center in DCL. The objective is to provide an awareness of the fire suppression system and locations of the equipment. The TSDC personnel are trained to deal with the fire suppression system in the event of activation due to fire. If an alert is activated, it is **strongly** recommended that everyone leave the data center **immediately**. The system is designed to provide two stage stages of notification. A single smoke detector will activate the **1st alarm** horn/strobes. **The agent release sequence has not begun at this stage**. If a second adjacent smoke detector is activated, the **2nd Alarm** horn/strobes will be activated and the **30 seconds agent delay timer** has begun. The room will be filled with chemicals to extinguish any fire by depriving it of oxygen. The agent does not pose a health hazard to an individual when exposure is **less than five minutes**, the chemical is toxic but not deadly. It is not corrosive and it could destroy computers or any electronics in the data center.

Prolonged overexposure may cause potential health effects:

Central nervous system depression with dizziness, suffocation, if air is displaced by vapors. Based on animal data, the component material, **Ethane** and **Pentafluoro** may cause irregular heart beat with a strange sensation in the chest: “Heart Thumping”, apprehension, lightheadedness, feeling of fainting, dizziness, weakness.



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TSDC Fire Suppression Procedures

There are two TSDC Fike 25 Fire Suppression and Detection systems that protect the TSDC (DCL) Data Center spaces. These systems will release the fire-retardant agent (ECARO 25, or FM 25) 30 seconds after the alarms go off. The two systems are separate and do not interact simultaneously.

The systems are in rooms 1440 and L441.

- To discharge the Fike system in 1440 or in L441, two smoke detectors must trip in two different zones within the same area (1440 or L441).
- The first alarm sends an alarm to UIUC Public Safety and the Urbana Fire Department. When the alarm is tripped you will hear an alarm sound and the strobe light in the computer room and control room will be activated. The first alarm is triggered by one smoke detector in alarm condition.
- You **have 30 seconds** after the 2nd alarm is sounded to abort/disarm the release of the agent. The second alarm is triggered by the second smoke detector in alarm condition.
- There are abort stations (yellow push buttons) and manual activation stations (red push buttons) located by each door in the L441 and 1440 data center spaces.
- You can delay the release of the agent by pressing the **yellow** button on the abort stations. Depressing the abort button only stops the clock on the release of the agent. When the button is released, restarts 30 seconds timer count down. It is recommended that you hold the button until you have someone at the Fike Controller panel to reset the system. If you are across the room, you may not have enough time to get across the room before the agent is discharged.
- You can manually discharge the fire suppression by removing the safety ring and pressing the **red** button at one of the manual release stations in the server rooms. This will discharge the agent immediately.
- If the system discharges, the system will automatically shut down the HVAC supply in the data center space(s) in which the system discharges.
- **If you are in any of the two areas when the system discharges, exit the room immediately and close the doors to the data centers.**
- If the Fike system discharges, the agent will create a fog like environment and slowly clear out. The data center is to remain shut until deemed safe by the fire department personnel.



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- The agent is not considered harmful, though it can still produce toxic by-products if an open flame is present. Occupants in the space should exit quickly when a fire suppression system is activated.
- Call the UIUC Public Safety immediately at 911.
- Do not re-enter the room until the agent has dissipated and all clear is given and the agent has dissipated. Once all clear is given, you should be able to enter the room after fifteen minutes.

UIUC Facilities Management Phone Numbers for notification

Emergency dial 911

UIUC F&S (Shop 25) 217-333-0340 Notify of a Fire Suppression Outage

UIUC Public Safety 217-333-1216

TSDC on-call (217)552-8387

How to disarm/abort the DCSS (DCL) Fike Fire Suppression System

1. Call Public Safety, 333-1216, and inform them the system will be disabled.
 - a. DCL Room L441: trouble 1-55, alarm 1-56
 - b. DCL Room 1440: trouble 1-59, alarm 1-60
2. Call F&S, 333-0340, ask for Shop 25 and inform them.
3. Turn the key on Suppression Agent Switch to Disarmed position, before proceeding to the next step. This physically stops suppression agent from being dumped.
4. Press Acknowledge button on panel to acknowledge alarms.
5. System will now be in a disabled state.

How to arm/enable the TSDC (DCL) Fike Fire Suppression System



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1. Call Public Safety, 333-1216, and inform them the system will be enabled.
 - DCL Room L441: trouble 1-55, alarm 1-56
 - DCL Room 1440: trouble 1-59, alarm 1-60
2. Call F&S, 333-0340, ask for Shop 25 and inform them.
3. Clear all alarms by pressing the reset button on the panel, this may take up to 1 minute to clear the alarms.
4. **DO NOT ENABLE THE SYSTEM WHEN ANY ALARMS ARE PRESENT. THIS COULD CAUSE THE AGENT TO DUMP.**
5. Press the Acknowledge button on the panel if needed.
6. Once alarms are cleared, turn the key on the Suppression Agent Disarmed Switch to Armed position and press the reset button on the panel. This will physically enable the agent tank(s).
7. Call Public Safety, 333-1216, and inform them the system has been enabled.

Locations of Fire Suppression control panels, manual pull stations, & abort release stations.

- 1) DCL Room 1440 (Primary Data Center) is protected by the Fike Fire Suppression system.
 - a. The system control panel is in 1452 (Data Center Operations) small closet on the south side of this space.
 - b. The manual pull stations are in the following areas in room 1440:
 - i. Attached to Fike tank location, north wall of 1440.
 - ii. At each entrance, M3 and M1 (**red** buttons)
 - c. The abort stations are in the following areas in the room.
1440.
 - i. To the left and inside of the M3 exit door of 1440, near the fire extinguisher (yellow button).
 - ii. To the right and inside of the M1 exit door in 1440 (**yellow** button).
- 2) Room L441 (primary data center) is protected by the Fike Fire Suppression system.



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- a. The L441 Fike system uses the control panel in 1452.
- b. The manual pull stations are in the following areas in room L441.
 - i. L441A, the UPS room, attached to tank.
 - ii. At each entrance/exit (**red** button)
- c. The abort release stations are in the following areas in room 1440, L441.
 - i. At each entrance/exit (**yellow** button)



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Cheetah Main Panel Open Position.JPG (4000x3000)



This main control panel in 1452 can be found in the closet



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Strobe lights and alert level in 1452.JPG (4000x3000)





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Red and Yellow Button at the left side of 1440 double doors.JPG (4000x3000)



This is located in 1440 left side near the double doors



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manual cutoff 1440.JPG (4000x3000)



Manual activation/deactivation override switch near the tank in room 1440



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Tank 1440.JPG (4000x3000)





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M3 exit 1440 .JPG (4000×3000)



This is located on the left side of 1440-M3 exit door

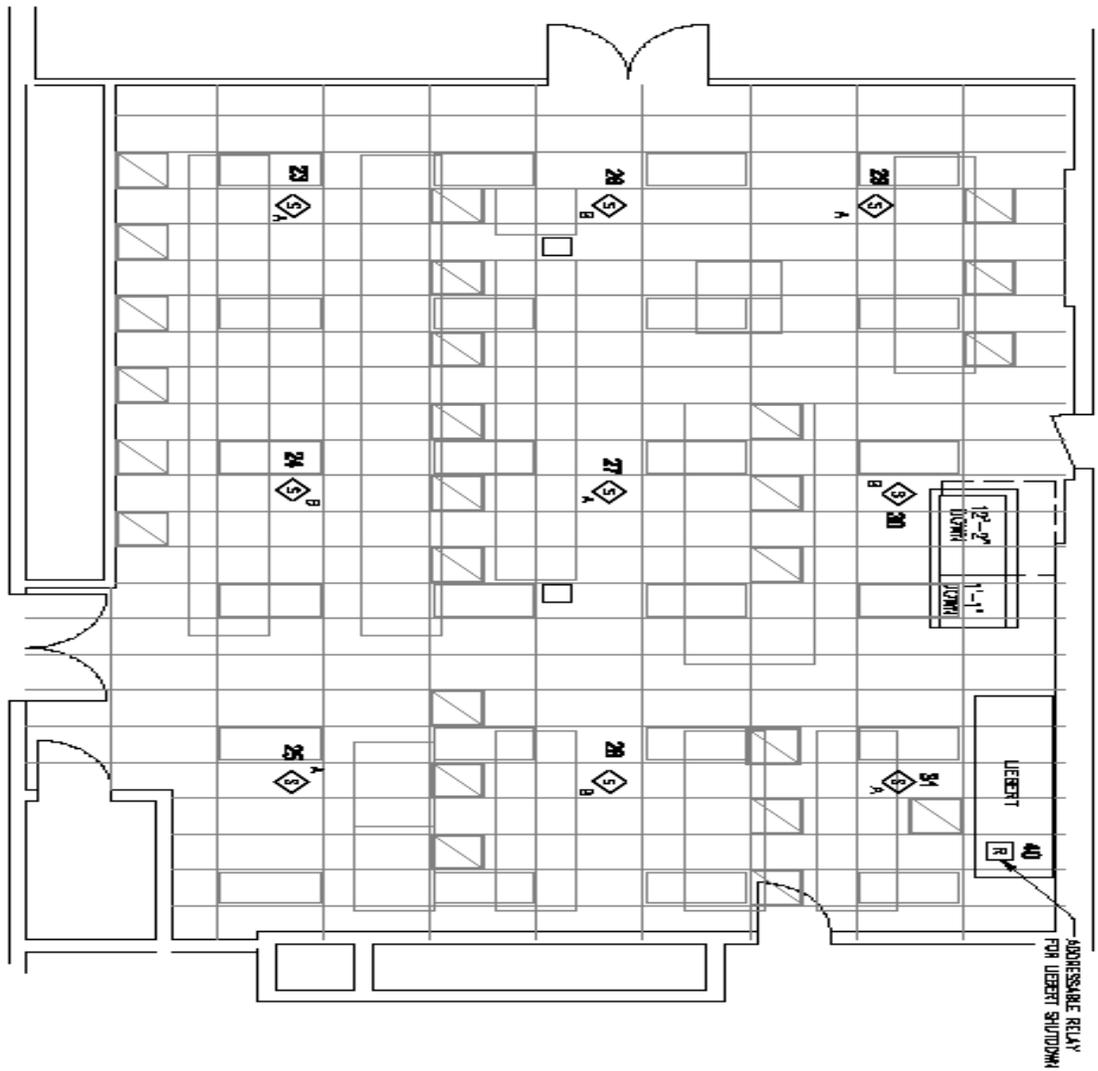
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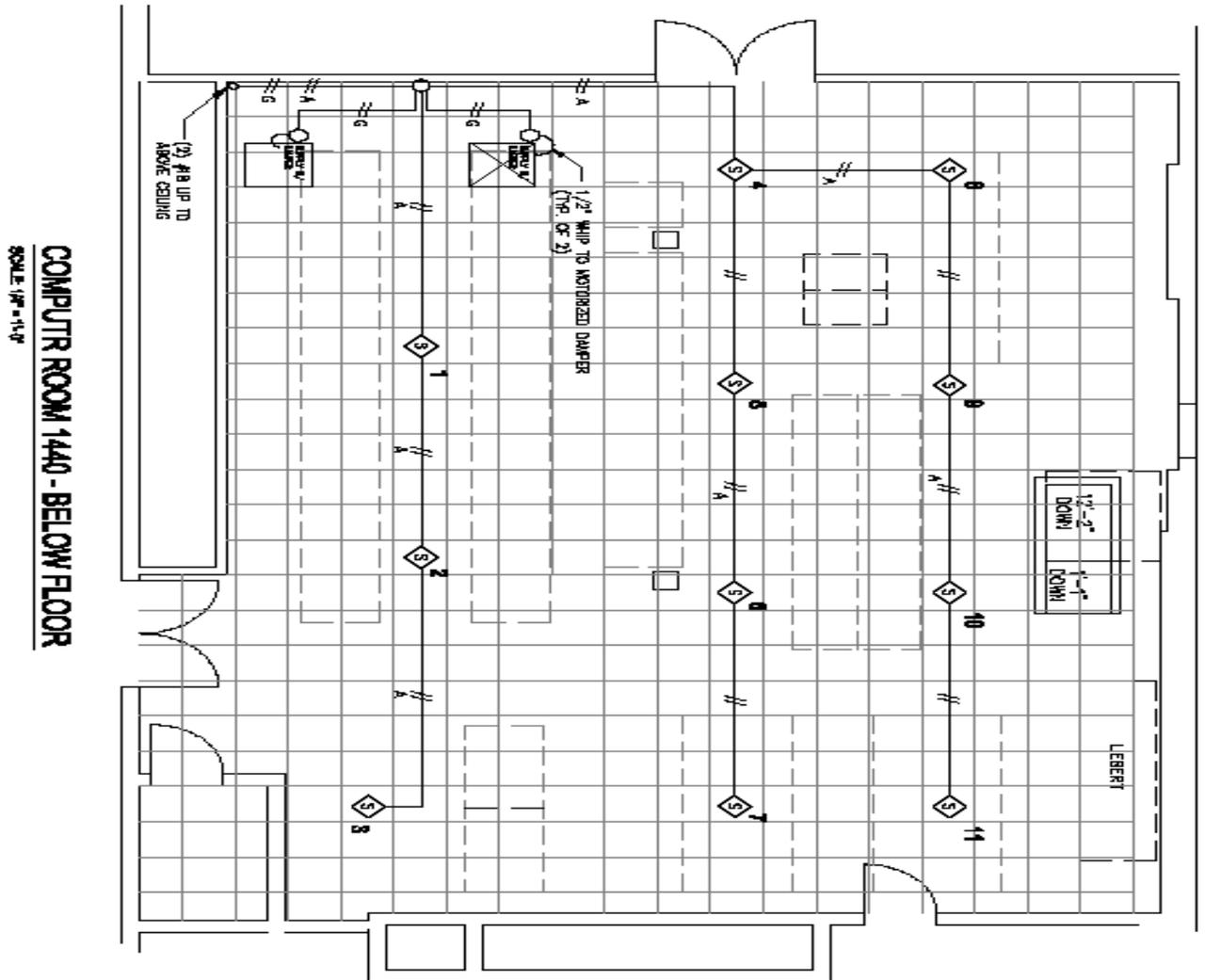
COMPUTER ROOM 1440 - ABOVE CEILING DETECTION
SCALE: 3/8" = 1'-0"



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L441 main door.JPG (4000x3000)



L441 Main Door

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L441 rear door.JPG (4000x3000)



This is located on the left side wall of L441 rear exit door



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L441 tank.JPG (3000x4000)



Fire Suppression Tank located in L441



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L441A manual override.JPG (4000x3000)





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L441A tank.JPG (3000x4000)



Fire Suppression tank in L1441A with manual activation/deactivation override switch

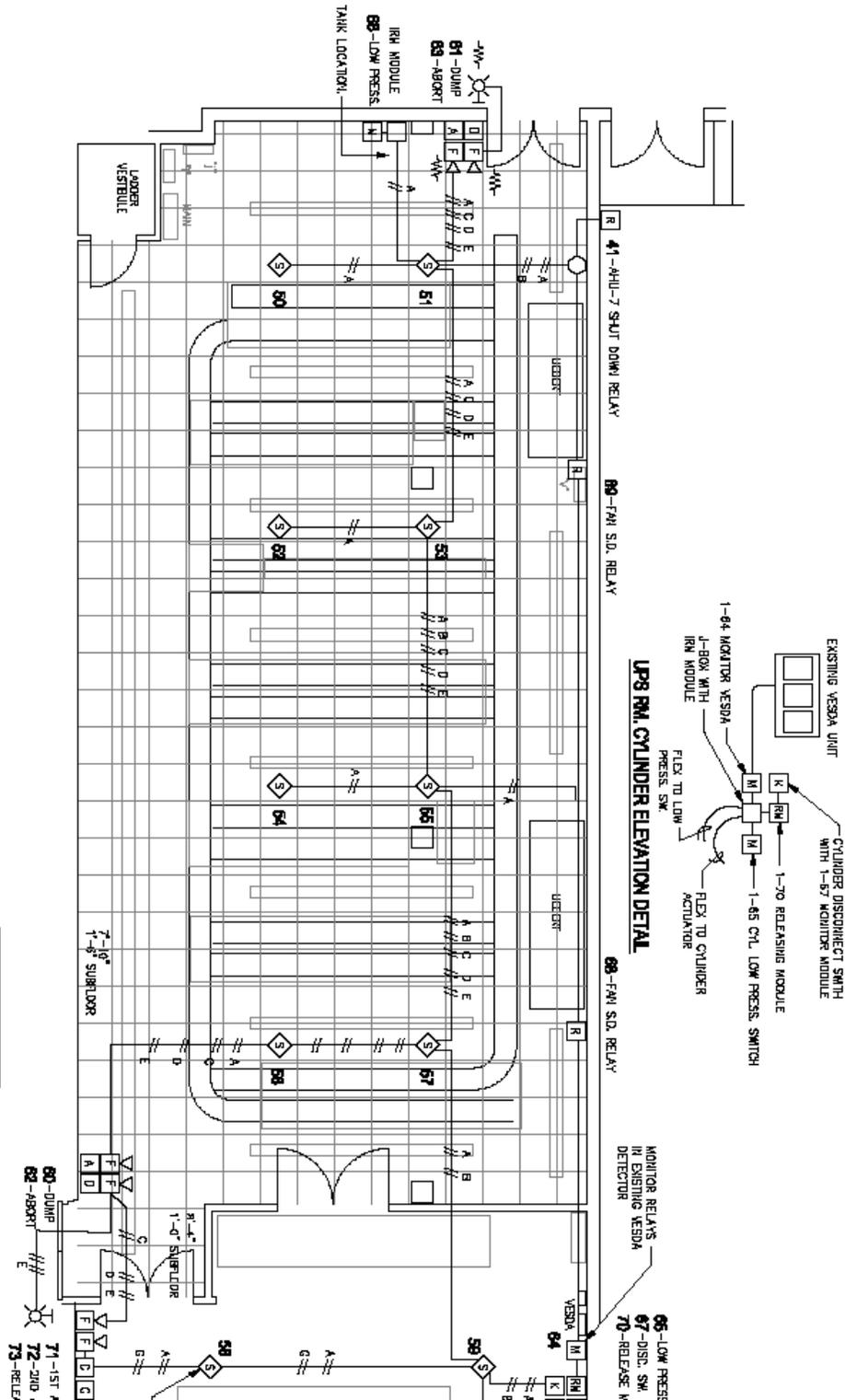
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COMPUTER ROOM L441 FLOOR PLAN
SCALE: 1/8" = 1'-0"

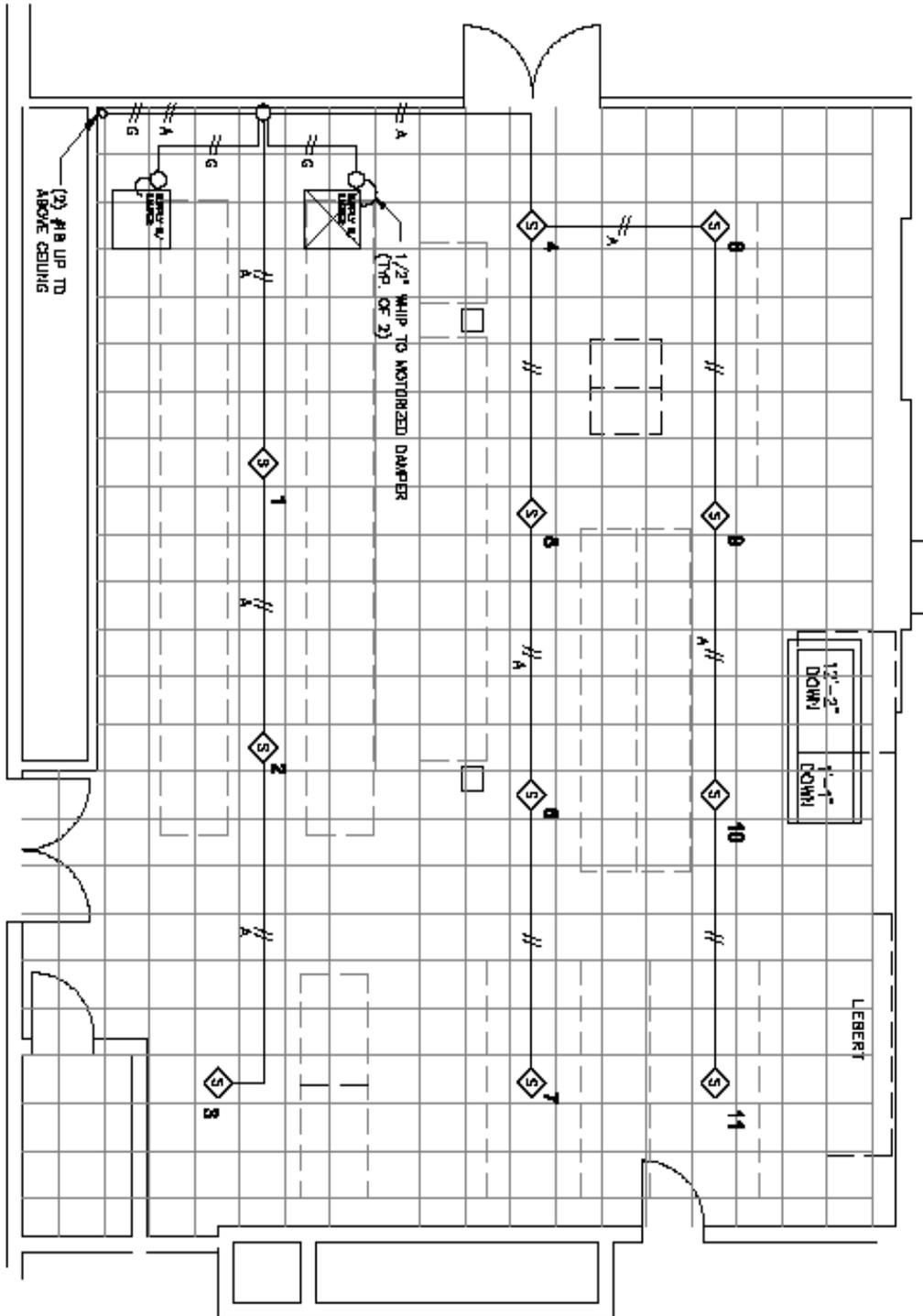
NOTE:
NO NEW DETECTION
UNDER RAISED FLOOR



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COMPUTR ROOM 1440 - BELOW FLOOR
SCALE: 1/8" = 1'-0"