

# State Emergency Operations Center



MICHIGAN STATE POLICE  
EMERGENCY MANAGEMENT & HOMELAND SECURITY DIVISION

Don Bouffard 2/21/2016

# Standards

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- Built to FEMA-543 Design Guide for Improving Critical Facility Safety from Flooding and High Winds
  - Critical Facility Design Considerations
  - Making Critical Facilities Safe from Flooding
  - Making Critical Facilities Safe from High Wind
  - Observations on the Performance of Critical Facilities



# Standards

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- Building Occupancy Category IV from the Building Code and ASCE Table 1-1
  - Category IV buildings are essential facilities; these buildings include hospitals and other health care facilities where surgery and/or emergency treatment is available, water storage , fire, rescue, ambulance, and police stations and garages, designated earthquake, hurricane, or other emergency shelters. Category IV building are critical for emergencies and defense.



# Standards

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- FEMA 543 classified Level 1 – Operational.
  - The facility sustains no structural or nonstructural damage, emergency operations are fully functional, and the building can be immediately operational. The site is not affected by erosion, but may have minor debris and sediment deposits.
    - Lateral hydrostatic forces
    - Vertical (buoyant) hydrostatic forces
    - Hydrodynamic forces
    - Surge forces
    - Impact forces of flood-borne debris
    - Breaking wave forces
    - Localized scour



# Standards

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- Can withstand 250 mph winds
- Can withstand an EF-5 storm
  - ASCE 07-10 Latest standards for wind loads
- Exterior wall thickness Total = 12" Structural wall
  - 1'-8" total thickness



# Electrical Generators

- Electrical Generators
  - Qty. of 2 – 400 KW (Kilo=1000) (400,000 watts each) load balancing generators
    - 8,000 gallon fuel tank (primary) and a 400 gallon for testing for the SEOC
  - Portable generator connection cabinet used in the event of a generator failure
  - Qty. of 1 – 600 KW (K=1000) (600,000 watts) for the EMHSD, Administrative Offices
    - 2000 gallon tank
  - Remote fueling station - Fuel trucks to stand off when filling the tanks
  - Designed for a 96 hour Operational Period





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# Construction

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- Overall Square footage of the hardened facility is 26,620
- Square footage of the SEOC is 6,810
- Number of Seats in SEOC approx. 125



# Plumbing/HVAC

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- Two water supply systems: City water distribution and a backup well
- Kitchen and Showers with Lockers
- Lift station
- HVAC can be run independently if State of Michigan monitoring/control is lost
- Emergency vent closure with positive pressure
  - Not sealed against HazMat exposures



# Security

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- Impasse II Anti-Scale high security fencing
- Ditch and Berm designed to vault and overturn high speed vehicles
  - Berms distance varies. Distance is anywhere from 53' to 140'. Berms and Trenches are 16' wide. Berms are 2' to 3' tall. Trenches are 2 to 3' deep
- Card access system
- Views blocked to prevent direct fire
- No shielding from indirect fire



# Technology

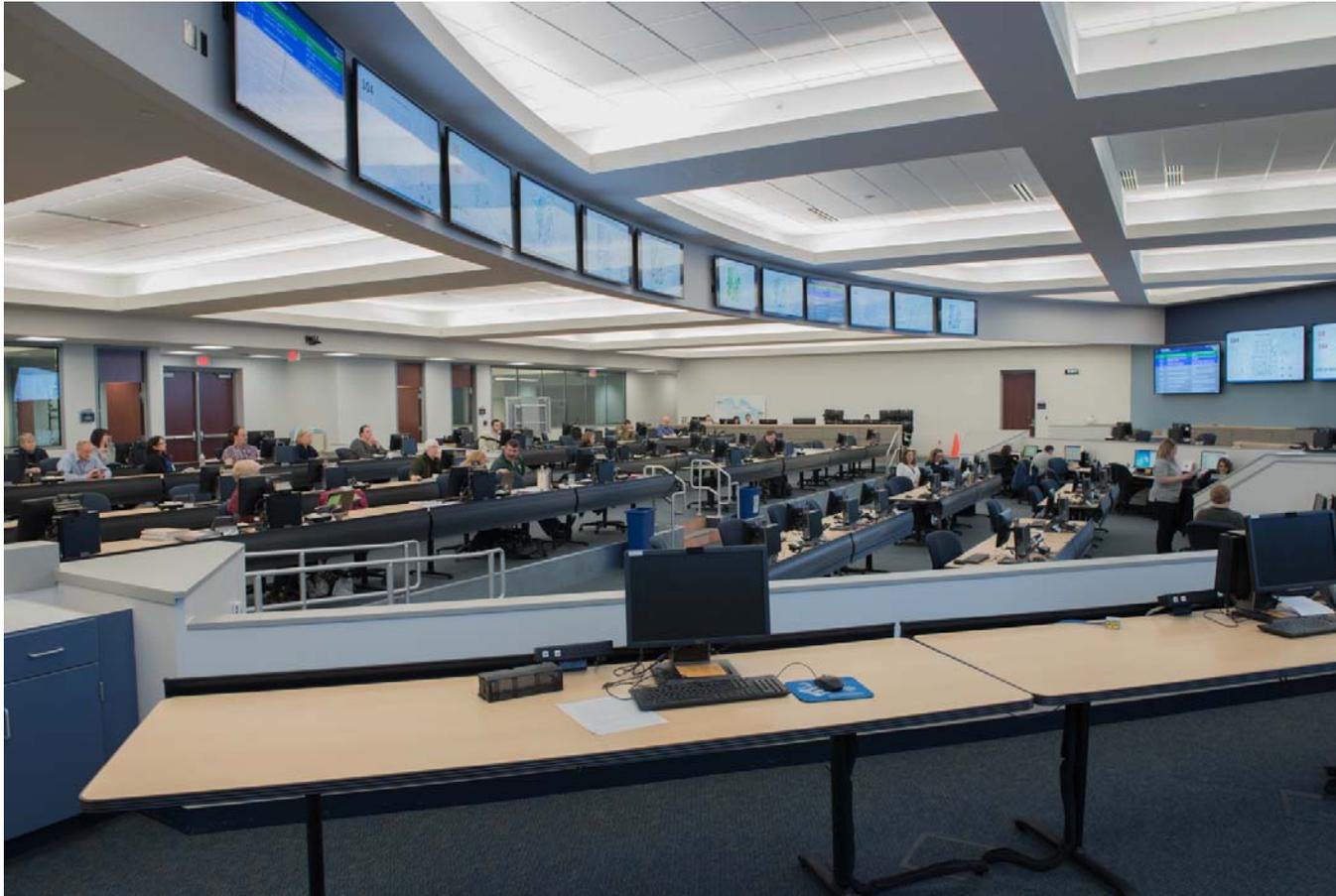
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- 12 - 90" monitor for SEOC positions
- 12 - 60" monitors for command staff
- 4 x 4 video wall with 8 video windows
  - Can be independently sized and moved on screen





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# Technology

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- 4 - 2 x 2 interactive touch screen video wall
  - Synchronized with 3 other 2 x 2 video touch screen video walls in SEOC
    - Operational planning teams
  - 4 video windows can be screen captured and annotated
- Videoconferencing
- IPTV controlled by SEOC IT staff
  - 16 channels
  - Any source can be put on a channel for display on monitors in GOB
    - Ex. Live video from incident scene can be put on a channel
- 60" touch screen monitor



# Technology

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- Inter Com System for communications for each position in the SEOC.
  - Users wear headset.
  - Agencies are on an ESF talk group with other agencies.
  - Agencies can talk to any other agency one on one.
  - Users can dial out on phone system.
  - Users can participate in teleconferences.
  - Field personnel can communicate on ESF talk groups using client on Android/IOS.
  - Intercom allows operators to listen to program audio on monitors.
  - Intercom connected to overhead speakers for briefs.
  - Radio operators can call into ESF talk groups or one on one with agency.
  - Intercom can join teleconference, public safety radio, SEOC operators, and Auxiliary Communication operators in single call.



# Technology

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- Communications
  - RACES, Civil Air Patrol, Army MARS stations in AuxComm room.
  - Telephone systems hardened against loss of State of Michigan networks.
  - Independent Internet connection to protect against loss of State of Michigan networks.
    - Buried fiber into facility.





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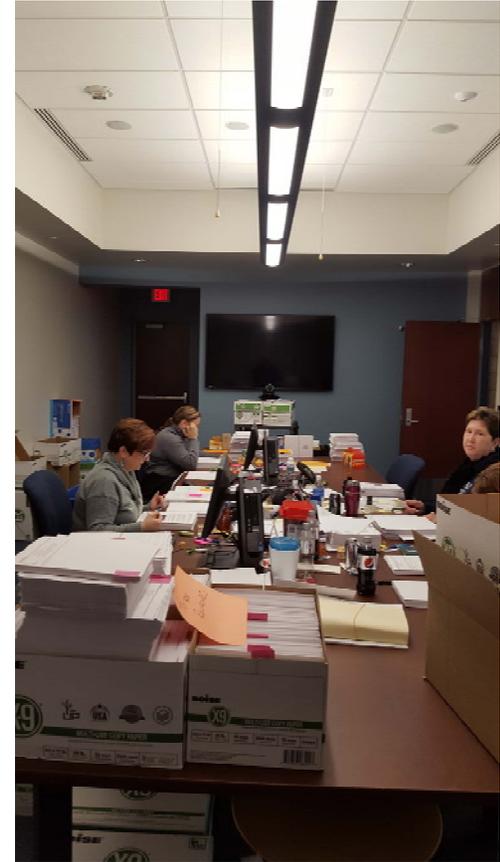
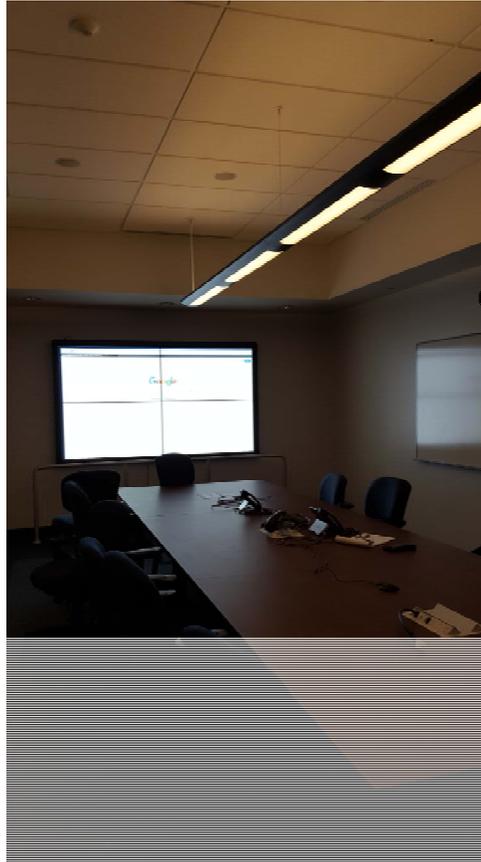
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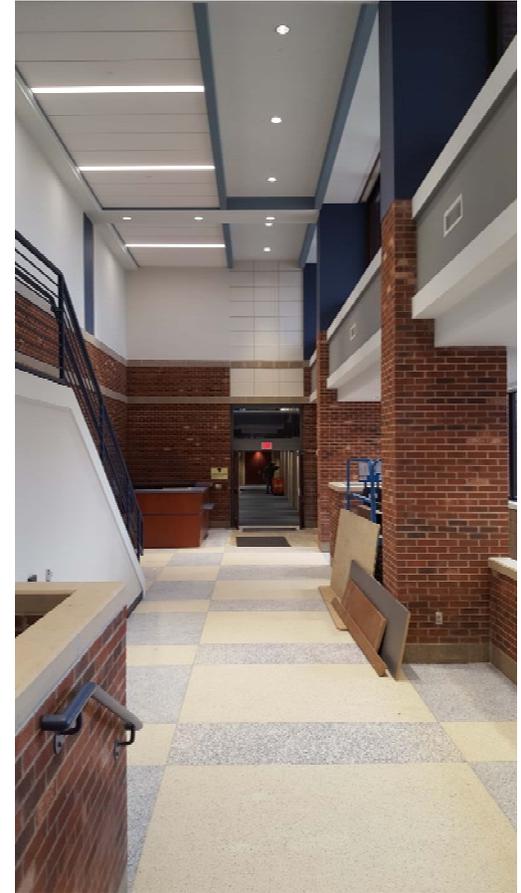
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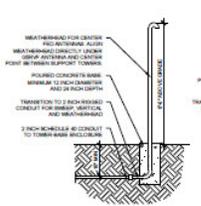
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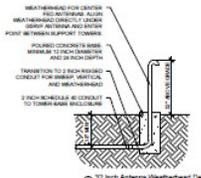
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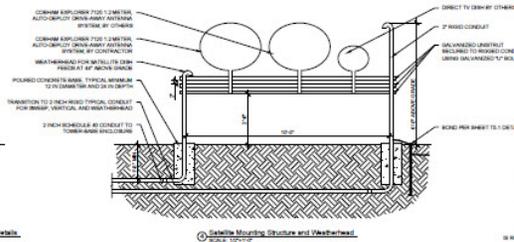
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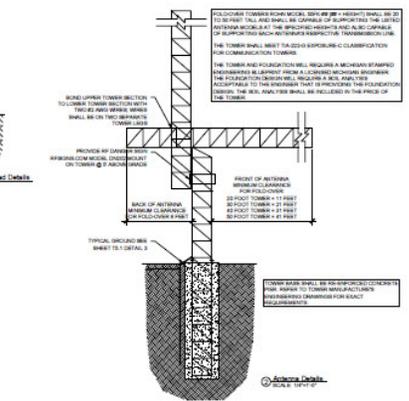
Top Antenna Weatherhead Details  
SCALE: 1/2"=1'-0"



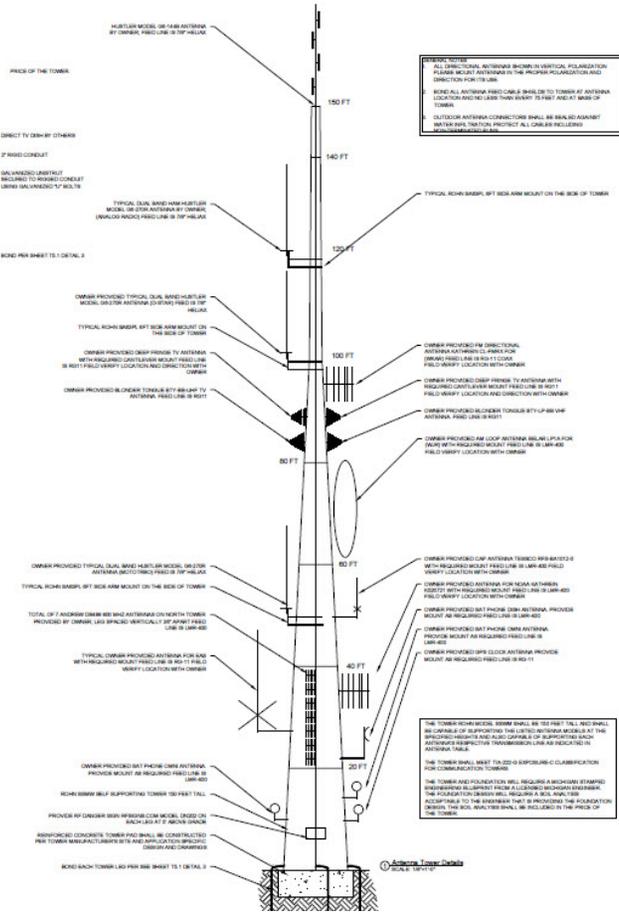
Side Antenna Weatherhead Details  
SCALE: 1/2"=1'-0"



Cable Mounting Structure and Weatherhead  
SCALE: 1/2"=1'-0"



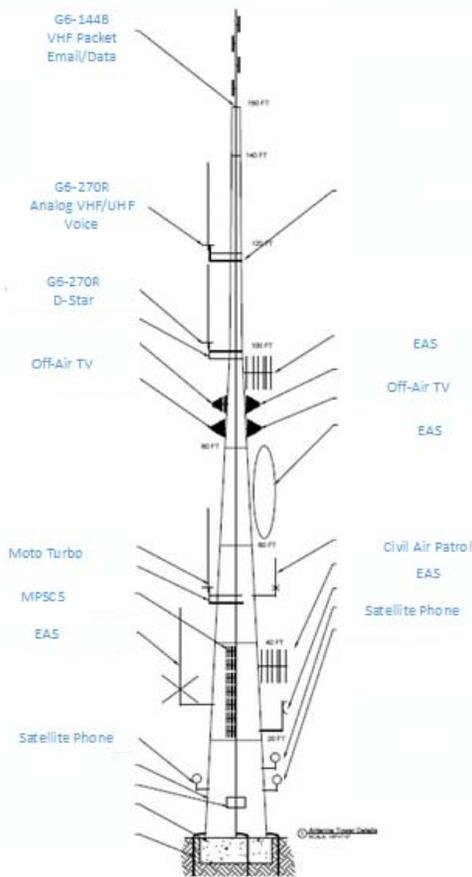
Antenna Details  
SCALE: 1/2"=1'-0"



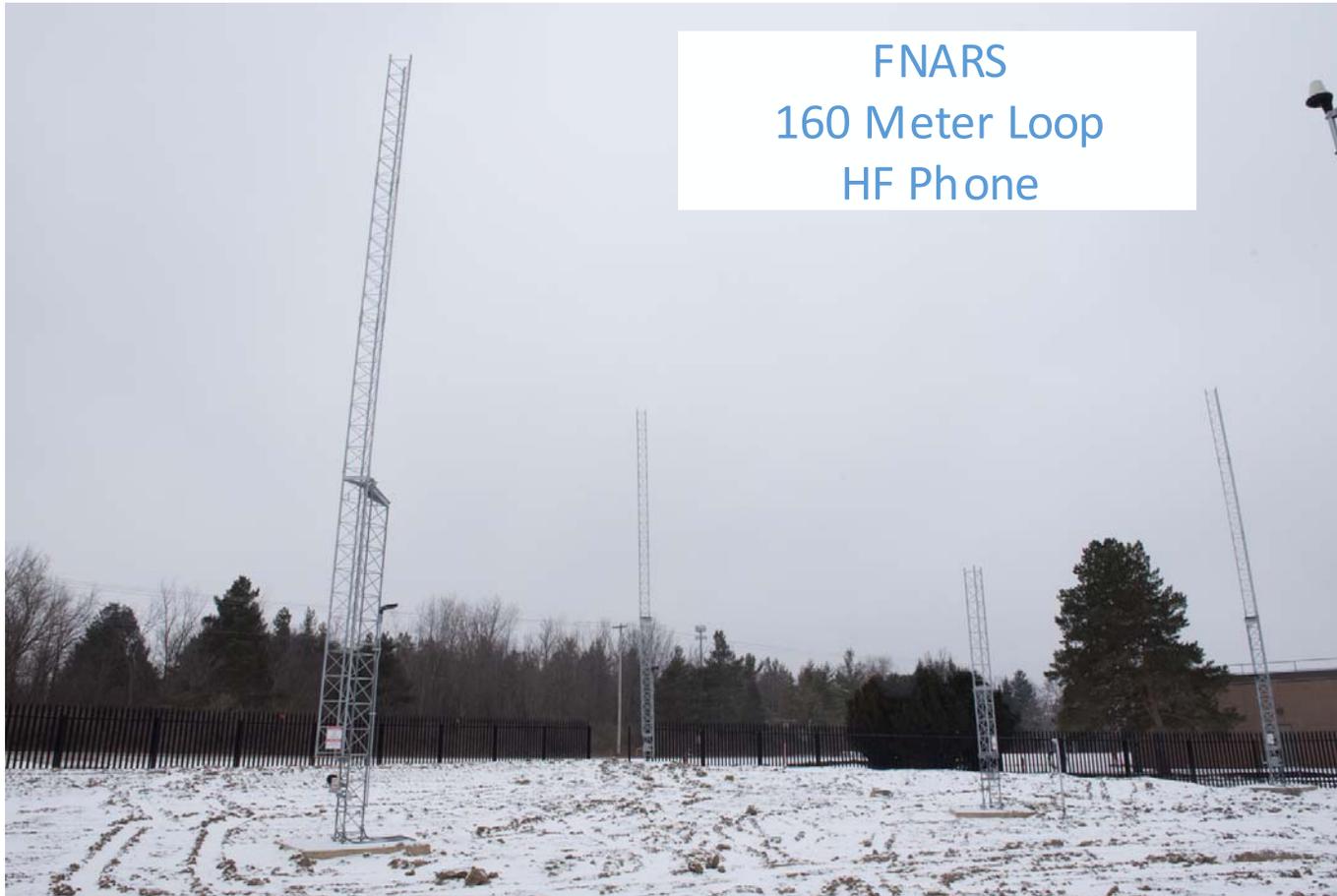
**GENERAL NOTES:**  
 ALL UNIDIRECTIONAL ANTENNAS SHALL BE VERTICAL POLARIZATION. PLEASE VERIFY ANTENNA POLARIZATION DIRECTION FOR ITS USE.  
 ALL ANTENNAS SHALL BE MOUNTED TO TOWER AT ANTENNA LOCATION AND NO LESS THAN 50% OF TOWER HEIGHT.  
 ALL ANTENNA CONNECTORS SHALL BE SEALED AGAINST WEATHER. TOWER SHALL PROTECT ALL ANTENNA FEEDLINES.

THE TOWER RICHMOND BROW SHALL BE 100 FEET TALL AND SHALL BE CAPABLE OF SUPPORTING THE LISTED ANTENNAS AT THE HEIGHTS SHOWN AND ALSO CAPABLE OF SUPPORTING EACH ANTENNA TABLE.  
 THE TOWER SHALL MEET TO 220-D RICHMOND BROW CLASSIFICATION FOR COMMUNICATION TOWERS.  
 THE TOWER AND FOUNDATION WILL REQUIRE A MECHANICAL STAMPED APPROVED FOUNDATION FROM A LICENSED GEOTECHNICAL ENGINEER. THE FOUNDATION DESIGN WILL REQUIRE A SOIL ANALYSIS REPORT TO BE PROVIDED TO THE ENGINEER. THE FOUNDATION DESIGN SHALL BE INCLUDED IN THE PRICE OF THE TOWER.  
 THE SOIL ANALYSIS SHALL BE INCLUDED IN THE PRICE OF THE TOWER.





FNARS  
160 Meter Loop  
HF Phone



# MARS



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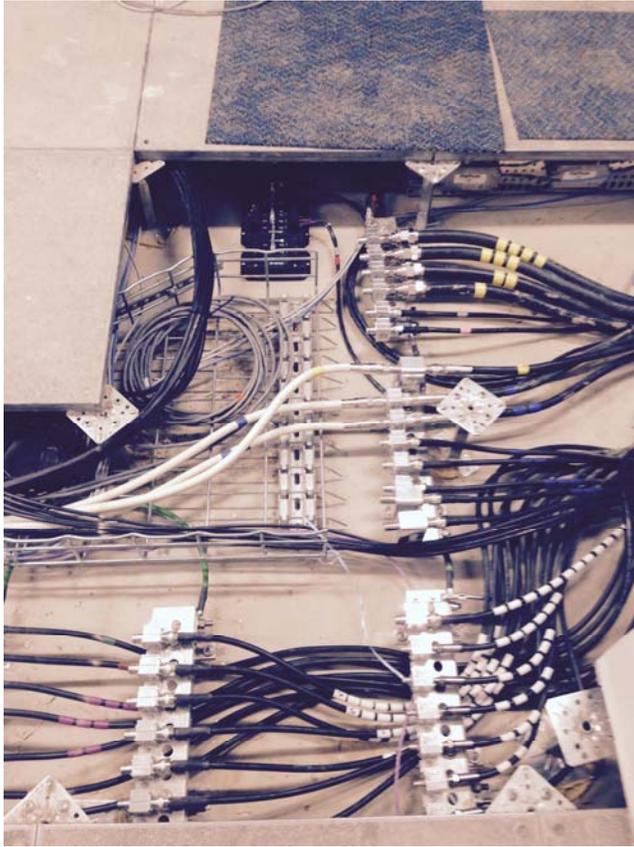
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# SEOC

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## Questions?

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