

Figure 1 consists of 12 diagrams arranged in a 3x4 grid. Each diagram shows a horizontal line with a central point and two side points. The distance between the central point and each side point is labeled as "one inch = one foot". The diagrams are arranged in a grid, with the first row showing the initial state and subsequent rows showing the evolution of the lattice structure.

COMMUNICATIONS STRUCTURED CABLING SYSTEM:
THE CABLING CONTRACTOR SHALL PROVIDE ALL CABLING, BACKBONE CABLING, TERMINATIONS, EXISTING, ETC AS REQUIRED FOR A COMPLETE AND OPERATION CABLING SYSTEM. THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CONDUIT AND BACKBOXES ASSOCIATED WITH THE COMMUNICATIONS OUTLETS.

PUBLIC ADDRESS SYSTEM:
THE CABLING CONTRACTOR SHALL BE RESPONSIBLE, INCLUDING THE PROCUREMENT OF SUB-CONTRACTORS, FOR THE INSTALLATION OF ALL SPEAKERS, CABLING, EQUIPMENT, PHONE SYSTEM TIE-IN AND ALL ASSOCIATED PROGRAMMING AS REQUIRED HEREIN AND FOR A COMPLETE AND OPERATIONAL SYSTEM. THE EC SHALL PROVIDE ALL REQUIRED BACKBOXES AND CONDUIT FOR THESE SYSTEMS.

NURSE CALL SYSTEM:
THE CABLING CONTRACTOR SHALL BE RESPONSIBLE, INCLUDING THE PROCUREMENT OF SUB-CONTRACTORS, FOR THE INSTALLATION OF ALL CALL BOXES, ANNUNCIATORS, DOME LIGHTS, ETC AND ALL ASSOCIATED PROGRAMMING AS REQUIRED HEREIN AND FOR A COMPLETE AND OPERATIONAL SYSTEM. THE EC SHALL PROVIDE ALL REQUIRED BACKBOXES AND CONDUIT FOR THESE SYSTEMS.

CAMERA SYSTEM, ACCESS CONTROL AND INTRUSION DETECTION DEVICE CONDUITS:
THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL CONDUIT AND BACKBOXES REQUIRED FOR INSTALLING ALL SECURITY DEVICES AND ROUTING THE CONDUIT TO THE REQUIRED DESTINATION. EC SHALL COORDINATE AS REQUIRED WITH GOVERNMENT CONTRACTOR.

GROUNDING:
THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR INSTALLING THE GROUNDING BUSBAR AS SHOWN ON THE DRAWINGS AND CONNECTING IT TO THE BUILDINGS MAIN ELECTRICAL SERVICE GROUND. THE EC SHALL ALSO BE RESPONSIBLE FOR GROUNDING ALL BACKBONE CONDUIT AND CABLE TRAY. THE STRUCTURED CABLING CONTRACTOR (SCC) SHALL BE RESPONSIBLE FOR GROUNDING ALL RACKS, PROTECTOR BLOCKS, CABLE LADDER TRAY IN COMMUNICATION CLOSETS, ETC, INCLUDING CONDUIT FOR EACH GROUND CONDUCTOR.

FIRESTOPPING:
THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR FIRESTOPPING SLEEVE ASSEMBLIES TO OBTAIN A UL RATING. THE STRUCTURED CABLING CONTRACTOR (SCC) SHALL BE RESPONSIBLE FOR FIRESTOPPING IN THE SLEEVES AFTER INSTALLATION OF CABLE IS COMPLETE.

CONDUIT AND CABLE TRAY: THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR ALL BACKBONE CONDUIT AND CABLING PATHWAYS. THIS IS TO INCLUDE ALL INTERIOR AND EXTERIOR CONDUIT, ALL WALL PENETRATIONS AND CONDUIT SLEEVES WHETHER SHOWN ON THE DRAWINGS OR AS REQUIRED TO PENETRATE FULL HEIGHT PARTITIONS AS SHOWN ON THE DRAWINGS. CONDUIT PATHWAYS SHALL INCLUDE ALL PULLBOXES, PULLPATES, PULLSTRINGS, CONDUIT MARKINGS, ETC. ALL CONDUIT SHALL BE INSTALLED ACCORDING TO THE ABOVEGROUND AND UNDERGROUND INSTALLATION METHODS AS SHOWN ON THE DRAWINGS. PROTECT ALL EXISTING UTILITIES. THE STRUCTURE OF THE CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRE RACEWAYS, CABLE RUNWAY, AND/OR ANY OTHER REQUIREMENTS FOR ROUTING AND SECURING CABLE IN THE MAIN COMMUNICATIONS EQUIPMENT ROOM (MTR). THE CABLING CONTRACTOR SHALL PROVIDE ANY INNERDUCT IN BACKBONE CONDUITS AS REQUIRED IN THE SPECIFICATIONS AND DRAWINGS.

BACKBOARDS:
THE STRUCTURED CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL BACKBOARDS AS SHOWN ON THE DRAWINGS AND AS REQUIRED TO PROVIDE A COMPLETE SYSTEM. THE ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR ROUGH-IN OF ELECTRICAL CONDUIT PRIOR TO INSTALLATION OF BACKBOARDS. ALL POWER CONDUIT SHALL BE CONCEALED BEHIND ALL BACKBOARDS. BACKBONE CONDUIT SHALL BE EXPOSED AS SHOWN ON THE BACKBOARD ELEVATIONS.

THIS LIST IS NOT COMPREHENSIVE. THE STRUCTURED CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL REQUIREMENTS SHOWN ON THE COMMUNICATIONS DRAWINGS AND/OR REQUIRED TO PROVIDE COMPLETE SYSTEMS.

THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF ALL FLOORS AND ALL WALLS WHICH EXTEND TO THE UNDERSIDE OF THE FLOOR OR ROOF DECK ABOVE. FIRESTOPPING SHALL BE ACCOMPLISHED AFTER ALL CABLES ARE PULLED (ALL SYSTEMS) USING UL CLASSIFIED SYSTEMS WITH FIRE RATING EQUAL TO OR GREATER THAN THE FIRE RATING OF THE FLOOR OR WALL ASSEMBLY PENETRATED. FIRESTOP SYSTEMS SHALL BE 3M, NELSON OR ENGINEER APPROVED EQUAL. INSTALL IN ACCORDANCE WITH THE

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- 1) ANY CABLES INSTALLED IN CABLE TRAY SYSTEMS NOT SPECIFICALLY SHOWN ON THESE DRAWINGS SHALL BE APPROVED BY THE OWNER/ENGINEER PRIOR TO INSTALLATION.
- 2) COMPONENTS AND INSTALLATION SHALL COMPLY WITH NFPA 70 "NATIONAL ELECTRICAL CODE".
- 3) COORDINATE CABLE TRAY INSTALLATION WITH MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT, DUCTWORK, CONDUITS, PIPING AND ALL OTHER TRADES PRIOR TO ORDERING AND INSTALLING.
- 4) ALL CABLE TRAY COMPONENTS SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.
- 5) INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 6) REMOVE BURRS AND SHARP EDGES.
- 7) MAKE CHANGES IN HEIGHT AND DIRECTION WITH STANDARD CABLE TRAY FITTINGS.
- 8) FIRESTOP AT PENETRATIONS OF FIRE AND SMOKE BARRIERS.
- 9) INSTALL TRAYS WITH AS MUCH AS POSSIBLE WORKING SPACE TOP AND BOTH SIDES FOR CABLE INSTALLATION.
- 10) ELECTRICALLY GROUND CABLE TRAYS AND ENSURE CONTINUOUS ELECTRICAL CONDUCTIVITY OF CABLE TRAY SYSTEM. PROVIDE BONDING JUMPERS BETWEEN CABLE TRAY SECTIONS. PROVIDE A #4 AWG GROUNDING CONDUCTOR FOR EACH RUN OF CABLE TRAY – ATTACH TO TRAY WITH COMPRESSION GROUND LUG – RUN CONTINUOUS IN EMT CONDUIT AND BOND TO BUILDING MAIN ELECTRICAL SERVICE GROUND.
- 11) SUBMIT CUT SHEETS OF ALL CABLE TRAY COMPONENTS TO ENGINEER PRIOR TO ORDERING MATERIALS.

THE PROJECT SPECIFICATIONS SHALL TAKE PRECEDENCE OVER ALL INFORMATION LISTED ON THE DRAWINGS. HOWEVER, IF CIRCUMSTANCES ARISE WHERE THE DRAWINGS AND SPECIFICATIONS CONFLICT, CONTRACTOR SHALL CONTACT ARCHITECT/ENGINEER FOR CLARIFICATION. IF CLARIFICATION NOT BEEN RECEIVED BY BIDDING CONTRACTOR PRIOR TO REQUIRED SUBMISSION DATE, CONTRACTOR SHALL BID ON THE MORE STRINGENT REQUIREMENT WHETHER INDICATED IN DRAWINGS OR SPECIFICATIONS.

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