ELECTRICAL SCOPE & GENERAL REQUIREMENTS

DIVISIONS 00 AND 01 ARE A PART OF THIS SECTION

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. All work under Section 26 01 00, Electrical Scope and General Requirements Specifications, are subject to the General, Supplementary, Special Conditions and other Division I Specification Sections preceding this section. This Contractor will be responsible for and govern by all requirements. Drawings indicate the general arrangement of the electrical layout and work included. The Contractor will follow Drawings in laying-out and checking of Drawings of other trades to verify locations and spaces in which work will be installed.

1.02 SCOPE

A. This portion of the work includes furnishing of all labor and materials necessary for a complete wiring system to outlets and all equipment shown on the Drawings or covered by this section of the Specifications. In general, the work includes the following:

1. Complete system of branch circuit wiring and equipment including all wiring devices and plates on all outlets.

2. A new lighting fixture system complete with lamps as shown on Plans including all appurtenances as required.

3. Raceways, wiring, fused disconnect switches, etc., for equipment covered by other sections of these Specifications.

4. All hangers, anchors, sleeves, chases and supports for fixtures, electrical equipment and materials including earthquake bracing.

5. All disconnection and removal of existing electrical facilities not to be reused.

6. Include payment of all required insurances, electrical permits, fees and taxes unless specifically shown "BY OTHERS".

1.03 SITE VISITATIONS

A. The Contractor will carefully examine the site and existing buildings, compare the Drawings with the existing electrical installations and thoroughly familiarize himself with all existing conditions within the scope of this work. By the act of submitting a bid, the Contractor will be deemed to have made such examination, accepted such conditions and to have made allowance in preparing his figure.

1.04 RULES AND REGULATIONS

A. All work and materials shall be in full accordance with the latest rules and regulations of the following:

1. California Electric Code, 2022 Edition
2. California Building, Mechanical and Plumbing Codes
3. California Code of Regulations
4. California State Fire Marshal Rules

B. Before the Final Certificate of Payment will be issued, the Contractor shall deliver to the Owner all Certificates, Permits, Record Drawings and Instructions/Parts Manuals.

C. Nothing in these Plans and Specifications is to be construed to permit work <u>not</u> conforming to these codes.

1.05 MATERIALS AND SUBSTITUTIONS

A. All equipment and materials shall be new and UL (Underwriters Laboratories) approved and of the best quality. When specific trade names are used in connection with materials they are mentioned as standards but, this implies no right upon the part of the Contractor to substitute other materials or methods without <u>prior</u> approval.

B. When approval is given for use of equipment differing from that shown on the Drawings regarding foundations, space of piping, duct work, wiring, insulation, etc., changes required to accommodate such differences shall be accomplished at <u>no cost to the Owner</u>.

C. This Contractor shall order equipment in a timely manner to prevent any delays in the construction schedule and he shall bear any penalty by vendors to meet schedules.

D. <u>Submittals:</u>

1. Shop Drawings and Product Data: Within ten days after an award of this contract, but prior to manufacture or installation of any equipment, prepare complete Shop Drawings and Brochures for materials/equipment as required by each section of the Specification. Submit eight complete sets for review.

2. Prior to submission of the Shop Drawings and Project Data review and certify that they meet the Contract Documents and conform to existing field conditions. Field verify installation methods, voltage requirements and coordinate with other trades.

3. Verify all dimensional information to ensure proper clearance installation of equipment. Check all materials and equipment after arrival on the jobsite and verify compliance with the Contract Documents. A minimum period of two weeks, exclusive of transmittal time, will be required each time Shop Drawings and/or Brochures are submitted or resubmitted for review. This time shall be considered by the Contractor when scheduling a submittal date.

4. Review of Shop Drawings and Brochures shall not relieve the Contractor of responsibility for dimensions and/or errors that may be contained therein or deviations from the Contract Documents requirements. It shall be clearly understood that noting of some errors, but overlooking others, does not grant the Contractor permission to proceed in error. Regardless of any information contained in the Shop Drawings and Brochures the requirements of the Contract Documents shall govern and are not waived or superseded in any way by the review of the Shop Drawings and Brochures.

5. Certifications shall be written or in the form of rubber stamp impressions as follows:

> I hereby certify that these Shop Drawings and/or Brochures have been checked prior to submittal, and that it complies in all respects with the requirements of the Contract Drawings, Specifications, and existing field conditions for this project.
>
> (Name of Contractor)
>
> _____
> Signed _____
> Title _____Date _____

6. Observe the following rules when submitting the Shop Drawings or Brochures:

   a) Each Shop Drawing shall indicate in the lower right-hand corner and each brochure shall indicate on the front cover the following:
      1) Title of the sheet or brochure
      2) Name and location of the building
      3) Names of the Architect
      4) Name of the Electrical Engineer
      5) Name of Contractor
      6) Subcontractor's Manufacturer, Supplier and Vendor
      7) Date of submittal
      8) Date of correction and revision.

7. Unless the above information is included, the submittal will be returned for resubmittal.

8. Shop Drawings shall be done in legible scale and shall contain sufficient plans, elevations, sections and isometrics clearly describing the equipment or apparatus and the Engineer/ Draftsmen skilled in this type of work. Shop Drawings shall be drawn to at least 1/4" = 1'-0" scale.

9. The manufacturers shall publish brochures to be submitted which contain complete and detailed engineering and dimensional information. Brochures submitted shall contain only information relevant to the particular equipment or materials to be furnished. The Contractor shall not submit catalogs that describe several different items in addition to those items to be used unless all irrelevant information is marked out or unless each manufacturer is identified and submitted separately.

1.06 GENERAL COORDINATION

A. The Drawings indicate diagrammatically the desired location or arrangement of conduit runs, outlets, equipment, etc., and are to be followed as closely as possible. It shall be the Contractor's responsibility to verify and coordinate the location of all outlets and raceways with other trades.

1.07 CUTTING, PATCHING AND MATCHING

A. This Contractor shall do all cutting required for the proper installation of his work and shall repair any damage done by himself or his workmen. The Contractor shall coordinate with that of other parties.

B. Wherever possible, work shall be done in a concealed and neat workmanlike manner requiring the least amount of cutting of studs, plates and woodwork. Such cutting or notching is allowed only after consultation with and by permission of the Engineer.

C. All patching shall be of the same materials, workmanship and finish as existing and shall accurately match all surrounding work. All work shall be done under the Architect's instructions and when required by the trade that did the original work.

1.08 INTERPRETATION OF Drawings AND Specification

A. The Engineer's decision will be final on interpretation of the Drawings and Specifications. Whenever the words "AS MAY BE DIRECTED", "SUITABLE" or "APPROVED EQUAL" or other words of similar intent and meaning are used inferring that judgment is to be exercised, it is understood that it is the judgment of the Engineer referred to.

1.09 CLEANING OF EQUIPMENT, MATERIALS AND PREMISES

A. All electrical equipment shall be thoroughly cleaned of dirt, rust, cement, plaster, etc., and all cracks and corners scraped out clean. Surfaces to be painted shall be carefully cleaned of grease and oil spots and left smooth and clean and in proper condition to receive paint finish.

1.10 RECORD Drawings

A. At the beginning of the project, one full-sized print of each applicable Drawing will be issued to the Contractor for use in preparing Record Drawings. "RECORD" conditions shall be recorded on the prints as the project progresses. Upon completion of the work, the Contractor shall forward it to the Architects' Office after first securing the Inspector's verification by signature.

1.11 EARTHQUAKE RESTRAINT

A. All electrical equipment shall have a means to prohibit excessive motion during an earthquake.

1.12 IDENTIFICATION

A. Conductors:

1. All power and signal conductors shall be identified in accordance with the following schedule:

a) 120/208 Volts, 3-phase, 4-wire Wye: Red-Black-Blue, Neutral White.

b) 277/480 Volts, 3-phase, 4-wire Wye: Brown-Orange-yellow, Neutral Grey.

c) Bond or grounding conductor (GWG): Green

d) Special system conductors shall be color coded and labeled

2. Brady Labels shall be used to identify terminals and destination of feeders, branch circuits, signal and control circuits, etc., at all terminations and junction boxes and shall be coordinated with the nameplates in all boxes and equipment.

3. All terminals in the switchboards, panels, relays, switches, devices, starter terminals, etc., shall have Brady Labels for identification to identify both ends of all wiring. Wires #8 and smaller to be terminated on terminal strips squared-type 9080K with white marking strip and screw lugs for wire size.

B. Nameplates: The Contractor shall furnish and install 1" x 3" x 3/32" thick laminated black Bakelite nameplates with a white core, unless specifically shown as red with a white core, engraved to produce white letters on black background for all items of electrical equipment including 2-pole and 3-pole circuit breakers, panelboards, starters, relays, time switches and disconnect switches. They shall screw them in place.

C. Panels: Panels having single-pole circuit breakers shall be provided with typed schedules mounted in welded metal holders behind plastic.

D. Devices: All devices shall have their branch circuit identified on the back side of device plate with a permanent type black marker, i.e., CT A-21.

1.13 MECHANICAL AND OTHER SPECIAL EQUIPMENT

A. Mechanical Coordination: PRIOR to commencing construction, this Contractor shall arrange a conference with the Mechanical/Plumbing Contractors and equipment suppliers to verify type, sizes, locations, requirements, controls and diagrams of all equipment furnished by them. In writing, he shall inform the Electrical Engineer that all phases of coordination of this equipment have been covered. If any unusual conditions or problems, they are to be enumerated them at this time.

B. Mechanical Wiring: All electrical line voltage wiring, fused disconnects and conduits shall be furnished and installed by this Contractor unless otherwise shown.

C. Miscellaneous Equipment: Contractor shall be responsible for electrical hook-up and connection to all electrical equipment whether furnished by this Contractor or others. This includes all special mechanical equipment and equipment furnished by the Mechanical Contractor.

1.14 GUARANTEE

A. This Contractor agrees to replace or repair to the satisfaction of the Owner, any part of the installation that may fail due to defective material and/or workmanship, or failure to follow Plans and Specifications for one year after final acceptance. He shall further obtain from the manufacturers of special equipment (i.e., control systems) their respective guarantees and service manuals and deliver to Owner.

PART 2 PRODUCTS

2.01 RACEWAYS

A. Unless specifically shown otherwise, this Contractor shall furnish and install a complete steel conduit system for all wiring, including control and signal wiring.

B. All conduits shall be rigid threaded hot dipped galvanized type.

C. All conduits installed underground shall have a minimum coverage of 1'-6" below finished grade and shall have a 4" concrete envelope.

D. Steel conduit Joints shall be sealed with conductive pipe compound T & B Kopr-Shield before making up.

E. Steel conduits installed below grade shall be wrapped with Minnesota Mining Company Scotch Wrap #51 using half-lap for double thickness. Conduit surfaces shall be clean and dry before wrapping.

F. Minimum size for lighting, power and signal shall be a 3/4" conduit.

G. Steel EMT sizes 4" and smaller may be used within hollow dry spaces of the building, and shall not be run exposed below 8' above a finished floor.

H. All raceway fittings, locknuts, couplings, elbows, etc., shall be hot dipped galvanized steel finish with plastic throats or bushings. No cast-type fittings shall be used.

I. Seal-type flexible conduit shall be used in lengths not greater than 18" at motors and other machinery to prevent the transmission of vibration. All flexible conduits shall have a copper bond wire either integral or pulled in. Flexible conduit shall be supported at both ends and every 24".

J. All conduit fittings, locknuts, couplings, elbows, etc., shall be hot dipped galvanized finish with plastic bushings. No competitive type fittings shall be used.

K. Non-Metallic Conduit.

1. Rigid non-metallic PVC, UL Labeled conduit with factory ells and fittings approved for the purpose may be used under the following conditions:
   a) Where the voltage is 600 Volts or less.
   b) All conduits in earth under buildings or protected by permanent paving may be Schedule 40 PVC.
   c) Any conduit running through planters or unprotected in earth shall be encased in 3" of concrete. All raceways above grade shall be steel.

d) All non-metallic runs shall have a bond wire for the interconnection of all conducting portions per Table 250-94 of the California Electric Code (CEC).

e) Use factory elbows. PVC shall not be bent in the field.

2.02 CONDUCTORS

A. All conductors shall be delivered to the site in their original unbroken packages plainly marked or tagged as follows: UL Labels, size, kind and insulation of wire, name of the manufacturing company and trade name of the wire.

B. All conductors to be a minimum of 98% conductivity soft drawn copper, minimum #12 AWG unless shown otherwise. Conductors #8 and larger shall be stranded type "THHN/THWN" 600 Volt insulation. Conductors #10 and smaller shall be solid copper "THHN/THWN".

C. All branch circuits, fixture wiring joints, splices and taps for conductors #10 and smaller to be made with "SCOTCHLOCK" connectors.

D. Two bolt type solderless connectors or T & B "color keyed“ compression lugs shall be used on #8 and larger conductors.

2.03 WIRING DEVICES

A. Furnish and install wiring devices and plates as shown on the Drawings and described in these Specifications. Where more than one wiring device is mounted in the same location, such devices shall be mounted in a multi-gang plate. Single-gang combination interchangeable devices shall not be used. Wiring devices shall be Specification grade or better.

B. Convenience outlets shall consist of a Specification grade duplex receptacle mounted in an outlet box in the wall flush with the finished plaster or surface rated 20 AMPS, 125 Volts, 3-wire, back and side wired.

C. Local switches shall be quiet toggle-type, totally enclosed, AC rated ,20 AMPS, 120/277 Volt.

D. Device plates shall be provided for all devices with the number of gangs and openings necessary. They shall be satin brushed stainless steel in toilets and kitchens with plastic to match devices in other finished areas.

2.04 OUTLET BOXES

A. Outlet boxes for concealed work shall be one piece pressed steel knock out type with zinc or cadmium coating. Boxes shall not be smaller than 4" square nominal size unless otherwise indicated. Provide extension rings, plaster rings and covers necessary for flush finish.

B. Bar hangers shall be used to support outlet boxes in stud or furred partitions and ceilings. Attachment screws, devices, etc., shall be of the proper type to secure boxes to metal studs. Use expansion shields to concrete and masonry.

C. Provide approved knock-out seals on all unused open knock-out holes. Where used for lighting fixtures outlet boxes shall be equipped with fixture studs.

2.05 DISCONNECTING DEVICES

A. Disconnecting devices shall be provided as shown or as required by NEC. Switches shall be motor rated and in proper NEMA enclosure.

1. Motors 1/3 HP and less: Switches shall be of the toggle-type quick make and break rated 2 HP, 250 Volts AC with the number of poles required provided with flush mounting wall plates or in suitable surface mounting NEMA enclosures.

2. Motors ½ HP and larger: Disconnecting switches shall be Type HD fused 3-pole, 600 Volts in proper NEMA enclosures with proper size FRN fuses. Provide three spare fuses of each type to the Owner.

B. Circuit breakers utilized as disconnecting devices shall comply with the requirements stated in other articles of this section and NEC.

2.06 PULL BOXES AND WIREWAYS

A. Pull and junction boxes shall be installed as shown to ease the pulling of wire and to comply with NEC requirements.

B. Wireways to be constructed in accordance with UL 870 for wireways, auxiliary gutters and associated fittings. Every component including lengths, connectors and fittings shall be UL listed.

2.07 TERMINAL CABINETS AND CLOSETS

A. Cabinets and fronts shall be in accordance with NEMA Standard Publication No. PB1-1971 and UL Standards No. 67. Fronts shall include doors and have flush brushed stainless steel cylinder tumbler-type locks with catches and spring loaded door pulls. The flush lock shall not protrude beyond the front of the door. All locks shall be keyed like the panelboard locks. Fronts shall have adjustable indicating trim clamps completely concealed when the doors are closed. Doors shall be mounted by completely concealed steel hinges. Fronts shall not be removable with the door in the locked position. A frame and card with a clear plastic covering shall be provided on the inside of the door. Fronts shall be of code gauge full finished steel with rust inhibiting primer and bake enamel finish.

2.08 PANELBOARDS

A. Furnish panelboards shown on Plans and described herein. All cans shall be a minimum of 20" wide and 5.75" deep unless otherwise shown. They shall be totally flat or equal with flush keyed locks.

B. Panelboards shall be UL listed.

C. Breakers for switching lights shall be rated for switching duty.

D. Fronts shall be sheet steel painted standard gray over a rust inhibitor. They shall be equipped with a door, flush hinges, flush proper cylinder tumbler lock; metal circuit card holder and quarter turn adjustable trim clamps.

E. The panel shall consist of reinforced galvanized sheet steel frame with copper bus bars and circuit breakers properly supported to prevent vibration breakage in handling. All terminals shall be solderless type suitable for specified conductors of size indication. Bus bars shall be sequence phased.

F. Branch circuit breakers shall be "bolt-on" and fully interchangeable without disturbing adjacent units. All 2 and 3-pole breakers shall have common trips with a minimum IC of 10,000 AIC.

G. All breakers applying fluorescent or HID fixtures shall have padlock handle lock-off devices.

H. All spaces shall have hardware.

I. Provide separate blocks for neutrals and grounds as required.

PART 3 EXECUTION

3.01 INSTALLATION

A. The layout and installation of electrical work shall be coordinated with the overall construction schedule to prevent delay in completion of the project.

B. Dimensions and information regarding accurate locations of equipment and structural limitations and finish shall be verified with other sections.

C. The Drawings do not show all the offsets, bends, special fittings or junction pull boxes necessary to meet job conditions and shall be provided as required.

D. Electrical equipment, outlets, junction and pull boxes shall be installed in accessible locations, avoiding obstructions, preserving headroom and keeping openings and passageways clear.

E. Minor adjustments in the locations of equipment shall be made where necessary providing such adjustments do not adversely affect function of the equipment. Major adjustments for the location of equipment shall be previously approved and detailed on the Record Drawings.

3.02 STRUCTURAL FITTINGS

A. Furnish and install the necessary sleeves, inserts, hangers, anchor bolts and related structural items. Install at the proper time.

3.03 NOISE CONTROL

A. Outlet boxes at opposite sides of partitions shall not be placed back-to-back, nor shall through boxes be employed except where specifically permitted on the Drawings by note to minimize transmission of noise between occupied spaces.

B. Ballasts, contactors, starters and like equipment that are noticeably noisier than other similar equipment on the project will be deemed defective and shall be replaced at Engineer's request.

3.04 RACEWAYS AND FITTINGS

A. Surface raceways shall be coordinated with cabinet work. It shall be installed plumb and square with adjacent surfaces.

B. Minimum size of any conduit for lighting, power and signal shall be 3/4" conduit unless shown otherwise.

C. Furnish and install "seal-offs" in all conduit runs through areas of different temperature.

D. Where applicable, wiring methods shall be in accordance with requirements for installation in damp and/or hazardous areas.

E. All concealed conduits shall be installed in as direct a line as possible between outlets. EMT shall be approved for dry locations with steel plastic bushed set screw fittings. No more than four quarter bends or their equivalent will be allowed between outlets. Feeder conduits shall follow arrangements shown on plans unless a change is authorized. Branch circuit conduits shall in general follow arrangement as shown as far as structural conditions permit. All exposed runs shall parallel buildings, walls or partitions and be supported on Kindorf Hangers to meet Title 24, Part 6, CAC.

F. In general, all conduits shall be sloping to drain. Bends that place a trap in a conduit shall be avoided. Provide drip fitting as required. Dux-Seal high ends of all underground raceways.

G. All conduit runs shall be mechanically and electrically continuous from outlet to outlet. Conduit size or type shall not be changed between outlets.

H. Chrome escutcheon plates shall be used on all conduit penetrating walls, floors or ceilings.

I. Expansion joints shall be provided at building expansion joints or as required due to length of run or difference in temperatures.

J. Flexible steel conduits shall be used for short runs not over 24" from motors or other vibrating equipment to junction boxes. Where specifically approved by the Engineer, flexible steel conduit may be used when conditions make the use of other conduit impracticable. Fittings shall be of the screwed wedge type. All flex shall have green copper bond wire. Flex conduits shall be independently suspended.

K. All fittings that are exposed or in damp areas shall have sealing glands and proper gaskets. Fittings in hazardous areas shall be of the type approved for the particular hazard.

L. Roof Penetrations: Where raceways penetrate roofing or similar structural area, provide 26 galvanized iron roof jacks sized to fit tightly to a raceway for a weather-tight seal and with flange extending a minimum of 9" under roofing on all sides. Completely seal openings between inside diameters of roof flashing and outside diameters if penetrating raceways. Coordinate with work required under Roofing Section of the Specifications.

M. Fire Penetration Seals: Seal all penetrations for work of this section through fire rated floors, walls and ceilings to prevent the spread of smoke, fire, toxic gas or water through the penetration either before, during or after the fire. The fire rating of the penetration seal shall be at least that of the floor, wall or ceiling into which it is installed so that the original fire rating of the floor or wall is maintained as required by Article 300-21 of the California Electrical Code (CEC).

N. Where applicable, provide OZ Type CFSF/I and CAFSF/I fire seal fittings for conduit and cable penetrations through concrete and masonry walls, floors, slabs and similar structures. Where applicable, provide 3M fire barrier sealing penetration system and/or Thomas & Bett Flame Safe Fire Stop System and/or ChaseFoam fire stop system including wall wrap, partitions, caps and other accessories as required. All manufacturers' instructions and recommendations for installation of sealing fittings and barrier sealing systems.

3.05 CONDUCTORS AND CONNECTORS

A. All branch circuits and fixture wiring joints, splices and taps for conductors #10 and smaller shall be made with 3M "Scotchlocks" or approved equal.

B. Circuit and signal terminations to single-screw or push-on terminals shall be done with insulated "Sta-Kons" or approved equal terminals.

C. Bolt-type solderless connectors shall be torqued with a torque wrench according to the manufacturer's recommendations then retightened after 24-48 hours before taping. Owners' inspector shall be informed of this procedure during the waiting period and shall witness the act of retightening.

D. All splices shall be taped with Scotch #88 plastic electrical tape with “Scotch Fill” where necessary for a smooth joint. For other than normal temperatures or conditions

Scotch #27 or #2520 shall be used. All connections and splices shall be electrically perfect and in strict accordance with all code requirements.

E. Wire in panels, cabinets, pull boxes and wiring gutters shall be squared, labeled and neatly grouped with "Ty-Raps" and fanned out to the terminals.

F. Wiring Devices: Wiring devices shall be securely fastened to the outlet box. Where the outlet box covers are back from the finished walls, device shall be built out with washers so that it is rigidly held in place to the box. Provide metal extenders in flammable construction per CEC. All device screw slots shall be left in a vertical orientation.

3.06 OUTLET BOXES

A. Outlet boxes for concealed work shall be one steel knock-out type with zinc coating. Boxes shall not be smaller than 4" square nominal size unless otherwise indicated. Provide extension rings, plaster rings and covers necessary for flush finish.

B. Bar hangers shall be used to support outlet boxes in stud or furred partitions and ceilings. Attachment screws, devices, etc., shall be of the proper type to secure boxes to metal studs complemented by expansion shields to concrete and masonry.

C. Provide approved knock-out seals on all unused open knock out holes. Where used for lighting fixtures, outlet boxes shall be equipped with fixture studs.

3.07 JUNCTION AND PULL BOXES AND WIREWAYS

A. Boxes shall be installed square and plumb. An engraved nameplate shall be installed indicating the function of each box on the exterior in unfinished areas and on the interior in finished areas.

B. Install wireways with strip-type connectors with self-retained mounting screws. Use hangers with two-piece hook-together features to permit preassembling of wireway and hanger bottom plate before hanging on a preinstalled upper bracket.

3.08 TERMINAL CABINETS AND CLOSETS

A. Install level and identify per schedule.

B. All conductors shall be squared, labeled and "Ty-Rapped".

C. Location:

1. Unless otherwise indicated on the Drawings, install all panels with the top of the trip 6'-0" above the finished floor.

2. Space permitting, surface mount panels where they are not visible to the public.

3. Panels to have protective cover over any electrical panel with overhead water piping. Cover to be 18" by width of a panel.

D. Directory: Mount a typewritten directory behind glass or plastic in a metal holder welded to the inside of each panel door showing circuit numbers and complete description of all outlets (one each circuit).

3.09 PRECAST CONCRETE PULL BOXES AND MANHOLES

A. Contractor shall provide a minimum of 3-6" of sand base material suitable to receive the manhole. The base material shall be impacted and graded level at proper elevation to receive the manhole in relation to the conduit grade or ground cover requirements as designated in the Plans. Sealants used between the joints of the manhole are at the Contractor's discretion unless otherwise specified. If grout is used it should consist of two-parts plaster sand to one-part cement with sufficient water added to make the grout flow under its own weight.

B. The grout should be poured into a water soaked groove and filled to the top of the groove unless a double amount is to be used as a further precaution against leakage. In this case the mastic sealant should be placed on the two shoulders of the groove. The next section of manhole should be placed while the foaming action is in process. Contractor shall verify grades with the Architect and shall set holes and boxes level at proper grades.

C. All conduits penetrating the pull box shall have seals to prevent water from entering the raceway.

3.10 DISCONNECT DEVICES

A. Disconnect devices shall be identified as to location of the device controlled.

3.11 SUPPORTS AND ANCHORS

A. Provide inserts, anchors, supports, rods, brackets and miscellaneous items to adequately support and secure the electrical systems and equipment.

B. Secure hangers, brackets, conduit straps, supports and electrical equipment to surfaces by means of toggle bolts on hollow masonry; expansion shields and machine screws or standard preset inserts on concrete or masonry; machine screws or bolts on metal surfaces; wood screws on wood construction.

C. Power driven or velocity driven inserts may be not used unless specifically approved by the engineer, and where their use does not affect finished appearance of work.

They may not be used in prestressed slabs, beams, purlins, precast members or in tension.

D. Seismic Requirements: Provide vertical and lateral supporting equipment to resist application of seismic forces per CAC, Title 24.

END OF SECTION 26 01 00