



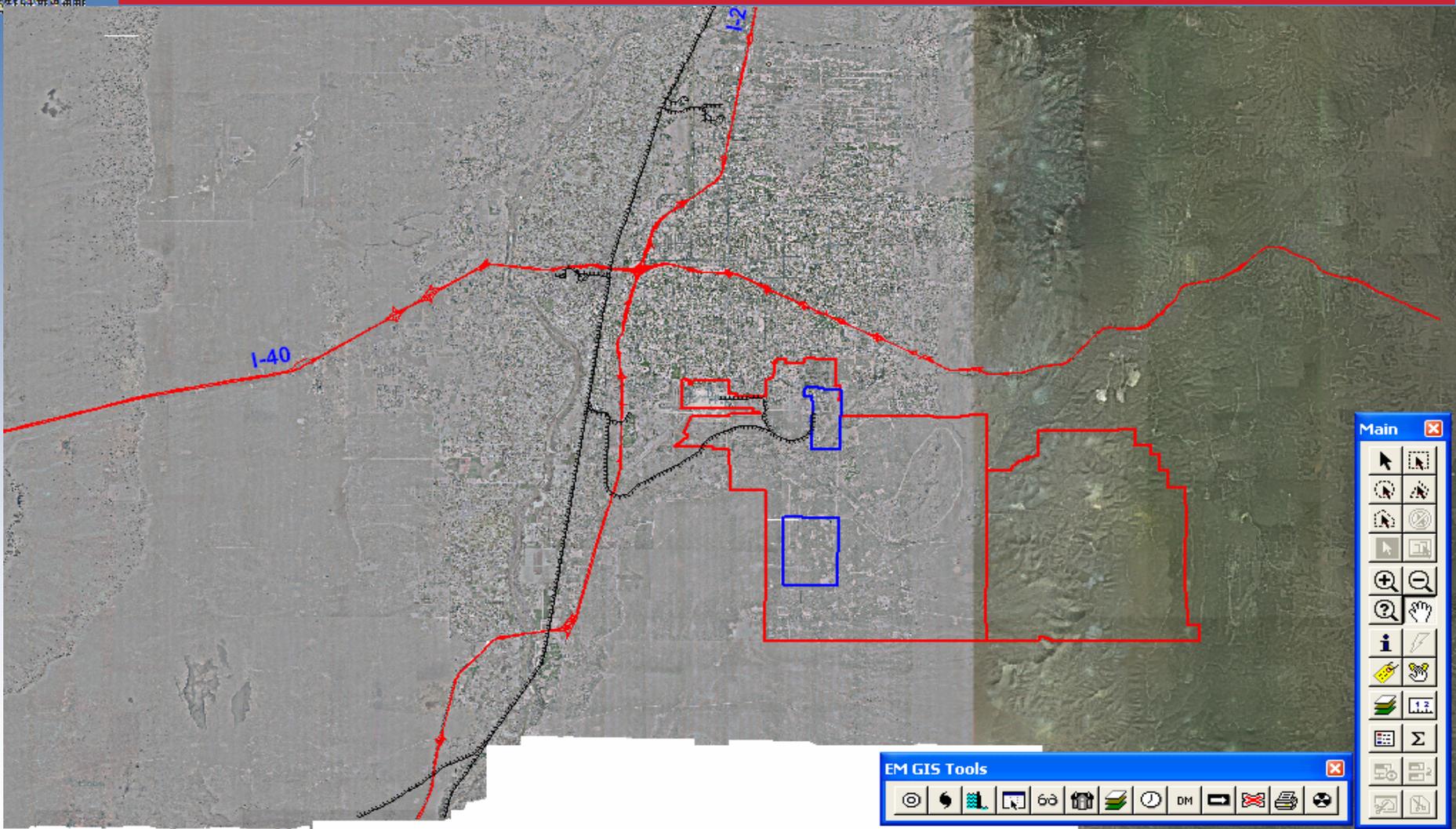
# New GIS Technologies at Sandia Labs

- **Incorporating Overflight Photography**
- **Bernalillo County Data**
- **Facilities Geo Data & Drawings**
- **MapInfo Mapping & Bentley CAD Software**

# New GIS Technologies at Sandia Labs

- **OrthoPhotography**
  - **Overflights cost approx. \$25k (every 2 years)**
- **Bernalillo County/City of Albuquerque Data**
  - **Roads/Streets, Parks, Schools, Hospitals**
  - **Railroads, Airports, Churches, Property Parcel IDs**
  - **Downloadable from web site (free)**

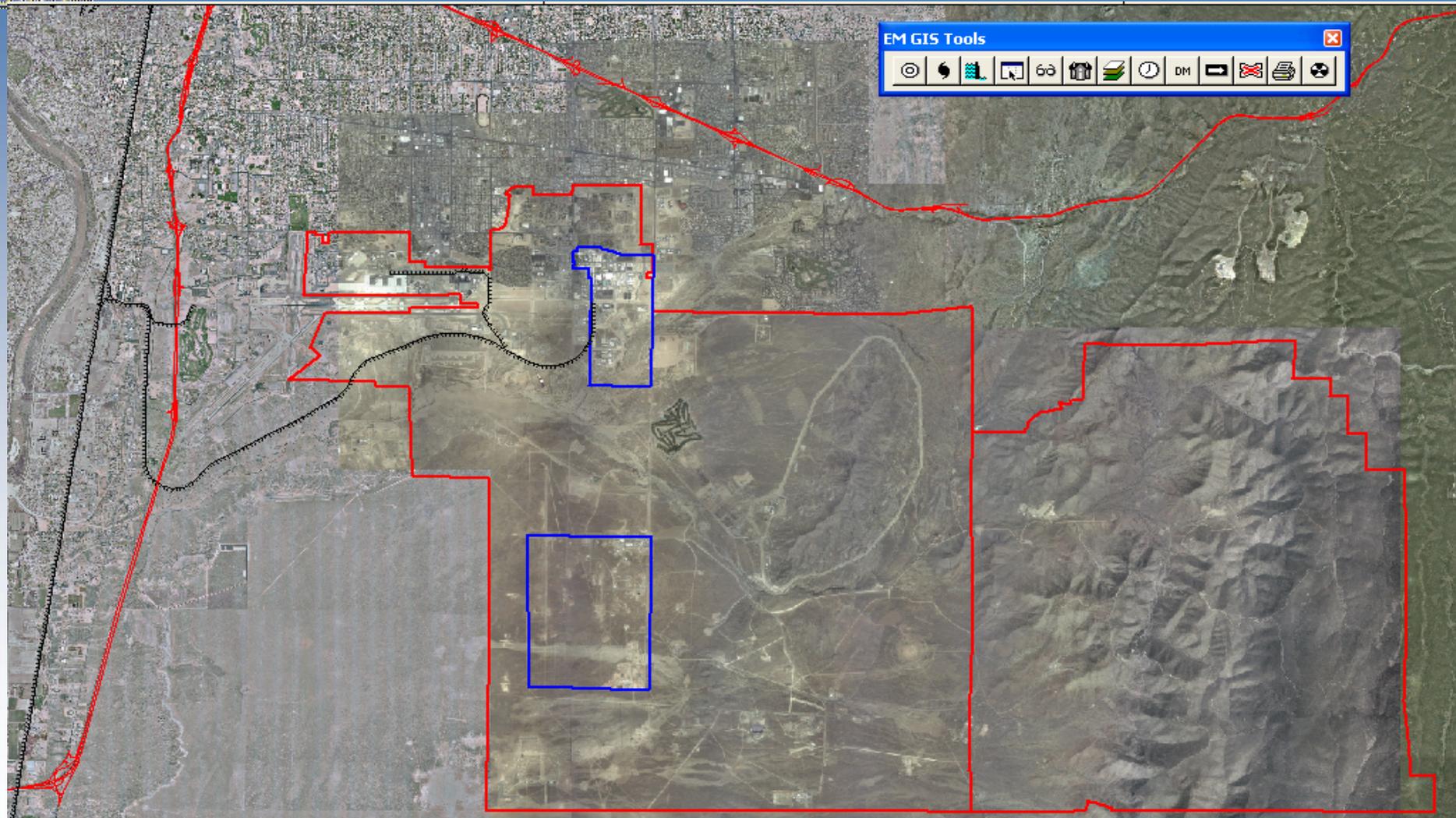
# Bernalillo County/Albuquerque Ortho



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# Kirtland AFB/Sandia Labs Ortho

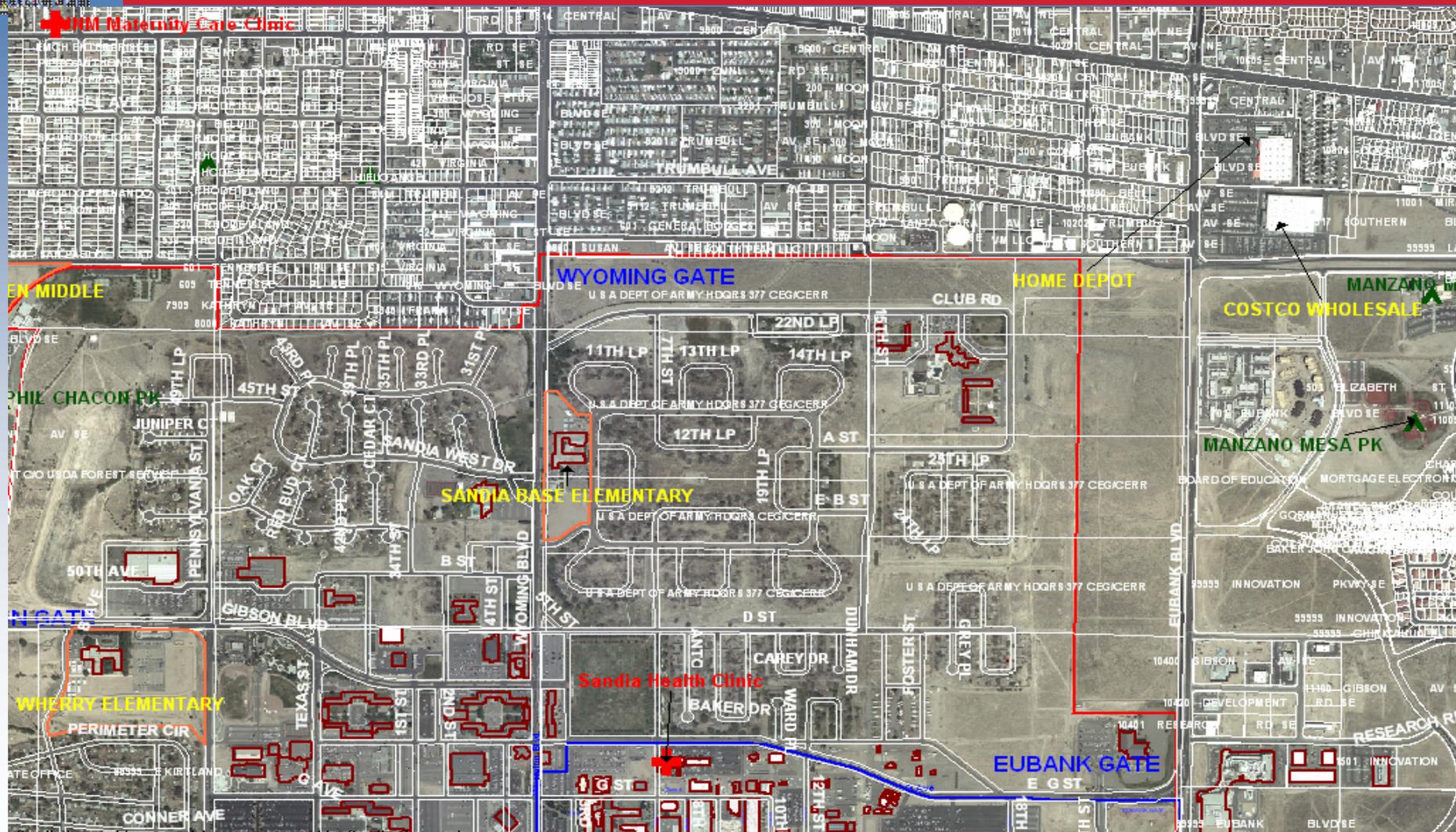


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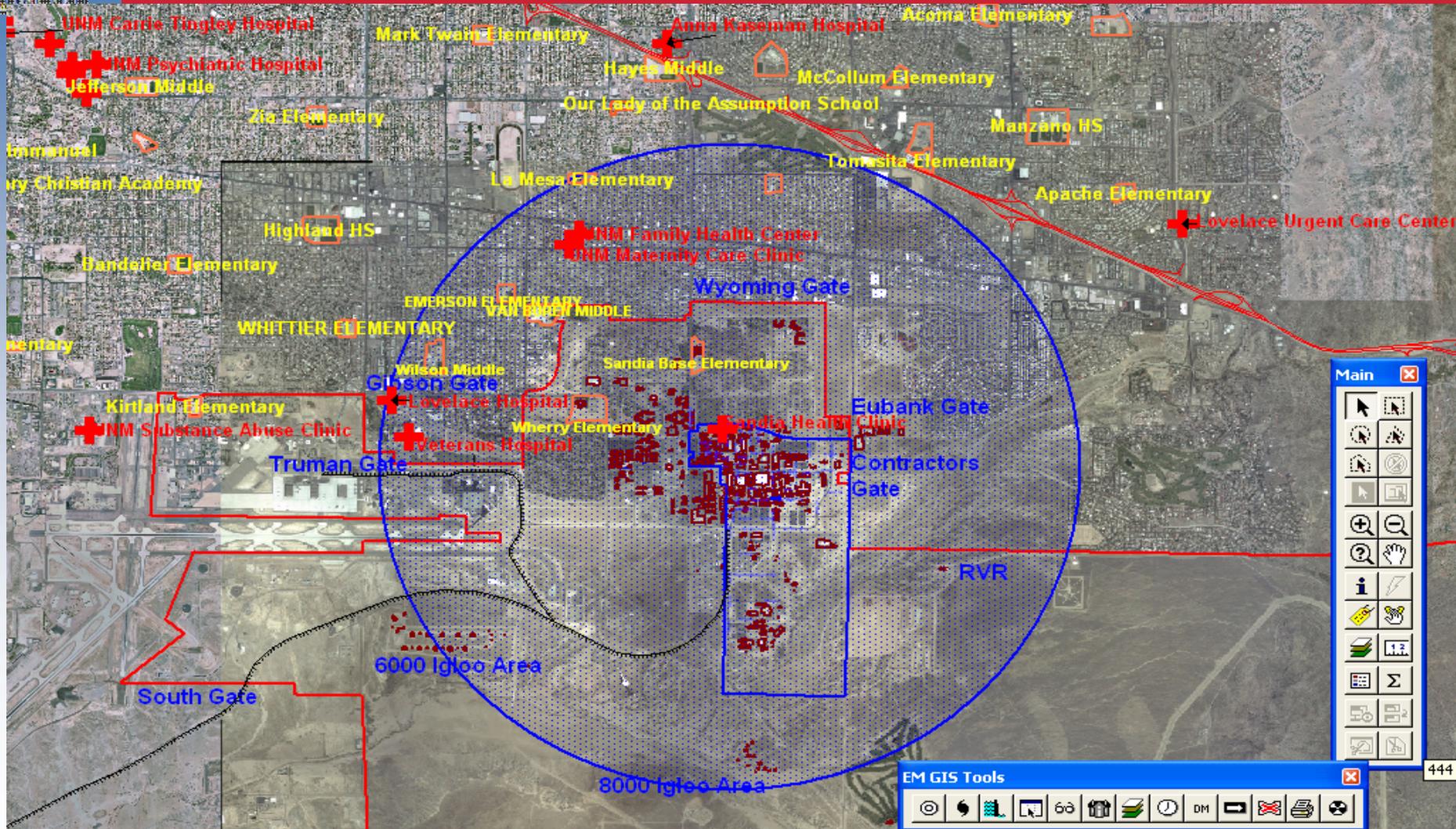
# City Streets/KAFB Ortho



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# Example of EPZ with City Features Ortho



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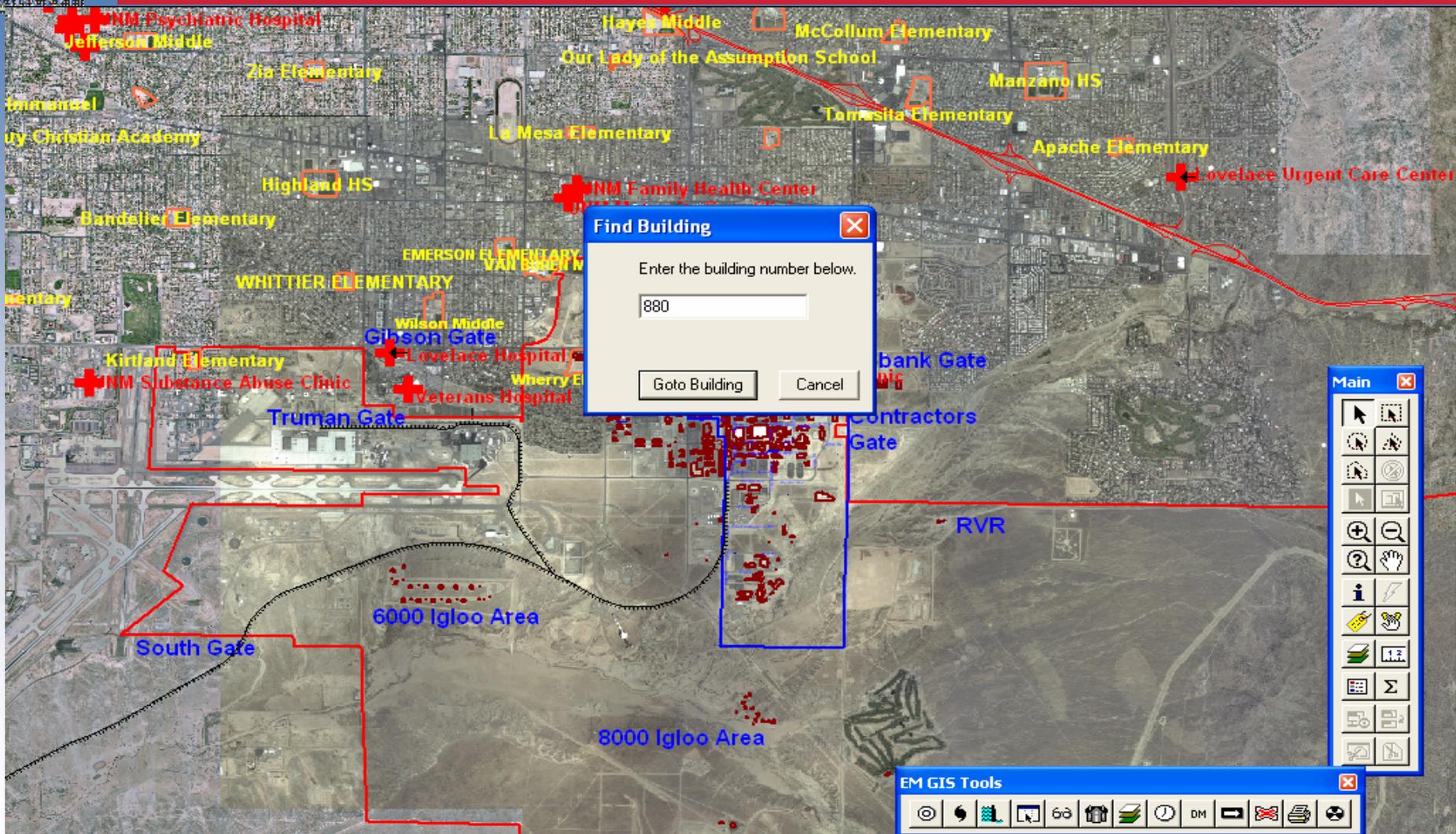
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# New GIS Technologies at Sandia Labs

- **Sandia Labs Buildings and Facilities**
- **Building footprints, roads, gates/security fences**
- **Facilities disciplines (gas lines, electrical, mechanical, etc.)**

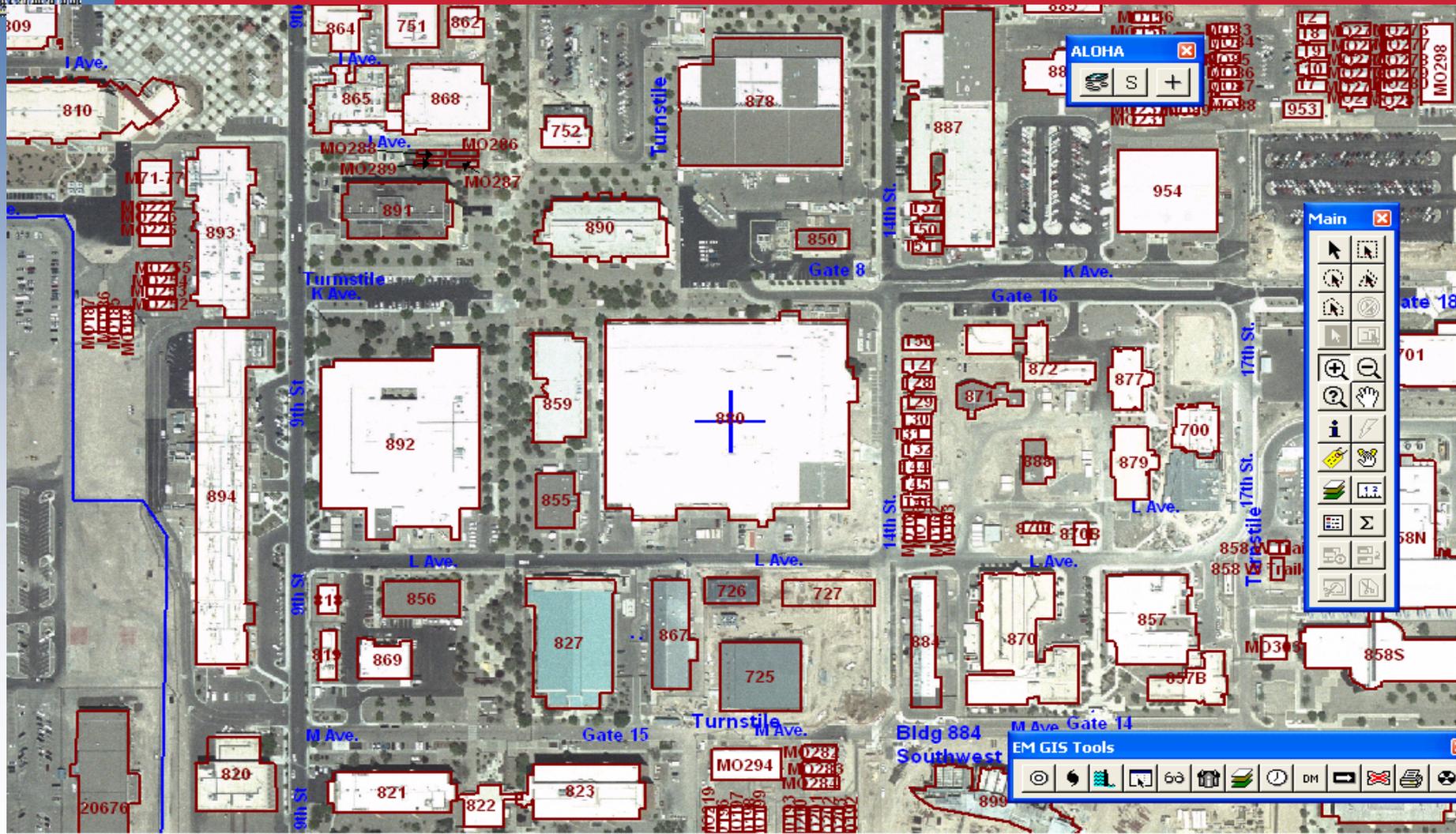
# Find a Sandia Building Tool



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# Find a Sandia Building Tool Results



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# Select GIS Layer(s)

## Layer Control

Select the Layers you want visible and de-select the ones you don't. Then click on the OK button.

### KAFB/SNL Data

- KAFB Crash Grid
- Tone Alert Receiver Grid
- DOE Property
- KAFB Property
- Building 858 EPZ
- Building 884 EPZ
- Building 893 EPZ
- Building 905 EPZ
- Building 958-959 EPZ
- Building 983 EPZ
- Building 6597 Aux. Hot Cell EPZ
- Building 6590 SPR. EPZ
- Building 6588 ACRR EPZ
- Building 6586 GIF EPZ
- Hydrogen vic. 858 EPZ
- Hydrogen vic. 878 EPZ
- Hydrogen vic. 893 EPZ
- Manzano Bunkers EPZ
- Propane vic. 6587 EPZ
- Propane vic. 9984 EPZ

- JP8 Lurance EPZ
- Electrical Power Lines Inground
- Electrical Power Lines Overhead
- Irrigation Lines
- Sanitary Sewage
- Steam Lines
- Storm Drainage Lines
- Gas Lines
- Roof Vents
- Power Manholes
- Chilled Water Lines
- Water Lines
- Security & Property Fencing
- Overhead Photos
- TAR Groups
- Limited Area Fence
- Building Legend
- Weather Towers
- PNM Electric Power Feed

### City/County Data

- Albuquerque Fire Dept. Zones & Districts
- County Fire Zones
- Airports
- Railroads
- Interstate Highways
- City/County Major Roads
- City/County Streets
- Private/Public Property Parcels
- Medical Facilities
- City/County Schools
- City/County Parks
- SNL City/County EPZ

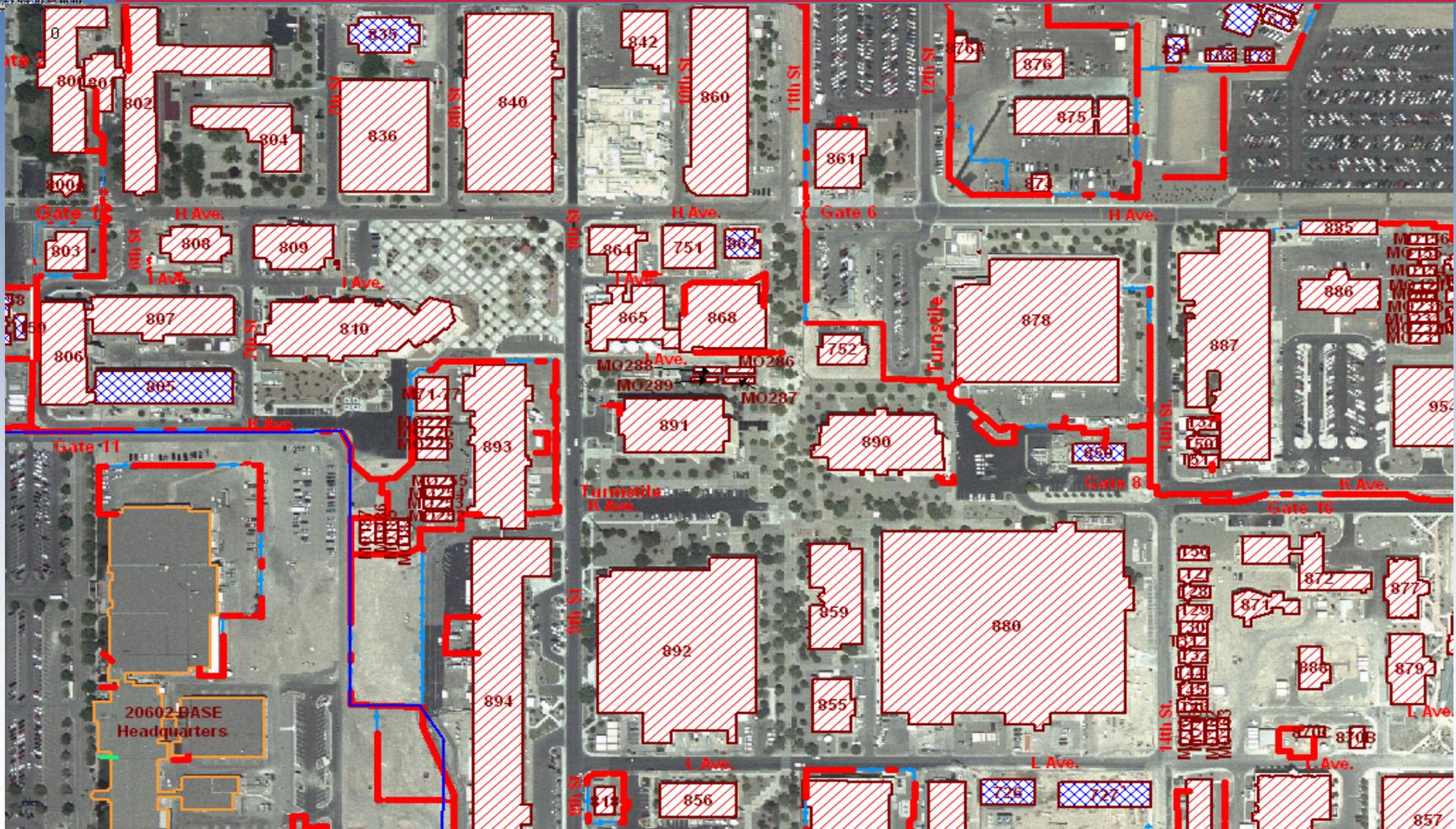
### Topography

- TA I, II, IV Area
- 6000 Igloos and South Runway Area
- KUMSC, TA III and V, Isleta Area
- North Runway and KAFB Main Area
- Manzano Lovelace ITRI Area
- Withdrawn Area

OK

Cancel

# Building Legend, Security Fencing Results



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- City/County Parks
- SNL City/County EPZ

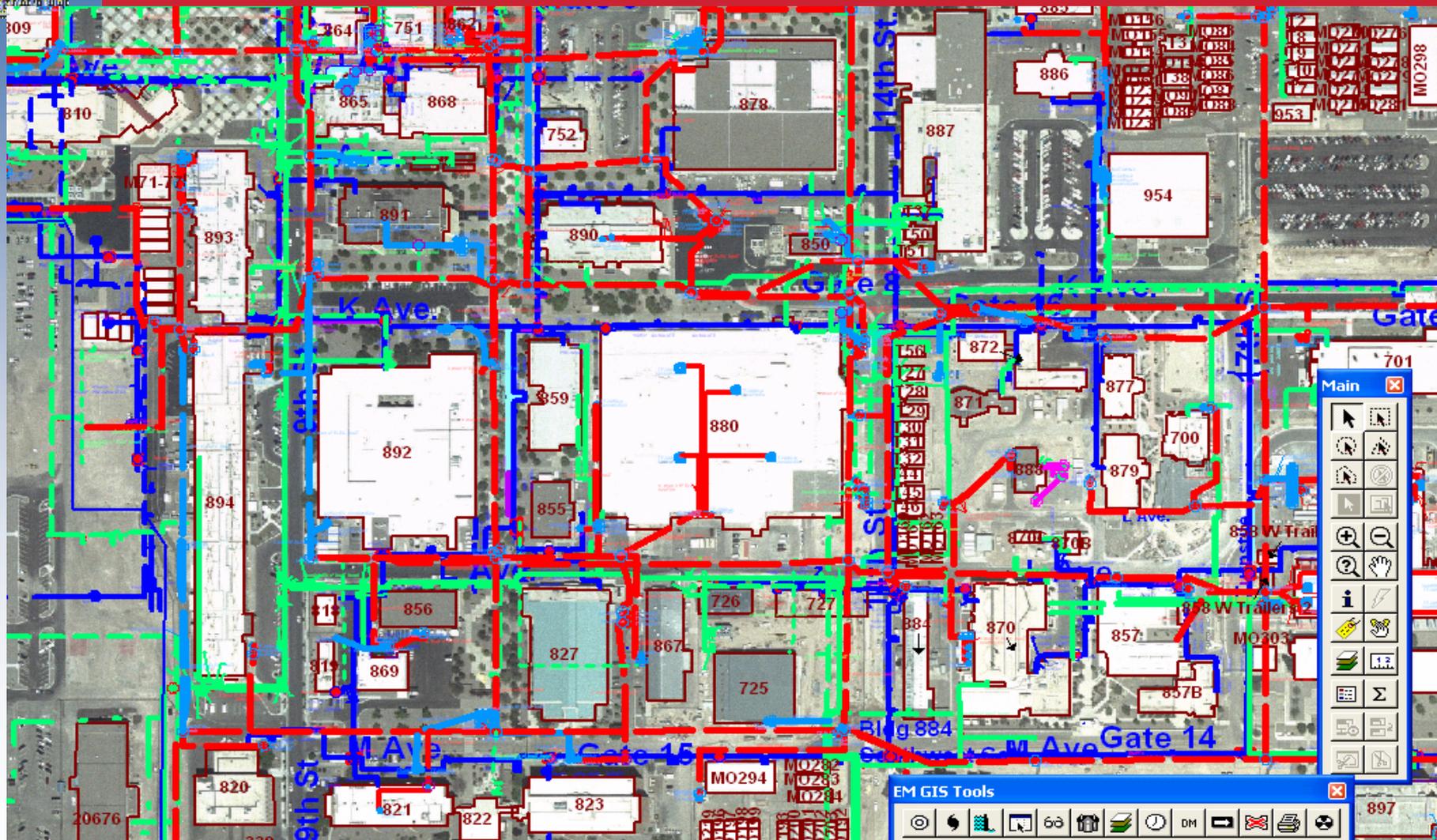
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- Withdrawn Area

OK

Cancel

# Steam, Gas, Electrical Lines Results



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# New GIS Technologies at Sandia Labs

- Tools for Protective Actions and Response
- Can be used by IC at scene
- Displayed on “Big Screens” in EOC

# Draw an Initial Protective Action Zone

**Protective Action Zone**

Draw an initial Protective Action Zone. Enter the ERPG2 (or PAG) distance, the IDLH (or TEL) distance, the distance unit of measure, the wind direction, then click OK.

ERPG2 or PAG Distance:

IDLH or TEL Distance:

(If not known re-enter ERPG2/PAG distance)

Distance Units:

- Feet
- Yards
- Meters

Wind Direction from the:

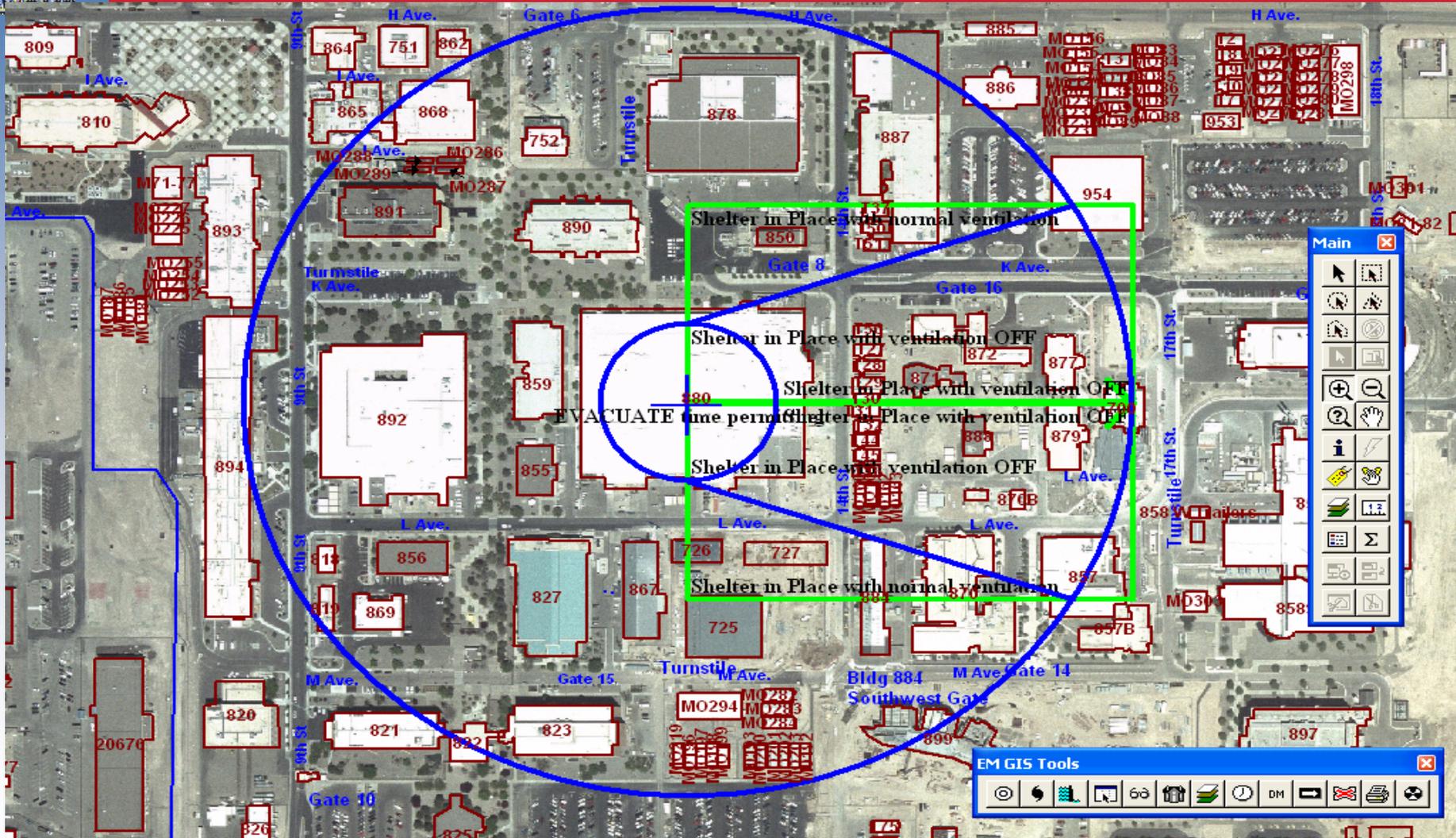
- North
- NorthEast
- East
- SouthEast
- South
- SouthWest
- West
- NorthWest

OK Cancel

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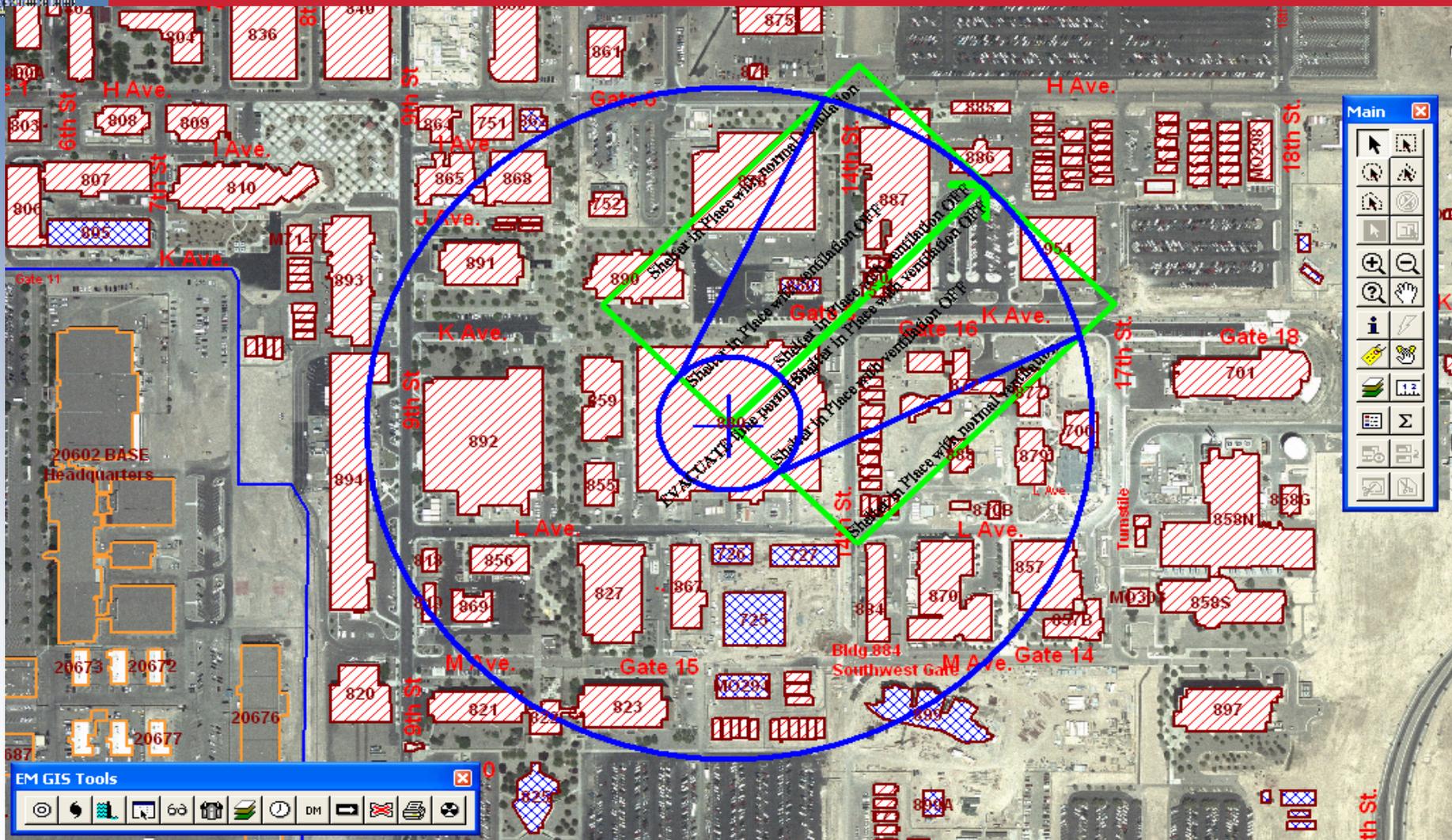
# Initial Protective Action Zone with west wind



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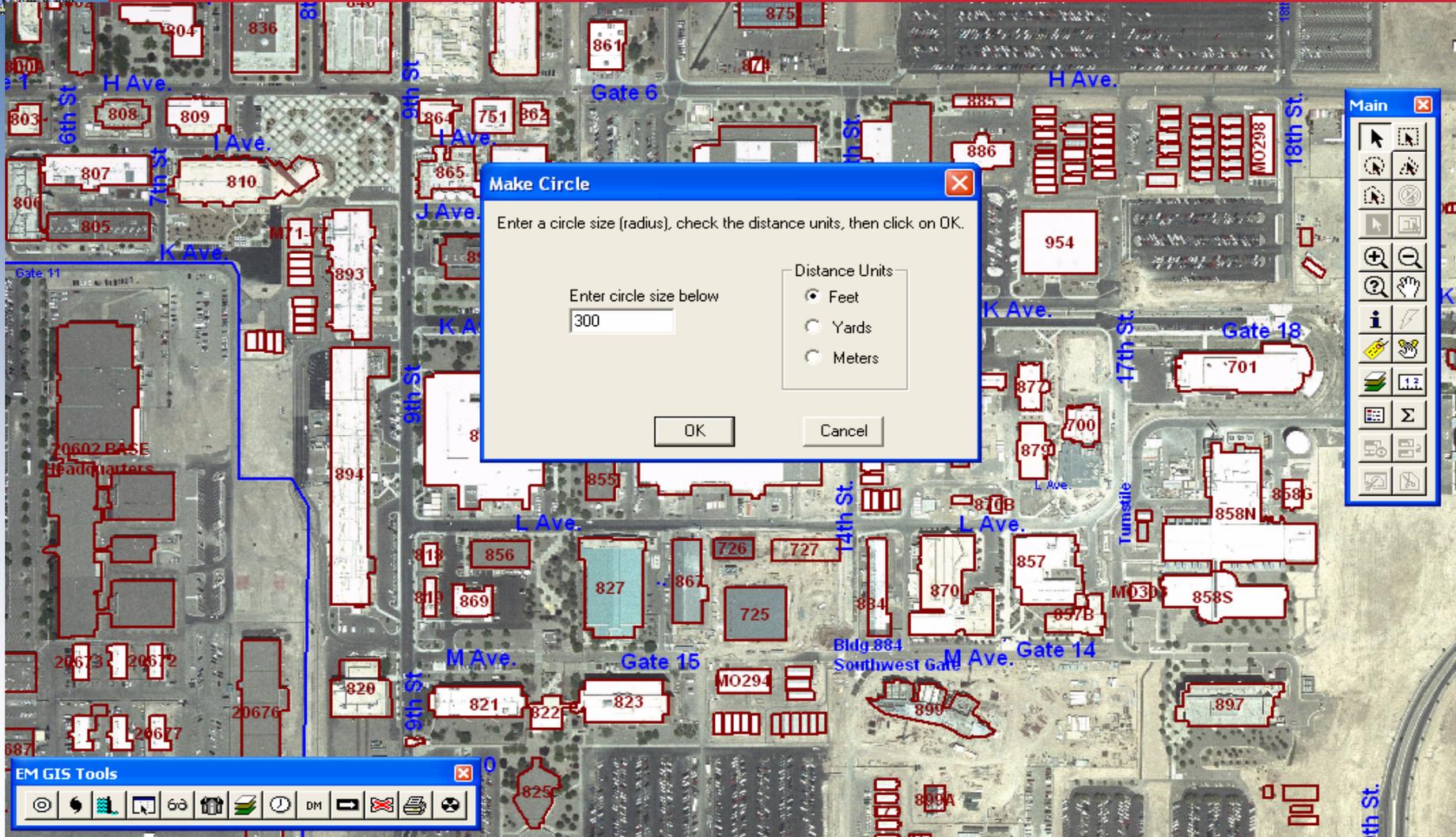
# Wind shift to the southwest, building legends “on”



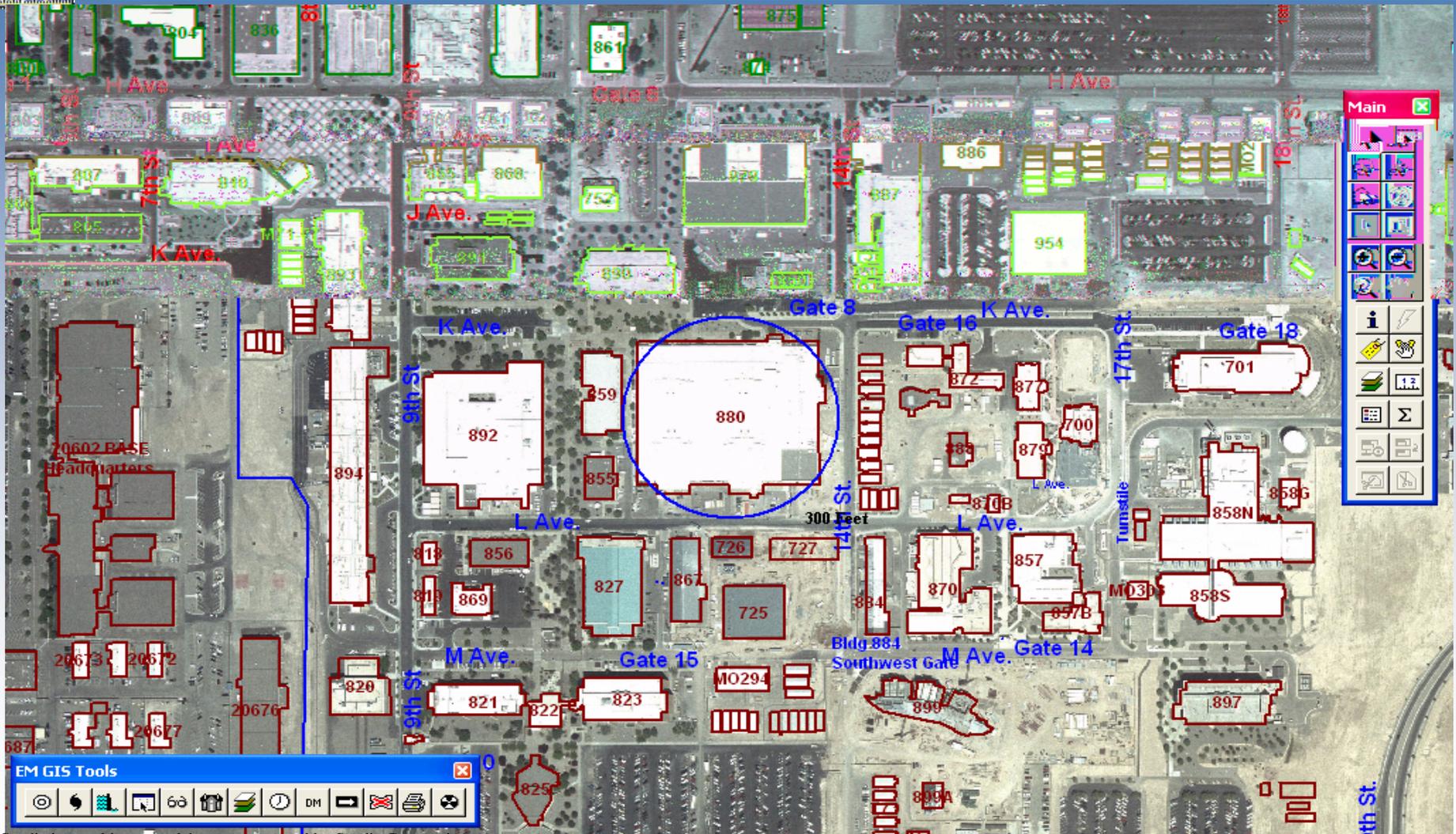
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# Draw a Circle



# A 300' circle around a building



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# Create a buffer zone around a building



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# Create a 300' buffer zone around a building

The screenshot displays an aerial map of a facility with various buildings outlined in red. A central building, labeled '880', is highlighted with a blue border. A blue buffer zone is visible around this building. A dialog box titled 'Buffer around a building' is open, showing the following settings:

- Building Number: 880
- Buffer Distance: 300
- Distance Units: Feet (selected)

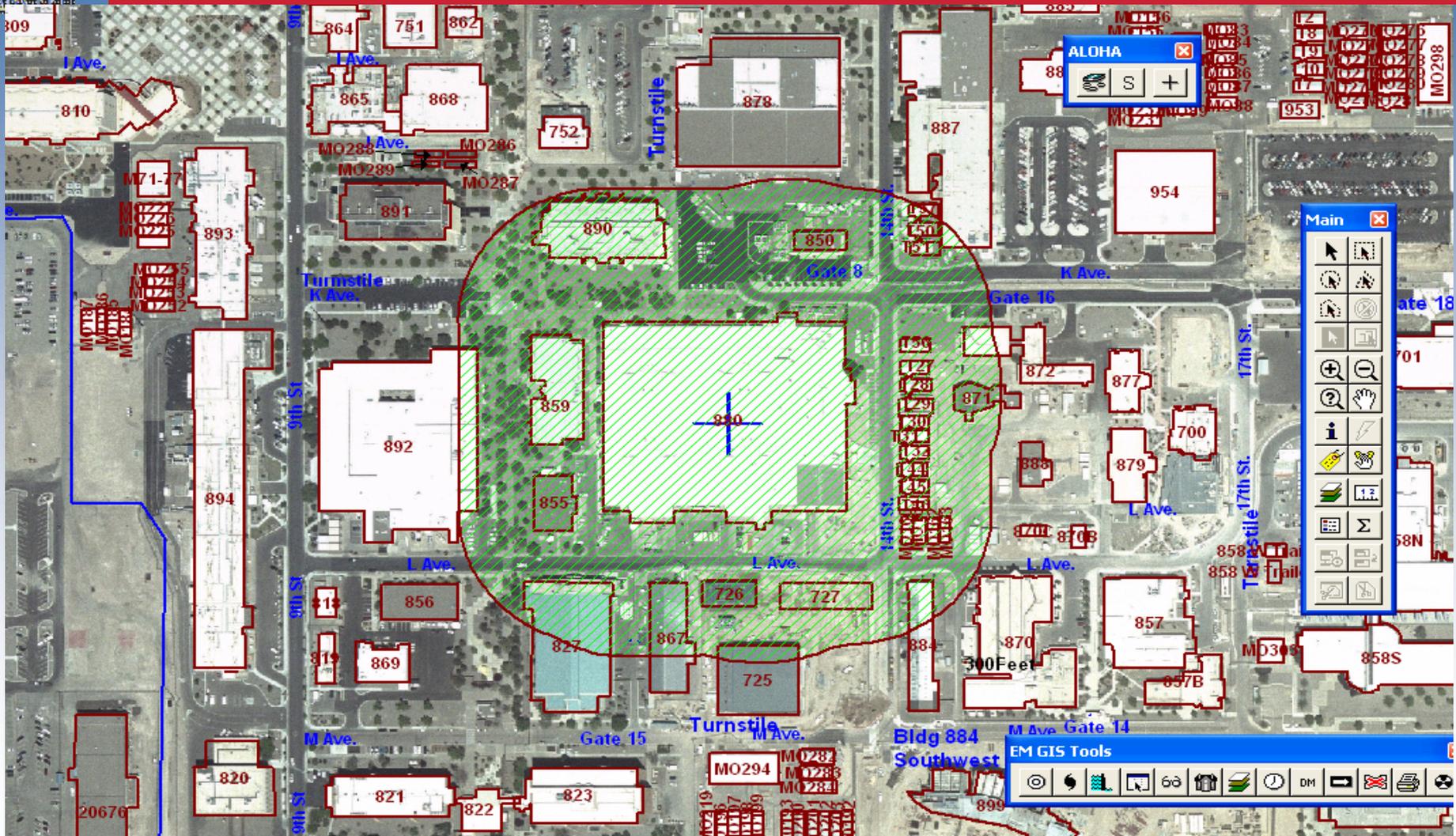
The dialog box also includes 'OK' and 'Cancel' buttons. Other UI elements include a 'Main' toolbar on the right with navigation and analysis tools, and an 'EM GIS Tools' toolbar at the bottom. A small inset image in the top left corner shows the US Capitol building.

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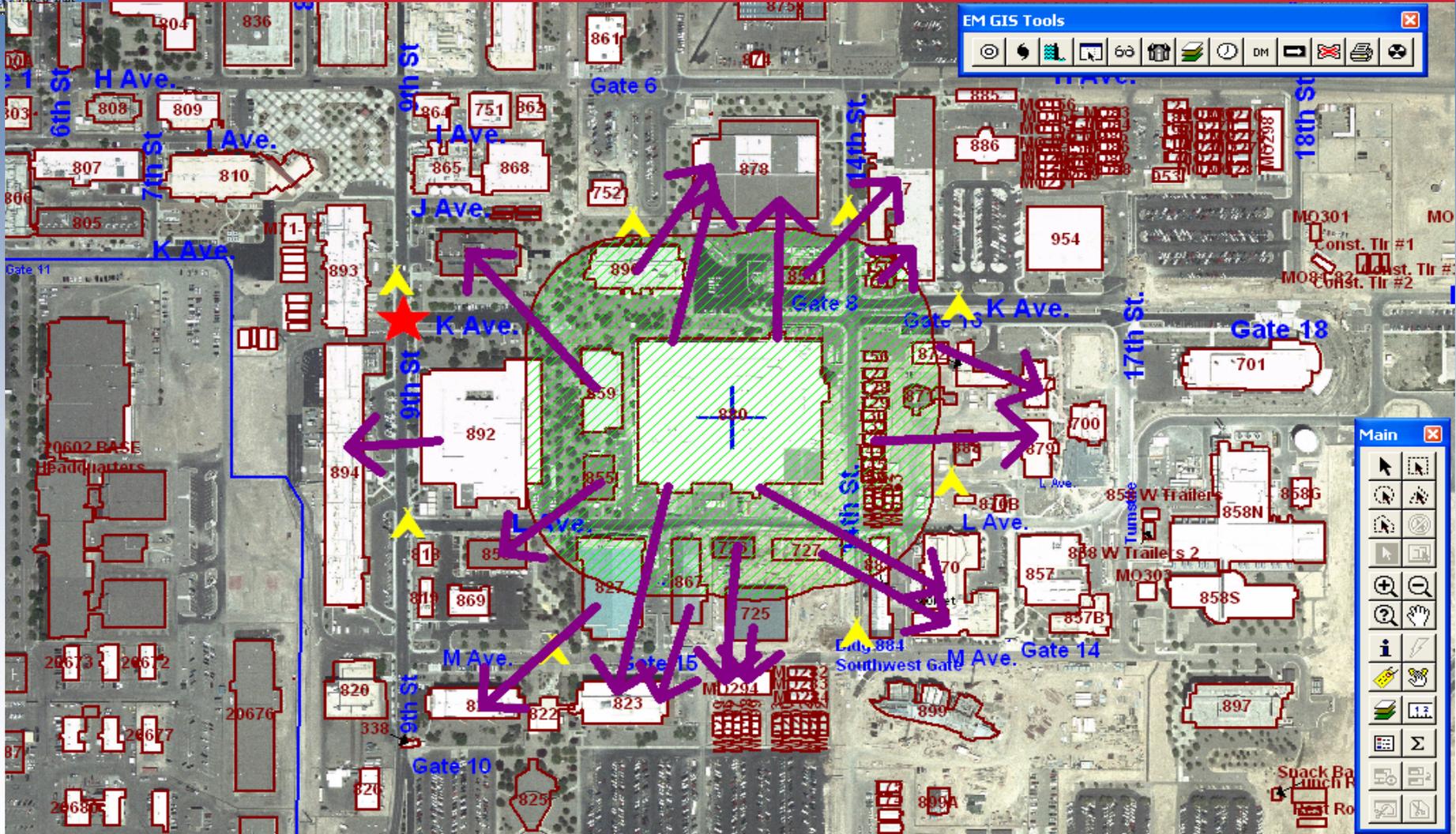
# A 300' buffer zone around the same building



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# ICP, Security CPs, Evac Routes shown



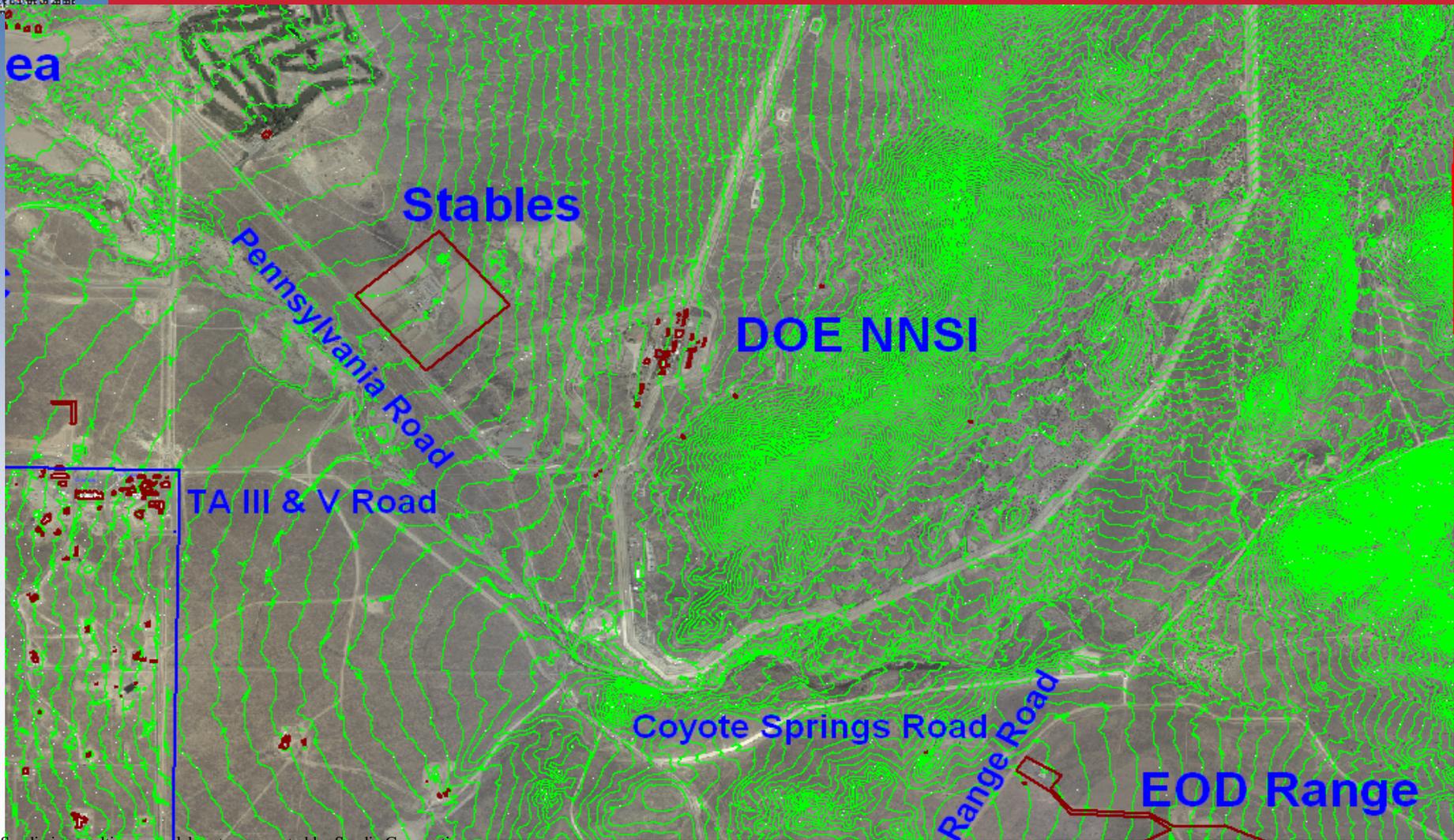
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# New GIS Technologies at Sandia Labs

- **Terrain contour data can also be shown as a separate layer**

# Thirty foot contour lines



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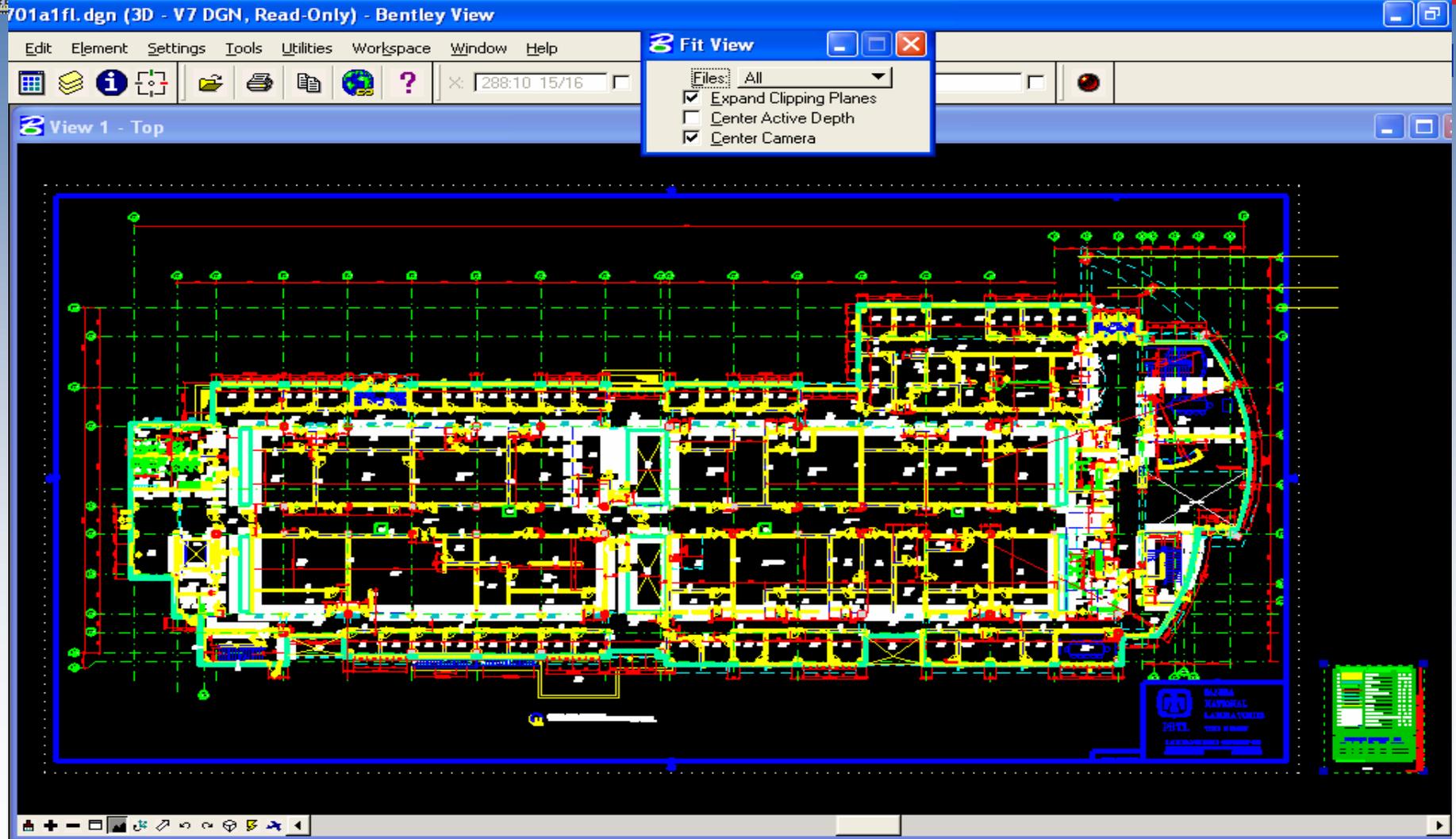


# New GIS Technologies at Sandia Labs

- **Sandia Facilities Drawings are also used**
- **CAD drawings shown using Bentley software**
- **Most disciplines, i.e, architectural, mechanical, electrical, fire protection, alarms and locks, lab equipment, etc.**



# Building, 1<sup>st</sup> Floor, Architectural Floor Plan



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# New GIS Technologies at Sandia Labs

- **Challenges for the future**
  - **Maintaining data currentness**
  - **Making it easier to use by scene responders**
  - **Incorporating latest Consequence Assessment tools (currently using HOTSPOT & Aloha)**
  
- **Questions?**