

ELECTRICAL SPECIFICATIONS
SECTION 16100 - GENERAL PROVISIONS
RELATED DOCUMENTS
 A. The General Conditions, Supplementary Conditions, and General Requirements apply to the Work specified in this Section.
DESCRIPTION
 A. This Section defines the General Provisions which are common to all Sections of Division 16.
 B. The information in the Specifications and the Plan Drawings are basic facts to follow in determining a reasonable and competitive price for the specified work. The Drawings and Specifications do not necessarily indicate or describe each item necessary for the full performance and completion of the particular work the contractor may be bidding. These documents provide the general information necessary to inform the contractor of the nature of the systems required for Electrical. Contractor shall visit the site prior to bidding to become familiar with the existing conditions under which the work shall be performed. Failure to inspect the site will be considered justification for an adjustment in contract price or failure to perform the work under this contract.
 C. Work Included:
 - All electrical work herein specified and/or shown on drawings unless noted otherwise.
 - Work by the Utility Company to which there is a charge. An electrical back charge to be included under this Division 16 Contract.
 - Installation shall be complete from the location designated by the Electrical Utility Company as the point of service connection, to the final connection of motors, fixtures, devices, apparatus or pieces of equipment, unless noted otherwise on these Specifications.
 - The Electrical Drawings and specifications shall be an integral part of the contract and shall be read in conjunction with the Electrical Specifications and General Requirements.
 - Minor items and accessories not specifically indicated as necessary to complete such systems shall be included. All work & materials necessary for proper operation of any system, shall be provided by the Contractor.
 D. Description of System:
 - Complete power wiring to main disconnect switch, panels, motorized equipment, motors, equipment cabinets, and individual circuits.
 - General wiring for power, lighting, and miscellaneous systems.
 - Materials and equipment for electrical work.
 - Electric service and distribution.
 - Motor and equipment wiring including starters, safety switches & control wiring.
 - General and emergency lighting and power systems.
 - Connections for lighting and sign systems.
 - Telephone back boxes and empty conduit.
 - Arrangements for use of temporary construction services. Such services shall be normally 120/208 volt, 3 phase, 4 wire from which a complete system of temporary power and lighting shall be installed for all construction needs and as required by the occupational safety and health departments, (OSHA). Temporary services shall be removed upon completion of work.
 - Computer system empty conduit, covelets.
 - Wiring of power connections to equipment furnished and installed by others.
 - Cutting, patching, excavation and back fill, and concrete work required to complete the work of this section.
 Basic shall be connected to 38% of standard completion. All existing work shall be protected or repaired to "like New" conditions.
 - All other equipment, material, devices, accessories required and/or shown on the drawings.
 E. Related work to be completed by others:
 - Computer system wiring.
 - Television system wiring.
 - Alarm System.
 F. Definitions - As used within the Contract Documents:
 - "Contract" or "Writing" shall mean any electrical work.
 - "Package Unit" shall mean an item of equipment having one or more motors or other electric energy consuming elements integrally factory mounted on a single base, complete with all associated control devices and interconnecting wiring.
 G. Permits:
 - Obtain all permits and approvals from the governing bodies which have jurisdiction over this project.
QUALITY ASSURANCE
 A. Qualifications:
 - Materials and equipment shall be new and shall conform to N.E.M.A. and Underwriters Laboratories (UL) standards in every case, where such standard has been established. All equipment of similar type shall be of the same manufacturer.
 B. Requirements of Regulatory Agencies:
 - All electrical work shall be in accordance with the National Electrical Code (N.E.C.), current edition, and any amendments to the National Electrical Code made by a local Code Official. Coordinate exact code requirements and local amendments with AHJ prior to any installation.
 - Where applicable, all fixtures, equipment and materials shall be as approved or listed by the following agencies:
 a. Factory Mutual Laboratories.
 b. National Fire Protection Association.
 c. Underwriters Laboratories, Inc. (UL)
 d. National Electrical Manufacturers Association (NEMA)
 e. Association with Equipped Act (ADA)
 C. Allowable Tolerances:
 - Review Architectural, Structural and Mechanical Drawings for all dimensions, locations, partitions and walls, electrical details, and location of mechanical pipes and ducts so that the electrical installation shall be in coordination with that of the other trades.
 - Exact location and electrical requirements of equipment furnished by other trades and wired by this Contractor shall be obtained from the Drawings of the other trades.
APPROVAL DRAWINGS
 A. Prepare and submit for approval such additional electrical drawings, diagrams, and specifications as are required by:
 a. Local Fire Prevention Bureau.
 b. Local Building Department - Electrical Inspection Section.
 c. Local Utility Companies.

COORDINATION AND COOPERATION
 A. The contractor shall determine the phases and satisfy himself of existing conditions under which he will be obligated to perform his part of the work so that in no way manner affect the work under the contract. The Contractor shall cooperate with other trades to that the installation of all equipment may be properly coordinated.
 B. All equipment furnished shall fit space available, with connection, etc., in the required location and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation while the specifications and future list denote the type and quality of material and workmanship to be used. Where a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect whose decision shall be final. No allowance will be made subsequently in this connection on behalf of the Contractor after award of the contract.
WARRANTY
 A. Provide one year warranty for all fixtures, equipment, materials and workmanship, upon final acceptance by tenant. Any defective material or faulty workmanship shall be replaced without cost to tenant.
PROTECTION
 A. The contractor shall be responsible for protecting all, both new and existing equipment and systems against harmful exposure, or accumulation of dust, moisture, flooding, corrosion, or other forms of damage. Clean and restore damaged fixtures and equipment to place installation in a like-new condition.
 B. Contractor shall determine operational condition of existing equipment to be used and maintained for this project prior to connecting work. Contractor shall adjust, repair or replace non functional equipment. All work shall maintain existing UL listing and labeling requirements. Contact and report all unbreath conditions for appropriate directions.
INSTALLATION QUALITY PERFORMANCE ERECTION
 A. Application, Installation:
 - No measurements of a drawing by scale are to be used as a dimension to work by. The drawings are not intended to show complete or accurate details of the building in every respect. Exact locations and matters are to be defined in the field and shall be satisfactory to the Architect on site. This Contractor shall take all field measurements and shall be responsible therefor.
 - Coordinate Drawings and Specifications, checking all measurements and determine intent of Contract Documents. Discrepancies shall be brought to the Architect's attention prior to construction on any installation.
 - The right is reserved to make any reasonable change in location of outlets and equipment prior to installation without involving additional expense. Any change from the Electrical Drawings as is necessary to make the work of the Contractor conform to the building as constructed and to fit the work of other trades shall be included in Contractor's Contract and installed without extra cost.
 - Perform all work in compliance with all applicable safety regulations including OSHA regulations.
 - Coordinate all work with other trades prior to any installation.
 - Provide code approved disconnect around electrical equipment.
 - Coordinate staging of material with building management representative at time of bidding.
 B. Cables and Cables:
 - Unless specifically noted otherwise, all wiring shall be installed in conduit.
 - All wires that are type THW or THWN copper unless otherwise noted to plant.
 - Wire smaller than #6 shall be sized #6 and larger, stranded.
 - Cable and wire shall be as manufactured by Tripp, General Cable, Southwire or Card.
 C. Color Coding: Color coding shall be used throughout the entire electrical system. Provide industry standard color coding for the voltages involved. Control wiring shall be numbered for identification at terminal points. Number terminal blocks accordingly.
 D. Disconnect Switches:
 - Switches shall be marked with standard NEMA 1, current rating. Switches shall be quick-make, quick-break so that operation of the controls shall not be capable, during normal operation of the work, of being retained by the operating handle after the opening or closing of the contacts.
 E. All safety switches are of the heavy duty or voltage matching equipment listed, NEMA 1 for motor use and NEMA 3R for outdoor use. Switches shall be as manufactured by Eaton, General Electric, Square D, or Siemens.
 F. Fuses: Furnish and install all fuses. Fuses shall be Bushman or as specified on the Drawings.
 - Provide fuse at all locations shown on the drawings or required for supplemental protection.
 - Provide one rating of protective device is 600 amp or less, provide Bushman non-peak current limiting fuses, class J for service switches, class RK1 on panels; RMS (with dual element fuses) up to 100 amp. A dual element fuse Panel having an interrupting rating of 200,000 amp RMS, unless noted 501 amp, provide Bushman "Limitor" fuses, Class T.C. having an interrupting rating 200,000 amp RMS unless noted otherwise. Provide similar type, "Hi-Cap" fuses where shown.
 G. Outlet, Pull and Junction Boxes: Outlet, pull and junction boxes shall be 1/2 gage, or heavier, steel, with removable hinged doors. Boxes shall be as manufactured by Apollon, Steel City or Rego. Size boxes as required for the intended duty, minimum size as required by the applicable National Electrical Code.
 H. Switches:
 - Wall switches shall be located as indicated on the Drawings, arranged singly or in gangs and at the height specified or indicated and shall have proper covers with finishes specified herein. Switches shall be as shown unless otherwise noted on Drawings or otherwise specified.
 - Switches, 20 ampere, 120/277 volt classification grade, shall rated by Leviton, Eagle, HUBBELL, or Pass & Seymour. Switch shall be white.
 I. Receptacles:
 - Receptacles shall be located as shown on the Drawings and at the height specified or indicated. Receptacle and power outlets shall be of the grounding type extension grade and as manufactured by HUBBELL, General Electric, Pass & Seymour, Eagle or Leviton. Receptacles shall be white.
 J. Switch and Receptacle Plates:
 - Plates in finished areas for switches and receptacles shall be white. Identify all dedicated circuits with a laser printed adhesive label indicating panel and circuit number.
 K. Contractor shall provide all boxes, connectors, etc., and install outlets complete.
 L. Lighting and Appliance Panel boards:
 - Plates shall be as type indicated on the Drawings, with main lug, main breakers, branch breakers, fuses, and fuses as specified.
 - Panels shall comply with U.S. Federal Specification WP115a, Type 1, Class 1.
 - Bus structures shall be copper or aluminum.
 - All circuit breakers shall be bolt on type.
 - The Contractor shall balance all circuits. All conductors shall be continuous unless splicing from left outlet to their terminals in cabinet.
 - Contractor shall provide a directory of circuits for cabinet. Directory shall be typewritten, designating room or equipment and circuit numbers, include any other information which may be necessary.
 - Where 2 or 3 pole breaker units are called for, they shall be bolt on, common bus and not single pole units with handle link. Capacity of main breaker shall be as shown on the Drawings.
 - Panel boards shall be manufactured to match the specifications of the manufacturer.
 - Outside Delivery Door Bar: A full system shall be furnished including the door bar, door button shall be Edwards Cat. #852 with standard steel plate.
FIELD QUALITY CONTROL
 A. Testing:
 - After work is in place and connected to devices and equipment, the system shall be tested for shorts and grounds. All hot wires if strayed or grounded, shall be removed and repaired.
 - All meters, instruments, cable connections equipment, and apparatus necessary for making all tests, shall be furnished by the Contractor at his own expense.
ADDITIONAL CLEAN
 A. Cleaning Equipment, Completed Work and Premises: After the completion of all installation, each system shall be thoroughly cleaned to remove all dirt, oil and other foreign matter. Contractor shall also clean all foreign paint, grease, oil, dirt, spots and stains, etc., from all fixtures, equipment, etc. The Contractor shall remove all rubbish, debris, etc., accumulated from his operations from the premises.
APPROVALS
 A. Obtain all permits and approvals from the governing bodies which have jurisdiction over this project.
IDENTIFICATION AND LABELING
 A. Identification of Distribution Switches or circuit breakers individually mounted or of panel boards shall be by means of engraved aluminum nameplates permanently fastened on the front face of the housing, showing 1/4" high white lettering on a black background. Provide all panel boards with typewritten directory.
SLEEVES
 A. Provide sleeves in walls and floor slabs for the passage of all conduits, pipes and ducts installed. Sleeves shall be set in place a sufficient time ahead of concrete work, so as not to delay that work.
CUTTING AND PATCHING
 A. Perform all cutting and patching required to complete the Work, except where are specifically shown on the Architectural or Structural Drawings. Patching shall match existing and shall be coordinated with tenant's representative.

SECTION 16101 - BASIC MATERIALS AND METHODS
MATERIALS
 A. CONDUIT:
 - Electrical Metallic Tubing (EMT, "Thimble" conduit shall be general be listed with permission of Code except where specifically described herein. Minimum EMT conduit shall be 1/2", unless specifically noted otherwise.
 - Heavy wall steel conduit and L.E.C. shall be either hot dipped galvanized or sherardized.
 - Flexible conduit shall be Greenfield type except where exposed to oil, grease, or water - conduit shall be Swallow.
 - Plastic conduit shall be PVC Schedule 40.
 - Conduit shall be as manufactured by Allied, Frango or approved equal.
 - Provide expansion fittings for conduits crossing expansion joints.
 - Conduit shall be:
 a. Rigid: threaded.
 b. Thin Wall: Compression Type.
 c. Flexible: Connectors shall be compatible with flexible conduit used.
 - Provide bending and lock nuts for all conduit entries to boxes.
 B. Type of Conduit:
 - Conduit, when being confined run in concrete slabs, within outside masonry walls, in earth, etc., and exposed in wet areas shall be galvanized steel heavy wall or IMC. Couplings for conduit run in ground concrete shall be concrete tight.
 - Conduit run exposed or outdoors shall be galvanized steel heavy wall or IMC with weather tight fittings and boxes.
 - Conduit run in dry areas within building corridors shall be EMT, except where specifically noted otherwise or prohibited by local codes. Dry areas are inside partitions, ceiling voids, above grade stairs, and areas not subject to damage.
 - Conduit with inside size over 1 1/2" and/or exposed in mechanical rooms shall be galvanized steel heavy wall or IMC.
 - Conduits run under floor slabs and in contact with earth may be PVC Schedule 40.
 C. Provide full race installed (green) ground wire in all conduits. Where the drawings do not indicate the size of the electrical ground wire, it shall be sized per NEC. Provide bare ground wire in all PVC conduit runs.
 D. Boxes, outlets and cabinets:
 - Install equipment and materials in a neat and workmanlike manner and align, level and adjust for satisfactory operation. Install equipment so that all parts are easily accessible for inspection, operation, maintenance and repair. Provide the design, location, and erection of supplementary structural framing required for attachment of ladders or other devices supporting electrical equipment. Rigidity must all boxes and provide with suitable knock-out covers. Plug open knockouts or holes in boxes with suitable blanking device.
 - General all details with regard to ladders, framing, and trim. Symmetrically arrange outlets in the room. Satisfactory contact with properly installed or installed. Repair or replace damaged finishes. Set all boxes (jumps and inlets) and extend to the finished surface of the wall, ceiling or floor until projecting beyond same.
 E. Fire and Smoke Partition Penetration:
 - The Contractor shall familiarize himself with all fire rated construction and install his work so as to maintain the integrity of the fire code rating. Maximum rating of fire rated and smoke rated construction. Boxes shall be steel or pre-manufactured boxes similar to Pipe Boxes, etc., or bars pass through the walls and floors, model WFE, DFE or QDFE. For plastic boxes, use type WFE with one inch thick calcium silicate insulation encased in metal sleeve extension box with a steel cap. Seal annular space around conduit. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains the rated wall and floor integrity, similar to RFF, foam, Dow Corning "Fire Stop" or Pipe Shields, Inc., model WFE, DFE, or QDFE. For non-rated walls and partitions, use metal or glass floor insulation.
SECTION 16400 - SERVICE AND DISTRIBUTION
DESCRIPTION
 A. Work included:
 - Current transformer cabinet.
 - Main transformers.
 - A complete distribution system.
 - System grounding per local codes.
 - All work and charges required by a local utility company.
 - Dry type step down transformer.
 B. Service:
 - Incoming electrical service is as indicated on drawings.
 - Provide exterior main service entrance rated with where required by local authority.
 - Provide concrete encased service ladders where installed in PVC.
 - Underground service ladders shall be a minimum of 36" below grade, minimum 18" above grade and shall be 12" above grade. Transits to be above grade to permit access to three ladders where underground conduits shall be exposed above grade.
EQUIPMENT
 A. Main transformers shall be service approved and front accessible with a main lug, screw on cover plates. Grounding and shielding shall comply with the local utility code and all local code requirements.
 B. Panel boards shall be enclosed in steel cabinets, front and back, with a main lug, all heavy duty. Bus structures shall be copper or aluminum.
 - Main circuit breakers shall be bolt on type, minimum 1500 ampere, minimum 65,000 amperes symmetrical, with a main lug, shall not be determined, where allowed by authority having jurisdiction over the work.
 D. Panel boards shall be shown on the drawings with main lug, main breakers, branch breakers, fuses, and fuses as specified.
 - Panel boards shall be bolt on type.
 - The Contractor shall balance all circuits.
 - Panel boards shall be supplied by tenant's vendor.
 - Provide a printed directory for each panel, identifying the use of each circuit.
DRY TYPE TRANSFORMER
 A. Transformer shall be NEMA WP-1 energy efficient ventilated, as indicated on plans, typical 480V data primary to 120/208V, 30, 4 wire WYE secondary, 60 hertz, NEMA 1 enclosure.
 B. Wiring Aluminum 220° C insulation system, 150° ins.
 C. Normal 5% impedance.
 D. Tap 2 1/2 12% above and below normal.
 E. 75 KVA rated unless otherwise noted.

REPAIRATIONS/INSTALLATION/QUALIFICATION
A. CONDUIT:
 - Installation - An conduit shall be used in accordance with the applicable N.E.C.
 - Conduit to be an conduit in unfinished areas such as mechanical and electrical room used as electrical conduit. At the conduit shall be connected.
 - All conduit and wiring shall be concealed wherever possible. Where conduit and wire cannot be concealed, obtain direction from the Architect. No surface mounted conduit, wire race or power race will be acceptable, unless specifically indicated on the drawings.
 - All exposed conduits shall be run parallel to or at right angles to structural members. Carefully coordinate exacting with the Architect representative, in the field, prior to any installation.
 - All conduit shall be independently supported from the building structure. Conduit shall not be supported from ventilating ducts, mechanical pipes, suspended ceiling grids, or their hangers.
 - All conduit shall be mechanically and electrically continuous from outlet to outlet and box to box. Secure conduit fittings at all enclosures and junctions.
 B. Type of Conduit:
 - Conduit, when being confined run in concrete slabs, within outside masonry walls, in earth, etc., and exposed in wet areas shall be galvanized steel heavy wall or IMC. Couplings for conduit run in ground concrete shall be concrete tight.
 - Conduit run exposed or outdoors shall be galvanized steel heavy wall or IMC with weather tight fittings and boxes.
 - Conduit run in dry areas within building corridors shall be EMT, except where specifically noted otherwise or prohibited by local codes. Dry areas are inside partitions, ceiling voids, above grade stairs, and areas not subject to damage.
 - Conduit with inside size over 1 1/2" and/or exposed in mechanical rooms shall be galvanized steel heavy wall or IMC.
 - Conduits run under floor slabs and in contact with earth may be PVC Schedule 40.
 C. Provide full race installed (green) ground wire in all conduits. Where the drawings do not indicate the size of the electrical ground wire, it shall be sized per NEC. Provide bare ground wire in all PVC conduit runs.
 D. Boxes, outlets and cabinets:
 - Install equipment and materials in a neat and workmanlike manner and align, level and adjust for satisfactory operation. Install equipment so that all parts are easily accessible for inspection, operation, maintenance and repair. Provide the design, location, and erection of supplementary structural framing required for attachment of ladders or other devices supporting electrical equipment. Rigidity must all boxes and provide with suitable knock-out covers. Plug open knockouts or holes in boxes with suitable blanking device.
 - General all details with regard to ladders, framing, and trim. Symmetrically arrange outlets in the room. Satisfactory contact with properly installed or installed. Repair or replace damaged finishes. Set all boxes (jumps and inlets) and extend to the finished surface of the wall, ceiling or floor until projecting beyond same.
 E. Fire and Smoke Partition Penetration:
 - The Contractor shall familiarize himself with all fire rated construction and install his work so as to maintain the integrity of the fire code rating. Maximum rating of fire rated and smoke rated construction. Boxes shall be steel or pre-manufactured boxes similar to Pipe Boxes, etc., or bars pass through the walls and floors, model WFE, DFE or QDFE. For plastic boxes, use type WFE with one inch thick calcium silicate insulation encased in metal sleeve extension box with a steel cap. Seal annular space around conduit. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains the rated wall and floor integrity, similar to RFF, foam, Dow Corning "Fire Stop" or Pipe Shields, Inc., model WFE, DFE, or QDFE. For non-rated walls and partitions, use metal or glass floor insulation.
SECTION 16400 - SERVICE AND DISTRIBUTION
DESCRIPTION
 A. Work included:
 - Current transformer cabinet.
 - Main transformers.
 - A complete distribution system.
 - System grounding per local codes.
 - All work and charges required by a local utility company.
 - Dry type step down transformer.
 B. Service:
 - Incoming electrical service is as indicated on drawings.
 - Provide exterior main service entrance rated with where required by local authority.
 - Provide concrete encased service ladders where installed in PVC.
 - Underground service ladders shall be a minimum of 36" below grade, minimum 18" above grade and shall be 12" above grade. Transits to be above grade to permit access to three ladders where underground conduits shall be exposed above grade.
EQUIPMENT
 A. Main transformers shall be service approved and front accessible with a main lug, screw on cover plates. Grounding and shielding shall comply with the local utility code and all local code requirements.
 B. Panel boards shall be enclosed in steel cabinets, front and back, with a main lug, all heavy duty. Bus structures shall be copper or aluminum.
 - Main circuit breakers shall be bolt on type, minimum 1500 ampere, minimum 65,000 amperes symmetrical, with a main lug, shall not be determined, where allowed by authority having jurisdiction over the work.
 D. Panel boards shall be shown on the drawings with main lug, main breakers, branch breakers, fuses, and fuses as specified.
 - Panel boards shall be bolt on type.
 - The Contractor shall balance all circuits.
 - Panel boards shall be supplied by tenant's vendor.
 - Provide a printed directory for each panel, identifying the use of each circuit.
DRY TYPE TRANSFORMER
 A. Transformer shall be NEMA WP-1 energy efficient ventilated, as indicated on plans, typical 480V data primary to 120/208V, 30, 4 wire WYE secondary, 60 hertz, NEMA 1 enclosure.
 B. Wiring Aluminum 220° C insulation system, 150° ins.
 C. Normal 5% impedance.
 D. Tap 2 1/2 12% above and below normal.
 E. 75 KVA rated unless otherwise noted.

CONNECTIONS
 A. All main feeder connections shall be made with solderless connectors, bolted type. Branch wire terminations shall be made with pressure type connectors - Minnesota Mining "NOTCH LOCKS" or like "WINGNUTS".
INSTALLATION
 A. System Grounding:
 - Shall be in strict accordance with the National Electrical Code, Local Governing Authority and in accordance with the recommendations of the Utility Company. See details on drawings for additional grounding requirements.
 - All equipment grounding conductors and grounding electrodes shall be copper and comply with local and national codes.
 B. Electrical Service:
 - The Utility Company will furnish, install and connect all primary service conductors.
 - This contractor shall contact the Utility Company and Landlord to obtain all information necessary for the work, incorporate their instructions into the work, and obtain their approval of all work and material. Include all costs in base bid.
SECTION 16500 - LIGHTING SYSTEMS AND CONTROLS
DESCRIPTION
 A. Work included:
 - Contractor to install lighting fixture with lamps, hangers and controls as shown on Drawings and Lighting Fixture Schedule. Tenant will provide all lighting fixtures, lamps, sockets, fixture trim and accessories as required for a complete secure and working installation.
 B. Requirements:
 - All lamps shall be T-11 E-18 or E-26 variety of long type lamps, shall rated for 120v or 277v operation. All lamps shall be as indicated on the lighting fixture schedule.
 - All lamps ballasts drivers shall be electronic type (neglect to lamp finish hooding).
 - Provide all exit and emergency lighting as required by applicable codes(s).
 - All lighting circuit shall have dedicated neutral.
 - Emergency lighting shall be individual unit equipment in accordance with NEC 702.12.6.
 - Battery Inverter Unit (BIU) shall be UL listed, stand alone pure sine wave output inverter connected to one branch circuit and connected to LED lamps indicated on plans. Unit shall be in accordance with NEC 702.12.6 A.C.
 - Contractor shall connected LED strip fixture 4-wire hangers for operation of emergency lamp as individually controlled and as indicated on plans. Internal modification of emergency lamp fixture may be required.
SECTION 16700 - COMMUNICATIONS
DESCRIPTION
 A. Work included:
 1. Empty backboxes and conduit shall be furnished and installed by Contractor.
TELEPHONE SYSTEM/COMPUTER SYSTEM
 A. Telephone System Grounding Conductors: Furnish a 6S AWG, solid grounding conductor from telephone service equipment to electrical service ground bus system.
 B. Telephone Computer Grounding System: Furnish as indicated on the drawings including the following:
 - Telephone service conductors for underground service.
 - Other conductors as indicated on the Drawings. If any conductors are run from wall or heavy nylon cord in each room for pulling the telephone cable, it shall be a minimum of 12" above grade and shall be protected by a metal sleeve extension box with a steel cap. Seal annular space around conduit. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains the rated wall and floor integrity, similar to RFF, foam, Dow Corning "Fire Stop" or Pipe Shields, Inc., model WFE, DFE, or QDFE. For non-rated walls and partitions, use metal or glass floor insulation.
 C. No electrical conductors or power cables shall run over the communications cables and panels, except for telecommunication equipment light.
 D. The panel plan rated cable shall be installed by the contractor and in minimum space. As indicated on drawings.
 E. Method contractor shall provide sub-system.
DESCRIPTION
 A. Work included:
 - Furnish and install conduit system as indicated on drawings and that connection to be by the tenant's vendor. The system shall consist of appropriate conduits in locations as indicated, branch boxes, and all accessories required by the telephone company for complete installation.
TELEPHONE SYSTEM/COMPUTER SYSTEM
 A. Telephone System Grounding Conductors: Furnish a 6S AWG, solid grounding conductor from telephone service equipment to electrical service ground bus system.
 B. Telephone Computer Grounding System: Furnish as indicated on the drawings including the following:
 - Telephone service conductors for underground service.
 - Other conductors as indicated on the Drawings. If any conductors are run from wall or heavy nylon cord in each room for pulling the telephone cable, it shall be a minimum of 12" above grade and shall be protected by a metal sleeve extension box with a steel cap. Seal annular space around conduit. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains the rated wall and floor integrity, similar to RFF, foam, Dow Corning "Fire Stop" or Pipe Shields, Inc., model WFE, DFE, or QDFE. For non-rated walls and partitions, use metal or glass floor insulation.
 C. No electrical conductors or power cables shall run over the communications cables and panels, except for telecommunication equipment light.
 D. The panel plan rated cable shall be installed by the contractor and in minimum space. As indicated on drawings.
 E. Method contractor shall provide sub-system.
DESCRIPTION
 A. Work included:
 - Furnish and install conduit system as indicated on drawings and that connection to be by the tenant's vendor. The system shall consist of appropriate conduits in locations as indicated, branch boxes, and all accessories required by the telephone company for complete installation.

Order Plans @

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