

SYMBOL LIST		
SYMB.	DESCRIPTION	MOUNTING OR AS INDICATED
	POLE MOUNTED LIGHT FIXTURE	POLE
	DUPLEX RECEPTACLE (15 AMP)	WALL - 18" AFF
	JUNCTION BOX	ABOVE CEILING
	PULL BOX	
	CONDUIT MARKER	
	SAFETY SWITCH (NON-FUSED)	AS NOTED
	SAFETY SWITCH (FUSED)	AS NOTED
	'HOME RUN' W/1 HOT AND 1 NEUTRAL	① WALL OR CEILING
	'PARTIAL HOME RUN' W/1 HOT AND 1 NEUTRAL	① WALL OR CEILING
	CONDUIT RUN W/3 HOTS & 1 NEUTRAL	① WALL OR CEILING
	CONDUIT RUN W/3 HOTS, 1 NEUTRAL AND ISOLATED GROUND	① WALL OR CEILING
	CONDUIT RUN W/3 HOTS, 1 NEUT., 1 GRD.	① FLOOR OR EARTH

① CONDUIT SIZE SHALL BE MINIMUM 3/4". CONDUCTOR SIZE SHALL BE MINIMUM No. 10 CU AWG. CONDUIT AND CONDUCTOR SIZES INDICATED AT 'HOME RUN' SHALL BE CARRIED THROUGHOUT ENTIRE CIRCUIT RUN, UNLESS NOTED OTHERWISE ON PLANS.

ABBREVIATIONS	
ABBR.	DESCRIPTION
a,b,c,...	SWITCHING SCHEME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
E	INDICATES DEVICE ON EMERGENCY CIRCUIT
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
HP	HORSE POWER
MCP	MOTOR CIRCUIT PROTECTOR (MAGNETIC TRIP)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
SS	STAINLESS STEEL
TM	THERMAL MAGNETIC
W	WALL MOUNTED
WP	WEATHER PROOF

LIGHT FIXTURE SCHEDULE

FIXT. LTR.	MANUFACTURER	CATALOG NUMBER	LAMPS		FIXT. VOLT.	FINISH	MOUNTING	WATT	REMARKS
			NO.	TYPE					
A	AAL	ALN445D-H2-400MH-TRA2L-DB105R25-250	1	400W MH	480	BLACK	POLE	500	

NOTE: ALL FIXTURE HARDWARE ACCESSIBLE TO THE PUBLIC SHALL BE TAMPER RESISTANT. NO EXCEPTIONS.

- LIGHTING FIXTURE SCHEDULE NOTES:**
- VERIFY ALL LIGHTING FIXTURE LOCATIONS, FINISHES, AND VOLTAGE WITH ENGINEER PRIOR TO INSTALL.
 - ALL HID FIXTURES SHALL BE "BURNED-IN" AS PER LAMP MANUFACTURER'S RECOMMENDATIONS TO INSURE PROPER LAMP LIFE.
 - SUBMIT LIST OF LAMPS FOR ENGINEER'S REVIEW WITH TYPE OF LAMP AND MANUFACTURER TO BE USED FOR EACH FIXTURE LISTED PRIOR TO ORDERING. LAMP TO BE MATCHED WITH FIXTURE.
 - ALL FIXTURE HARDWARE ACCESSIBLE TO THE PUBLIC SHALL BE TAMPER RESISTANT. NO EXCEPTION.
 - FIXTURE SUBSTITUTIONS: **NOT ALLOWED.**
 - ALL FIXTURES SHALL BE "U.L." LABELLED. ALL LIGHTING FIXTURES EXPOSED TO WEATHER OR MOISTURE SHALL BEAR U.L. "WET LOCATION" LABEL, AND LIGHTING FIXTURES EXPOSED TO DAMPNESS SHALL BEAR U.L. "DAMP LOCATION" LABEL.
 - ELECTRICAL CONTRACTOR SHALL CHECK AND COORDINATE ALL LIGHTING FIXTURE CATALOG NUMBERS WITH THE INTENT OF FIXTURE DESCRIPTIONS, LISTED ACCESSORIES AND TYPE OF INSTALLATION.

ELECTRICAL SPECIFICATIONS

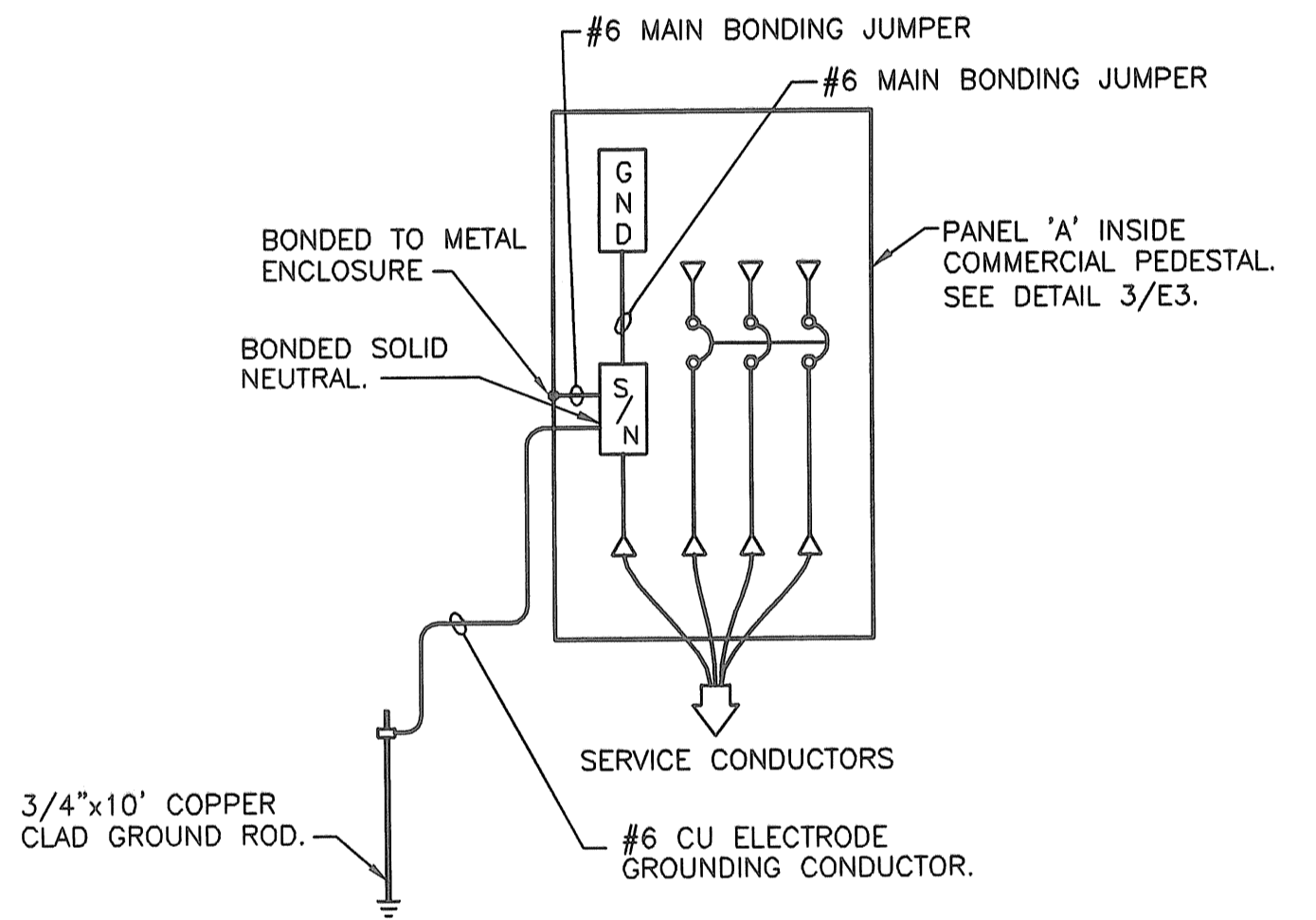
- SCOPE OF SERVICES**
WORK SHALL INCLUDE THE FURNISHING AND INSTALLING OF COMPLETE FUNCTIONING SYSTEMS AS INDICATED ON THE DRAWINGS AND THESE SPECIFICATIONS, OR REASONABLY INFERRED; INCLUDING EVERY ARTICLE, DEVICE OR ACCESSORY NECESSARY TO FACILITATE EACH SYSTEM FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED.
- MATERIAL AND WORKMANSHIP**
ALL MATERIAL AND APPARATUS SHALL BE NEW AND IN FIRST CLASS CONDITION. ALL WORKMANSHIP SHALL BE OF THE FINEST POSSIBLE BY EXPERIENCED ELECTRICIANS OR JOURNEYMEN. ALL TOOLS, MACHINERY AND EQUIPMENT REQUIRED OF THE PERFORMANCE OF THE ELECTRICAL WORK SHALL BE FURNISHED BY THIS CONTRACTOR.
- COORDINATION**
THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS AND SUBCONTRACTORS SO THAT VARIOUS COMPONENTS OF THE ELECTRICAL SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO ALL EQUIPMENT. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND TO RELEVANT EQUIPMENT DRAWINGS TO DETERMINE THE EXTENT OF CLEAR SPACES.
- ORDINANCES AND CODES**
CONTRACTOR'S PERFORMANCE, WORKMANSHIP AND MATERIALS SHALL COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION CODES STATE AND LOCAL BUILDING CODES, AND/OR ALL OTHER APPLICABLE CODES AND ORDINANCES. ALL PERMITS, LICENSES AND FEES THAT ARE REQUIRED BY THE GOVERNING AUTHORITIES FOR THE PERFORMANCE OF THE ELECTRICAL WORK SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
- TESTING, CHECK-OUT AND CLEANING**
ALL MOTORS SHALL BE VERIFIED FOR PROPER ROTATION. PRIOR TO START-UP OF THE ELECTRICAL SYSTEMS, THE CONTRACTOR SHALL CHECK ALL COMPONENTS AND DEVICES, LUBRICATE ITEMS ACCORDINGLY, AND TIGHTEN ALL SCREWED AND BOLTED CONNECTIONS. ADJUST TAPS ON EACH TRANSFORMER FOR RATED SECONDARY VOLTAGE. BALANCE ALL SINGLE PHASE LOADS AT EACH PANELBOARD, REDISTRIBUTING BRANCH CIRCUIT CONNECTIONS UNTIL BALANCE IS ACHIEVED. REPLACE ALL BURNED-OUT LAMPS. THE CONTRACTOR SHALL CLEAN ALL MATERIAL AND EQUIPMENT INSTALLED UNDER THE ELECTRICAL CONTRACT. DIRT, DUST, PLASTER, STAINS AND FOREIGN MATTER SHALL BE REMOVED FROM ALL SURFACES.
- GUARANTEE**
GUARANTEE AGAINST DEFECTIVE WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL PAYMENT. GUARANTEE SHALL INCLUDE MATERIAL TO BE REPLACED AND ALL LABOR REQUIRED.
- CUTTING AND PATCHING**
THIS CONTRACTOR SHALL DO ALL CUTTING OF WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED TO INSTALL WORK UNDER THIS SECTION. CONTRACTOR SHALL PATCH WALLS, FLOORS, ETC. TO MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION.
- DEMOLITION**
REMOVE ALL EXISTING WIRING, FIXTURES, EXPOSED CONDUITS AND OTHER ELECTRICAL INSTALLATIONS NOT REUSED.
- CONDUIT UNDERGROUND**
SCHEDULE 40 PVC WITH IMC TRANSITION TO ABOVE GRADE.

EXTERIOR: IMC
INTERIOR: EMT

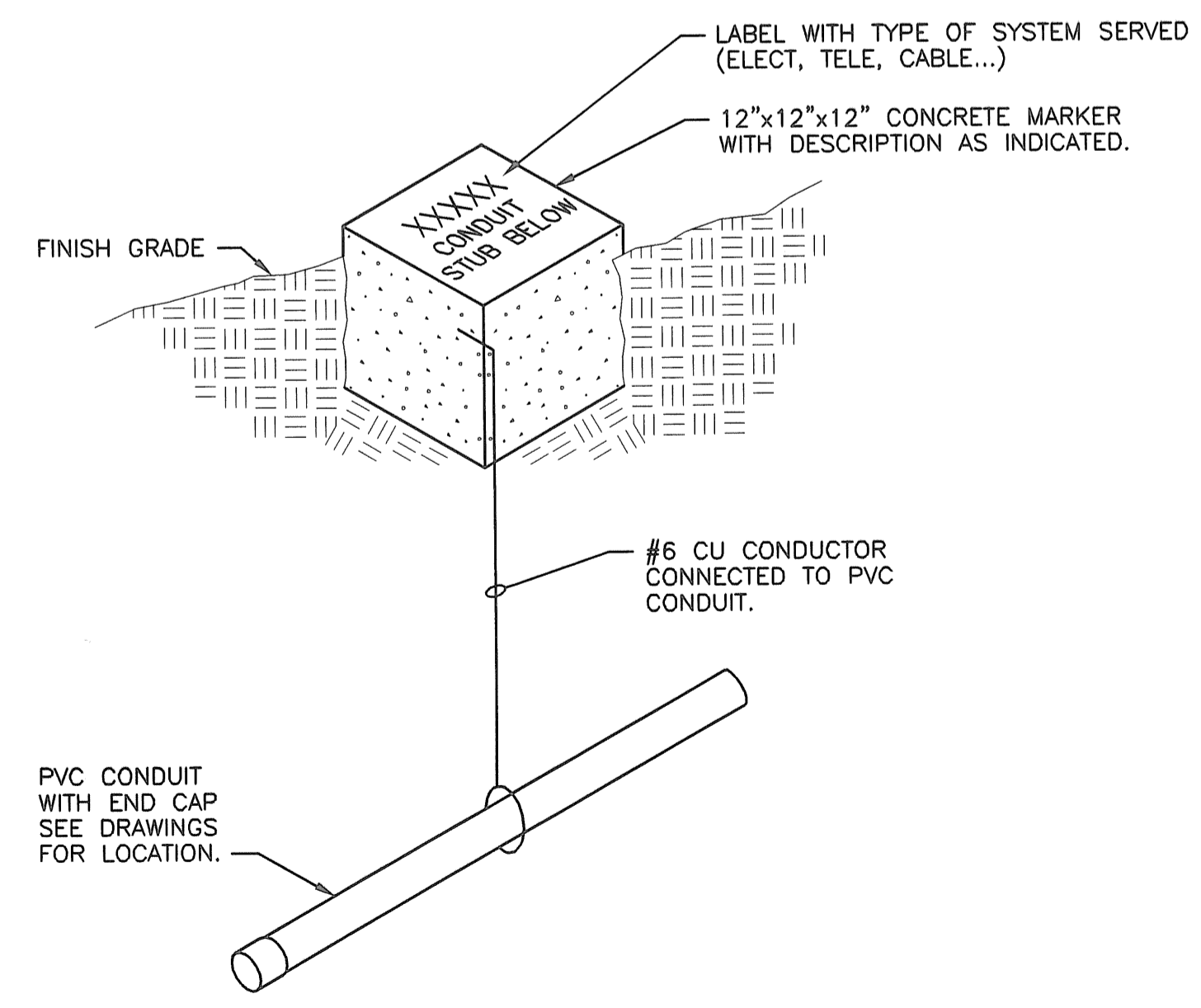
FLEXIBLE METALLIC CONDUIT: CONNECTIONS TO MOTORS AND TRANSFORMERS, AND TO ANY DEVICE WHICH WOULD OTHERWISE TRANSMIT MOTION, VIBRATION OR NOISE

LIQUID-TIGHT: CONNECTIONS TO MOTORS AND TRANSFORMERS, AND TO ANY DEVICE WHICH WOULD OTHERWISE TRANSMIT MOTION, VIBRATION OR NOISE, WHERE EXPOSED TO LIQUIDS
- CONDUIT INSTALLATION**
ALL WIRING SHALL BE RUN IN CONDUIT. CONDUIT SHALL BE INSTALLED CONCEALED ABOVE SUSPENDED CEILINGS OR CONCEALED IN WALLS OR FLOORS WHEREVER POSSIBLE. RUN PARALLEL TO BUILDING LINES. CONDUITS SHALL BE SECURELY FASTENED IN PLACE WITH APPROVED STRAPS, HANGERS AND STEEL SUPPORTS. CONNECTORS AND COUPLINGS SHALL BE COMPRESSION TYPE FOR SIZES 3/4" AND SMALLER AND SETSCREW FOR ALL OTHERS.

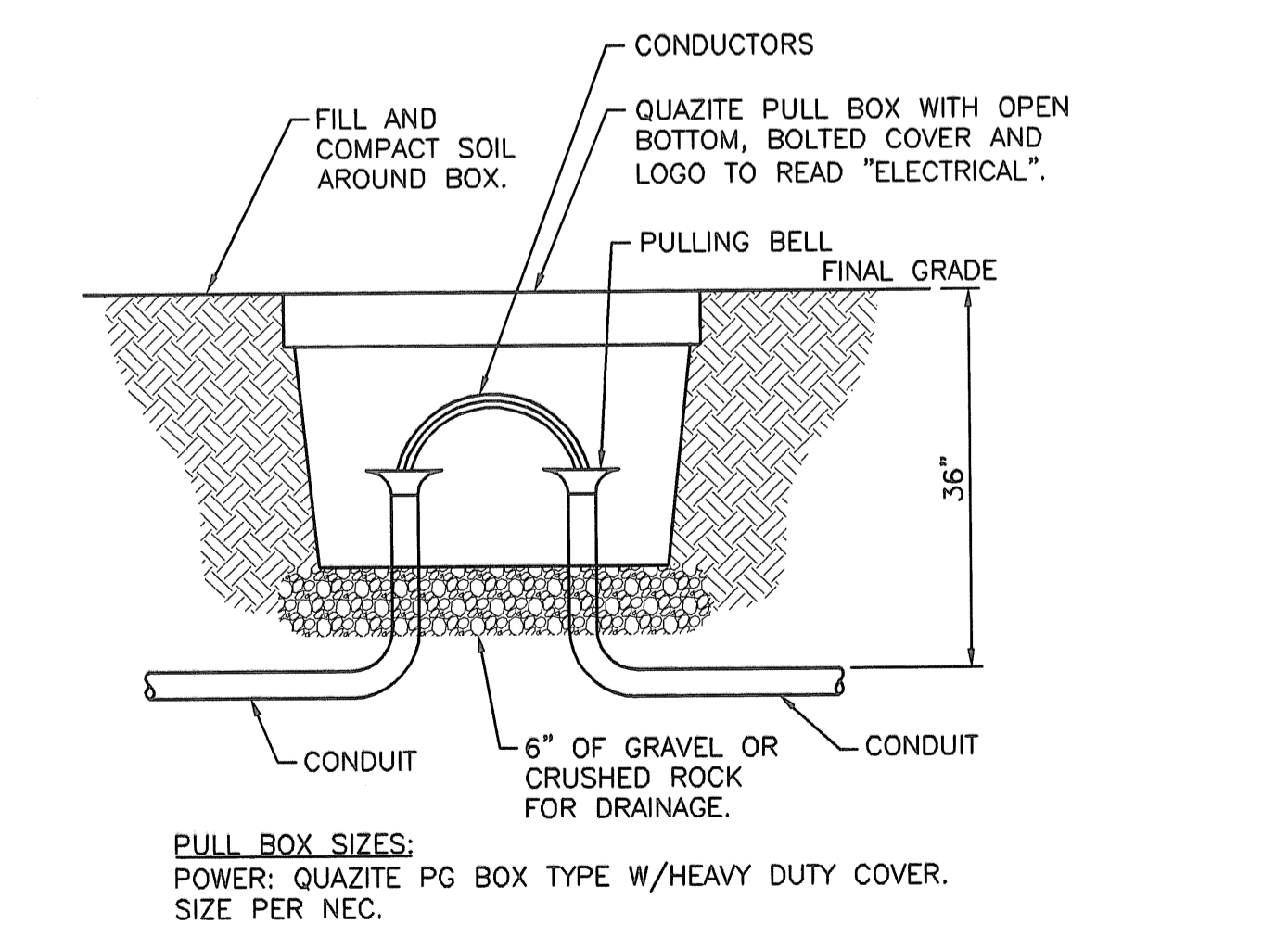
- WIRE**
ALL WIRE SHALL HAVE COPPER CONDUCTORS, WITH U.L. LABEL. SERVICE ENTRANCE CABLE SHALL BE TYPE USE, THWN OR XHHW WITH STRANDED CONDUCTORS. ALL FEEDER AND BRANCH CIRCUIT WIRE #8 AWG AND LARGER SHALL BE TYPE THWN OR XHHW, BOTH WITH STRANDED CONDUCTORS. ALL WIRE #10 AWG AND SMALLER SHALL BE TYPE THWN (WET OR DAMP LOCATIONS, OR IN CONDUIT BELOW GRADE OR SLAB) OR THHN (DRY LOCATIONS ONLY AND ABOVE GROUND). BOTH WITH SOLID CONDUCTORS. ALL BRANCH CIRCUITS WIRING SHALL BE NOT SMALLER THAN #12 AWG WIRE.
- WIRING INSTALLATION**
ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAY AND ENCLOSURES. ALL SPLICES OR RAPS SHALL OCCUR IN APPROVED BOXES AND ENCLOSURES, AND SHALL BE MADE UP WITH APPROVED SOLDERLESS CONNECTORS. CONDUCTORS SHALL HAVE INSULATION OF THE PROPER COLOR TO MATCH NEC COLOR CODE SYSTEM. ALL BRANCH CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR INSTALLED IN THE RACEWAY, SIZED IN ACCORDANCE WITH NEC TABLE 250-95. VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 2%.
- OUTLET BOXES**
ALL OUTLETS INCLUDING LIGHT, SWITCH, RECEPTACLE AND SIMILAR OUTLETS, SHALL BE STEEL CITY OR GALVANIZED STEEL KNOCKOUT BOXES, SUITABLE IN DESIGN TO THE PURPOSE THEY SERVE AND THE SPACE THEY OCCUPY. ALL OUTLET BOXES SHALL BE SET IN WALLS, COLUMNS, FLOORS, OR CEILINGS SO AS TO BE FLUSH WITH THE FINISHED SURFACE AND RIGIDLY SECURED IN POSITION. PROVIDE PLASTER RINGS, EXTENSION RINGS AND MASONRY RINGS AS REQUIRED FOR FLUSH MOUNTING.
- WIRING DEVICES**
FURNISH AND INSTALL THE OUTLETS AND SWITCHES WHERE SHOWN OR REQUIRED. COLOR OF DEVICES SHALL BE IVORY:
DUPLEX RECEPTACLE: LEVITON #BR15 OR ENGINEERED APPROVED EQUAL SINGLE POLE SWITCH: LEVITON #CSB1-15 OR ENGINEERED APPROVED EQUAL GFCI DUPLEX RECEPTACLE: LEVITON #6598 OR ENGINEERED APPROVED EQUAL ALL SWITCH AND OUTLET PLATES SHALL BE IVORY NYLON. GROUPS OF SWITCHES SHALL BE UNDER ONE GANG-PLATE, MOUNTED HORIZONTALLY. PLATES SHALL BE SET PLUMB, PARALLEL AND SHALL FINISH FLUSH WITH THE WALL. WEATHERPROOF COVER PLATES SHALL BE STAINLESS STEEL TYPE WITH PVC GASKETING.
- FLOOR BOXES**
FURNISH AND INSTALL STEEL CITY #600 AND 640 SERIES FLUSH FLOOR BOX WITH POLISHED BRASS COVER PLATES AS INDICATED. PROVIDE INSERT FLOOR PLATES WITH HINGED COVERS FOR POWER OUTLETS AND/OR VOICE/DATA TERMINATIONS AS NECESSARY.
- FIRESTOPPING OF FLOOR AND WALL PENETRATIONS**
SEAL ALL PENETRATIONS THROUGH FIRE RATED FLOOR AND WALL ASSEMBLIES IN ACCORDANCE WITH NFPA CODES. PENETRATION SEALING SYSTEM SHALL BE 3M BRAND 7904 (CP-25 CAULK, OR 303 PUTTY), OR APPROVED EQUAL.
- FLASHING AND PITCH POCKETS**
FLASH AND COUNTERFLASH ALL OPENINGS THROUGH ROOF, AND/OR PROVIDE PITCH POCKETS AS REQUIRED. ALL ROOF PERFORATIONS SHALL BE LEAKTIGHT AT THE TERMINATION OF THE WORK.
- CONNECTION TO SERVING UTILITIES**
CONTRACTOR SHALL PROVIDE PROPER TERMINATION, METERING PROVISIONS, ETC. FOR ELECTRICAL AND TELEPHONE SERVICES FOR CONNECTION BY THE SERVING UTILITY, IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF ALL CODES HAVING JURISDICTION AND OF THE SERVING UTILITY INVOLVED.
- GROUNDING**
ALL CONDUCTORS, CONDUITS, MOTOR FRAMES, ETC. WHICH REQUIRE GROUNDING SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED BY THIS CONTRACTOR IN A THOROUGH AND EFFICIENT MANNER CONFORMING IN ALL PARTICULARS TO THE NATIONAL ELECTRICAL CODE.
- PANELBOARDS**
FURNISH AND INSTALL SQUARE D TYPE NQOD OR NEHB LIGHTING/POWER PANELBOARDS, OR EQUIVALENT, AS SCHEDULED AND NOTED ON THE DRAWINGS. THE PANELBOARDS SHALL BE COMPLETE WITH THERMAL MAGNETIC PLASTIC CASE CIRCUIT BREAKERS OF THE BOLT-ON TYPE ASSEMBLED IN A FINISHED CABINET. ALL 2 AND 3 POLE BREAKERS MUST BE COMMON TRIP. EACH PANEL SHALL CONTAIN A TYPEWRITTEN CIRCUIT DIRECTORY.
- SAFETY SWITCHES**
FURNISH AND INSTALL SQUARE D, GENERAL ELECTRIC, OR EQUAL FUSED OR NON-FUSES (AS REQUIRED) GENERAL DUTY SAFETY SWITCHES WHERE NOT FURNISHED WITH THE EQUIPMENT, AND AT ALL OTHER POINTS REQUIRED BY CODE. CONSTRUCTION SHALL BE OF A NEMA DESIGN SUITABLE FOR THE ENVIRONMENT INSTALLED. FUSES SHALL BE BUSSMAN OR EQUAL SHAWMUT, SIZE AND TYPE AS REQUIRED OR INDICATED.
- DRY TYPE TRANSFORMERS**
FURNISH AND INSTALL SQUARE D, GENERAL ELECTRIC OR EQUAL WITH CLASS H INSULATION. PHASE, VOLTAGE, AND SIZE SHALL BE AS NOTED ON THE DRAWINGS.
- LIGHT FIXTURES AND LAMPS**
INSTALL FIXTURES AND SCHEDULED ON DRAWINGS, INCLUDING ALL LAMPS. MATERIAL AND LABOR TO SECURELY HANG FIXTURES AND MAKE THEM READY FOR USE. PROVIDE TRIM TO FIT EACH CEILING CONDITION ACTUALLY ENCOUNTERED. PROVIDE ADDITIONAL TIE WIRES CONNECTED TO STRUCTURE TO CONFORM TO UBC 25-2 SEISMIC REQUIREMENTS WHERE REQUIRED.
- WIRING OF MECHANICAL EQUIPMENT**
FURNISH AND INSTALL ALL POWER WIRING AND ALL THERMOSTAT AND CONTROL WIRING OF ALL HVAC UNITS, PUMPS, FANS, WATER HEATERS, ETC. CONNECT PER MANUFACTURERS WIRING DIAGRAMS.
- TELEPHONE AND DATA SYSTEM PROVISIONS**
FURNISH AND INSTALL RECESSED OUTLET BOXES IN WALLS AND 3/4" CONDUIT STUBBED CONCEALED IN WALL TO ACCESSIBLE CEILING SPACE. TERMINATE CONDUIT WITH BUSHING AND INSTALL PULLWIRE IN CONDUIT.
- DUCT SMOKE DETECTORS**
FURNISH AND INSTALL DUCT MOUNTED SMOKE DETECTORS IN SUPPLY AND RETURN DUCTS WHERE INDICATED OR WHERE REQUIRED BY CODE. DUCT SMOKE DETECTORS SHALL BE EDWARDS #DH400ACDCI SERIES IONIZATION TYPE WITH SAMPLING TUBE AND REMOTE TEST STATION AS REQUIRED.
- SHOP DRAWINGS**
SUBMIT FOR APPROVAL SIX SETS OF MANUFACTURERS SHOP DRAWINGS OF ALL MAJOR ITEMS OF EQUIPMENT AND ALL ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS. BEFORE SUBMITTING SHOP DRAWINGS AND MATERIALS LISTS THE CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, AND SHALL FIT THE AVAILABLE SPACE AND ALLOW AMPLE ROOM FOR MAINTENANCE. THE ARCHITECT'S CHECKING AND SUBSEQUENT APPROVAL OF SUCH SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES; OR OMISSIONS OF COMPONENTS OR FITTINGS; OR FOR COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS.



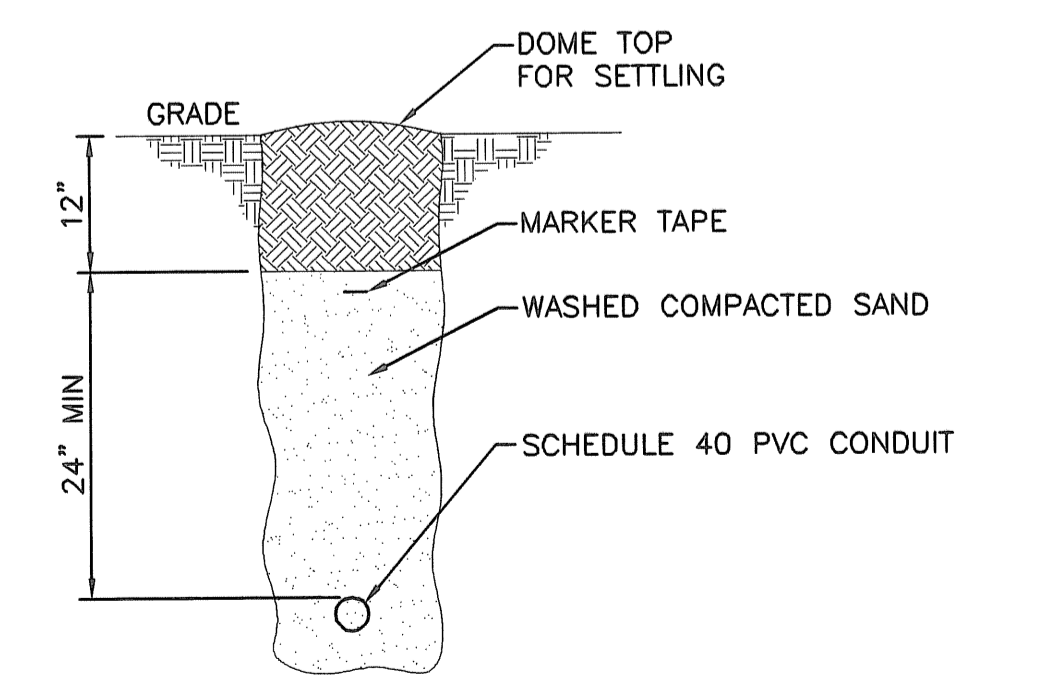
SYSTEM GROUNDING DETAIL
SCALE: NONE



CONDUIT STUB MARKER DETAIL
SCALE: NONE



IN-GROUND PULL BOX INSTALLATION DETAIL
SCALE: NONE



CONDUIT TRENCH SECTION
SCALE: NONE