

ELECTRICAL SPECIFICATIONS

- GENERAL:
 - PROVIDE ALL WORK, EQUIPMENT, SERVICES, LABOR, AND MATERIALS FOR THE CONSTRUCTION OF NEW ELECTRICAL SYSTEMS AS DESCRIBED OR IMPLIED BY THE CONTRACT DOCUMENTS.
 - THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF CONSTRUCTION, MATERIALS, AND EQUIPMENT. TAKE ACTUAL FIELD MEASUREMENTS AT THE JOB SITE IN LIEU OF SCALING THE DRAWINGS.
 - ALL WORK AND MATERIALS SHALL COMPLY WITH APPLICABLE STATE, LOCAL, AND NATIONAL CODES (INCLUDING OSHA). COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND THESE SPECIFICATIONS SHALL BE THE MINIMUM STANDARD OF ACCEPTANCE.
 - CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND SHALL HAVE ALL WORK INSPECTED AS REQUIRED BY THE LOCAL AHJ.
 - LOCATIONS INDICATED FOR OUTLETS, EQUIPMENT, ETC., ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR AND COORDINATED WITH THE OWNER AND FINAL EQUIPMENT LOCATIONS. ALL OUTLETS IN, UNDER, ABOVE OR NEAR CASEWORK SHALL BE COORDINATED WITH THE ARCHITECT AND CASEWORK VENDORS.
 - PROVIDE ONLY NEW MATERIALS AND EQUIPMENT LISTED AND LABELED (FOR THE USE INTENDED) BY AN APPROVED THIRD PARTY LABORATORY SERVICE SUCH AS UNDERWRITERS LABORATORIES, INC.
 - SUBMIT SHOP DRAWINGS AND CATALOG DATA ELECTRONIC FORMAT FOR LIGHT FIXTURES, GEAR, MATERIALS AND ALL SPECIAL SYSTEMS.
 - ALL EXTERIOR CONDUIT ENTERING BUILDING SHALL BE SEALED FOR WATERTIGHT PENETRATION. ADDITIONALLY THE CONDUIT INTERIOR SHALL BE SEALED TO PREVENT TRANSMISSION OF UNCONDITIONED AIR INTO CONDITIONED SPACES SO THAT CONDENSATION ISSUES ARE ELIMINATED.
 - CONDUITS:
 - ALL INTERIOR CONDUIT SHALL BE ZINC-COATED EMT WITH COMPRESSION CONNECTORS OR GALVANIZED RIGID STEEL (GRS).
 - ALL ABOVE GRADE EXTERIOR CONDUIT SHALL BE GRS. ALL BELOW GRADE CONDUIT SHALL BE SCHEDULE 40 RIGID NON-METALLIC CONDUIT SUITABLE FOR THE APPLICATION AND EXPOSURE. ELBOWS AND STUB-UPS WHERE TRANSITIONING FROM UNDERGROUND TO ABOVE GROUND SHALL BE RGS.
 - RACEWAY AND CABLE SUPPORTS: AS DESCRIBED IN NECA 1 AND NECA 101.
 - STRUCTURAL STEEL FOR FABRICATED SUPPORTS AND RESTRAINTS: ASTM A 36/A 36M, STEEL PLATES, SHAPES, AND BARS; BLACK AND GALVANIZED. COORDINATE PARAGRAPH AND SUBPARAGRAPHS BELOW WITH INSTALLATION REQUIREMENTS IN PART 3.
 - MOUNTING, ANCHORING, AND ATTACHMENT COMPONENTS: ITEMS FOR FASTENING ELECTRICAL ITEMS OR THEIR SUPPORTS TO BUILDING SURFACES INCLUDE THE FOLLOWING: VERIFY SUITABILITY OF FASTENERS IN SUBPARAGRAPH BELOW FOR USE IN LIGHTWEIGHT CONCRETE OR CONCRETE SLABS LESS THAN 4 INCHES (100 MM) THICK.
 - MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, ZINC-COATED STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS IN WHICH USED. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
 - MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - COOPER B-LINE, INC.; A DIVISION OF COOPER INDUSTRIES.
 - EMPIRE TOOL AND MANUFACTURING CO., INC.
 - HILTI INC.
 - ITW RAMSET/RED HEAD; A DIVISION OF ILLINOIS TOOL WORKS, INC.
 - MKT FASTENING, LLC.
 - CONCRETE INSERTS: STEEL OR MALLEABLE-IRON, SLOTTED SUPPORT SYSTEM UNITS SIMILAR TO MSS TYPE 18, COMPLYING WITH MFMA-4 OR MSS SP-58.
 - CLAMPS FOR ATTACHMENT TO STEEL STRUCTURAL ELEMENTS: MSS SP-58, TYPE SUITABLE FOR ATTACHED STRUCTURAL ELEMENT.
 - THROUGH BOLTS: STRUCTURAL TYPE, HEX HEAD, AND HIGH STRENGTH. COMPLY WITH ASTM A 325.
 - TOGGLE BOLTS: ALL-STEEL SPRINGHEAD TYPE.
 - HANGER RODS: THREADED STEEL.
 - CONDUIT AND CABLE SUPPORT DEVICES: STEEL AND MALLEABLE-IRON HANGERS, CLAMPS, AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.
 - POWDER ACTUATED FASTENERS ARE NOT ALLOWED AND SHALL NOT BE USED.
 - FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES: WELDED OR BOLTED, STRUCTURAL-STEEL SHAPES, SHOP OR FIELD FABRICATED TO FIT DIMENSIONS OF SUPPORTED EQUIPMENT.
 - SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE-RATED WALLS OR FLOORS WITH UL LABELED, FIRE SEAL.
 - WATER PROOF ALL CONDUIT PENETRATIONS THROUGH EXTERIOR WALLS. SEAL CONDUIT INTERIORS TO PREVENT TRANSMISSION OF UNCONDITIONED AIR INTO CONDITIONED SPACES.
 - WIRING:
 - CONDUCTORS SHALL BE COPPER, THIN/THIN, SOLID FOR #10 AWG OR #12 AWG, AND STRANDED FOR ALL LARGER SIZES. ALL CONDUCTORS SHALL BE COLOR-CODED.
 - ALL CONDUCTORS AND CABLES SHALL BE INSTALLED IN CONDUITS AND TESTED FOR CONTINUITY AND GROUND BEFORE BEING ENERGIZED.
 - ALL NEW OR MODIFIED FEEDERS SHALL TESTED FOR INSULATION RESISTANCE (BEFORE CONNECTIONS ARE MADE) USING A 500V MEGGER. MINIMUM READINGS SHALL BE 250,000 OHMS OR MORE. CONTRACTOR SHALL PROVIDE A REPORT INDICATING THE RESULTS OF THE INSULATION RESISTANCE TEST OF EACH CONDUCTOR. ANY CONDUCTORS NOT COMPLYING WITH THIS REQUIREMENT SHALL BE REPLACED AND RETESTED.
 - THE CONDUIT AND ALL ELECTRICAL EQUIPMENT AND DEVICES SHALL BE GROUNDED. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR AND DEDICATED NEUTRAL CONDUCTOR WITH EVERY CIRCUIT. NO CONDUIT SHALL CONTAIN MORE THAN THREE PHASE CONDUCTORS.
 - POWER EQUIPMENT:
 - PANELBOARDS SHALL BE DEAD-FRONT SAFETY TYPE WITH FULL HEIGHT, COPPER BUSSING AND A NOMINAL 20 INCHES WIDE CABINET. ALL CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT-ON, AUTOMATIC THERMAL MAGNETIC TYPE, CALIBRATED FOR 40 DEGREES C, AMBIENT COMPENSATING.
 - PANELBOARDS SHALL BE OF THE VOLTAGE, PHASE, AND WIRES AS SHOWN ON THE DRAWINGS. ALL PANELBOARDS SHALL BE LISTED AND LABELED BY UL IN ACCORDANCE WITH THE LATEST EDITION OF UL 67. IN ADDITION EACH PANELBOARD SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NEC AND NEMA STANDARD PB1. THE PANELBOARD SHALL MEET SERVICE ENTRANCE REQUIREMENTS WHEN SPECIFIED.
 - THE PANELBOARD INTERIOR SHALL BE DESIGNED TO PERMIT THE INCOMING LINE CONDUCTORS TO ENTER EITHER THE TOP OR BOTTOM OF THE ENCLOSURE.
 - THE NEUTRAL BAR SHALL BE FULLY RATED AND CAPABLE OF BEING LOCATED IN ANY CORNER OF THE ENCLOSURE LINE END TO FACILITATE CONDUCTOR TERMINATION.
 - THE MAIN DEVICES SHALL BE MAIN LUGS OR MAIN CIRCUIT BREAKER AS SHOWN ON DRAWINGS. MAIN LUGS SHALL BE FOR THE SIZE AND NUMBER OF CABLES SHOWN ON THE DRAWINGS.
 - CIRCUIT BREAKERS INSTALLED IN PANELBOARDS SHALL BE OF THE TYPE LISTED FOR USE IN THE EQUIPMENT AND SHALL HAVE A FAULT CURRENT RATING THAT MATCHES THE INTERRUPTING RATING OF THE PANELBOARD.
 - SAFETY SWITCHES SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK, TYPES OF THE SIZE AND FUSE AMPACITY AS DENOTED ON THE DRAWINGS. PROVIDE GROUND BUS, SOLID NEUTRAL (WHEN REQUIRED), CLASS RK-5 DUAL ELEMENT TIME DELAY FUSES, REJECTION TYPE FUSE HOLDERS, AND NEMA RATED ENCLOSURE. SWITCHES SHALL HAVE TOOL DEFEATABLE DOOR INTERLOCKS.
 - ELECTRICAL POWER EQUIPMENT SHALL BE SQUARE D, SIEMENS, GE OR OR CUTLER-HAMMER.
 - DEVICES:
 - ALL WIRING DEVICES SHALL BE FEDERAL SPECIFICATION HUBBELL, ARROW HART, OR APPROVED EQUAL.
 - PROVIDE A SINGLE MULTI-GANG BOX AND DEVICE PLATE FOR ALL GROUP MOUNTED WIRING DEVICES.
 - DEVICE AND COVER PLATE COLOR SHALL BE SELECTED BY ARCHITECT.
 - SWITCHES SHALL BE FEDERAL SPECIFICATION QUIET TYPE, SINGLE POLE, THREE WAY OR FOUR WAY AS INDICATED ON THE PLANS. SWITCHES SHALL BE GROUNDING TYPE WITH HEX HEAD GROUNDING SCREW RATED FOR 20 AMPERES, 120/277 VOLTS A.C.
 - LIGHTING EQUIPMENT:
 - ALL LIGHT FIXTURES SHALL BE PROVIDED COMPLETE WITH LAMPS, ALL NECESSARY ACCESSORIES, AND AS SCHEDULED ON THE DRAWINGS.
 - ALL LED LIGHTING SHALL HAVE A FULL 5 YEAR WARRANTY TO COVER ALL COMPONENTS AND COMPLETE FIXTURE.
 - ELECTRICAL IDENTIFICATION:
 - EQUIPMENT IDENTIFICATION LABELS SHALL BE ENGRAVED PLASTIC LABELS. INSTALL ON EACH UNIT OF EQUIPMENT, INCLUDING CENTRAL OR MASTER UNIT OF EACH SYSTEM. THIS INCLUDES POWER, LIGHTING, COMMUNICATION, SIGNAL, AND ALARM SYSTEMS, UNLESS UNITS ARE SPECIFIED WITH THEIR OWN SELF-EXPLANATORY IDENTIFICATION. UNLESS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH 1/2-INCH- HIGH LETTERING ON 1-1/2-INCH- HIGH LABEL WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2 INCHES HIGH WITH WHITE LETTERING ON BLACK FIELD. APPLY LABELS USING MECHANICAL FASTENERS.
 - CIRCUIT IDENTIFICATION LABELS SHALL BE INSTALLED ON BOXES. INSTALL LABELS EXTERNALLY USING PRESSURE-SENSITIVE, SELF-ADHESIVE LABELS. LABEL SHALL LIST PANEL AND CIRCUIT NUMBER OR EQUIVALENT.
 - ALL PANELBOARD DIRECTORIES WILL BE TYPED.

GENERAL ELECTRICAL NOTES:

- THE CONTRACTOR SHALL VERIFY EQUIPMENT NAMEPLATE INFORMATION BEFORE INSTALLING CONDUIT, WIRING, CIRCUIT BREAKERS, DISCONNECT SWITCHES OR FUSES.
- IN THE EVENT THE CONTRACTOR CHOOSES TO USE PRODUCTS OTHER THAN THE BASIS OF DESIGN, HE ASSUMES FULL RESPONSIBILITY FOR COORDINATION AND INTEROPERATION OF SUCH ITEMS. THE FUNCTIONAL DESIGN INTEGRITY OF ALL SYSTEMS AND COMPONENTS SHALL BE MAINTAINED. VOLTAGES, LOADS, WIRE SIZES AND QUANTITIES, DISCONNECT SWITCHES AND FUSE SIZES, PHYSICAL SIZE, LOCATIONS, CLEARANCES, ETC. SHALL BE FULLY COORDINATED BY THE ELECTRICAL CONTRACTOR AND SHALL BE HIS RESPONSIBILITY. ANY ADDITIONAL COST RESULTING FROM SAID SUBSTITUTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE ELECTRICAL DRAWINGS REGARDING BUILDING CONSTRUCTION, DIMENSION AND ARRANGEMENT. LINES THAT REQUIRE SLOPE, SUCH AS PLUMBING WASTE LINES SHALL TAKE PRECEDENCE OVER ELECTRICAL LINES. CONTRACTOR SHALL COORDINATE CLOSELY WITH ALL TRADES TO AVOID CONFLICTS AND SHALL PROVIDE ALL OFFSETS AND EQUIPMENT AS REQUIRED TO FIT THE ELECTRICAL WORK INTO THE AVAILABLE SPACE.
- ALL DISCONNECTS SHALL BE HEAVY DUTY TYPE, HAVE A GROUND BAR, A NEUTRAL BAR AND TOOL DEFEATABLE INTERLOCKS.
- COORDINATE ANY AND ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION SO AS TO AVOID CONFLICT DURING CONSTRUCTION.
- ALL PANELS SHALL HAVE TYPED, COMPLETED DIRECTORIES INDICATING EQUIPMENT SERVED AND ROOM NUMBER (AS INDICATED ON FINAL BUILDING ROOM SIGNAGE) OF EQUIPMENT LOCATION, OR SPARE, OR SPACE.
- COORDINATE ALL DEVICES AND OUTLETS ABOVE, BELOW AND ABOUT CASEWORK CLOSELY WITH CASEWORK CONTRACTOR IN ORDER TO LOCATE AT THE PROPER LOCATION AND HEIGHT.
- THE CONTRACTOR SHOULD READ AND UNDERSTAND THE ENTIRE SET OF CONSTRUCTION DOCUMENTS WHICH INCLUDES BUT IS NOT LIMITED TO THE SPECIFICATIONS, ARCHITECTURAL, CIVIL, STRUCTURAL AND ALL ENGINEERING DRAWINGS, SO THAT HE MAY UNDERSTAND THE FULL SCOPE OF WORK AND CONVEY THE PROPER REQUIRED MATERIALS AND METHODS OF INSTALLATION TO THE ESTIMATORS, SUPPLIERS AND INSTALLERS.
- THE CONTRACTOR SHALL INSPECT AND OBSERVE THE EXISTING SITE, BUILDING, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL CONDITIONS PRIOR TO BEGINNING WORK AND SHALL PROVIDE AND INSTALL FIXTURES, DEVICES AND EQUIPMENT IN A MANNER TO ACCOMMODATE THESE EXISTING CONDITIONS.
- CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS IN ORDER TO OBTAIN A FULL UNDERSTANDING OF WORK TO BE DONE.
- NO EXISTING POWER (CIRCUIT BREAKER, DISCONNECT SWITCHES, ETC.) IS TO BE TURNED OFF UNTIL VERIFIED THAT IT IS NOT IN CURRENT USE AND UNTIL APPROVED BY THE OWNER.
- ALL ELECTRICAL EQUIPMENT AND WIRING SHALL BE 75 DEG. RATED.
- FINAL LOCATIONS OF ALL POWER DEVICES SHALL BE COORDINATED WITH FINAL EQUIPMENT PLAN PRIOR TO ROUGH-IN OF ANY LOCATIONS.
- ALL SHUTDOWNS AND SERVICE INTERRUPTIONS MUST BE COORDINATED AND REQUESTED THROUGH THE OWNER AT LEAST 72 HOURS IN ADVANCE OF EXPECTED SHUTDOWN.
- ELECTRICAL CONTRACTOR SHALL FIRE SEAL ALL PENETRATIONS THRU FIRE RATED WALLS. REFER TO PME SHEET FOR U.L. PENETRATION DETAILS.
- THE ELECTRICAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THAT THE EXISTING SECURITY CAMERA SYSTEM REMAINS FULLY OPERATIONAL THROUGHOUT THE COURSE OF THIS PROJECT.
- IN THE EVENT THAT A PROLONGED POWER OUTAGE WILL BE REQUIRED FOR THE REMOVAL AND INSTALLATION OF THE NEW ELECTRICAL DISTRIBUTION PANELS, THERE SHALL BE PROVISIONS MADE TO HAVE OFF-DUTY DURHAM COUNTY SHERIFF STAFF PATROL THE SITE TO REDUCE THREAT OF THEFT OR VANDALISM.
- ALL LOW VOLTAGE WIRING SHALL BE PLENUM RATED.
- ALL EXTERIOR LIGHTS SHALL BE CONTROLLED BY A ROOF MOUNTED PHOTOCELL. LOCATION TO BE COORDINATED WITH THE ARCHITECT.
- EXIT AND EMERGENCY LIGHTING UNITS SHALL BE CIRCUITED TO THE LINE SIDE OF THE LOCAL SWITCH TO ENSURE OPERATION IN A LOSS OF NORMAL POWER SITUATION.
- ALL AREAS THAT ARE SERVED WITH WIREMOLD/PLUGMOLD SHALL BE SERVED VIA DEDICATED NEUTRALS FROM THE BRANCH PANEL.
- ALL EXTERIOR CONDUIT ROUTINGS SHOWN ARE DIAGRAMMATIC AND FOR CONTRACTOR INFORMATION. ANY PATHWAYS INSTALLED SHALL MEET ALL CURRENT AND NEC BUILDING CODE REQUIREMENTS. CONTRACTOR SHALL FIELD LOCATE AND PROTECT ALL EXISTING UNDERGROUND UTILITIES.
- ALL CONDUITS IN FINISHED AREAS SHALL BE CONCEALED UNDERSLAB, IN WALLS. ANY CONDUIT THAT MUST BE EXPOSED IN UNFINISHED AREAS SHALL BE NEARLY ROUTED PARALLEL AND PERPENDICULAR TO THE BUILDING STRUCTURE. ROUTE IN CORNERS AND TIGHT ALONG COLUMNS WHERE POSSIBLE TO PROTECT AND CONCEAL. ALL EXPOSED CONDUITS, BOXES AND SUPPORTS SHALL BE PAINTED TO MATCH THE ADJACENT SURFACE.
- NEW TELEDATA OUTLETS SHOWN WILL BE BY THE ELECTRICAL CONTRACTOR AND SHALL INCLUDE BACKBOXES AND CONDUIT WITH PULL STRINGS BACK TO THE TELECOM CLOSET. ALL OTHER TELEDATA WORK INCLUDING, BUT NOT LIMITED TO PULLING CABLES, EQUIPMENT, INSTALLING, TERMINATING, TESTING AND LABELING OF CABLES, FACEPLATES AND JACKS SHALL BE BY THE OWNER'S VENDOR.

GENERAL ELECTRICAL DEMOLITION NOTES:

- THE ELECTRICAL CONTRACTOR SHALL REMOVE ONLY THOSE EXISTING LIGHT FIXTURES, SWITCHES, RECEPTACLES, JUNCTION AND OUTLET BOXES, VOICE AND DATA TELECOMMUNICATION OUTLETS AND ASSOCIATED ELECTRICAL AND SIGNALING SYSTEM PANELS, DEVICES AND EQUIPMENT AS INDICATED ON DEMOLITION DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT SERVICES TO THIS SAME EQUIPMENT FOR REMOVAL. THE GENERAL CONTRACTOR COORDINATE THE DISCONNECTION AND DEMOLITION OF EQUIPMENT CLOSELY WITH THE GENERAL CONTRACTOR. DEVICES NOT INDICATED ON DRAWINGS ARE TO REMAIN UNLESS NOTED OTHERWISE.
- REMOVE POWER AND SIGNALING SYSTEMS WIRING AND SERVICE FIXTURES, DEVICES, OUTLETS AND/OR EQUIPMENT BEING REMOVED. REMOVE THIS CIRCUITRY BACK TO ITS SOURCE OR BACK TO THE MAIN SERVICE CENTER TO CONTINUE SERVING EXISTING ITEMS. RECONNECT AND EXTEND CIRCUITRY TO MAINTAIN POWER AND SIGNALING SERVICES TO REMAINING EQUIPMENT. ALL FEEDING FEED-THRU PULL BOXES, OUTLETS AND JUNCTION BOXES SHALL BE ACCESSIBLE.
- REMOVE EXISTING INDICATED LIGHT FIXTURES, ELECTRICAL DEVICES, WALL MOUNT RACEWAY, AND EQUIPMENT UNLESS OTHERWISE NOTED.
- PATCH AREAS WHERE DEVICES, LIGHT FIXTURES AND EQUIPMENT IS REMOVED TO MATCH EXISTING FINISH.
- ALL CONDUIT SHALL BE CONCEALED IN WALL ABOVE CEILING OR BELOW FLOOR. CUT AND PATCH TO MATCH EXISTING FINISH.
- COORDINATE ANY AND ALL WORK WITH ALL OTHER TRADES PRIOR TO DEMOLITION SO AS TO AVOID CONFLICT DURING CONSTRUCTION.
- ALL PANEL DIRECTORIES SHALL BE TYPED, COMPLETED INDICATING EQUIPMENT SERVED AND ROOM NUMBER (AS INDICATED ON FINAL BUILDING ROOM SIGNAGE) OF EQUIPMENT LOCATION, OR SPARE, OR SPACE. DIRECTORIES SHALL BE TYPED. OLD DIRECTORIES SHALL BE TURNED OVER TO THE OWNER.
- THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS IN ORDER TO OBTAIN A FULL UNDERSTANDING OF WORK TO BE DONE. THE CONTRACTOR SHALL INSPECT AND OBSERVE THE EXISTING SITE, BUILDING, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL CONDITIONS PRIOR TO BEGINNING WORK AND SHALL PERFORM HIS WORK IN A MANNER TO ACCOMMODATE THESE EXISTING CONDITIONS.
- NOT ALL DEVICES ARE SHOWN WITHIN THIS AREA. CONTRACTOR SHALL COORDINATE EXACT DEMOLITION AREA WITH ARCHITECTURAL PLANS PRIOR TO BEGINNING WORK. WHERE DEVICES ARE REMOVED IN AN EXISTING WALL TO REMAIN, PROVIDE BLANK STAINLESS STEEL COVER PLATE, IF OPENING CAN NOT BE PATCHED.
- ALL SHUTDOWNS AND SERVICE INTERRUPTIONS MUST BE COORDINATED AND REQUESTED THROUGH THE OWNER'S STAFF AT LEAST 72 HOURS IN ADVANCE OF EXPECTED SHUTDOWN.
- THE CONTRACTORS SHALL COORDINATE ALL WORK TO BE PERFORMED WITH THE ARCHITECTURAL PLANS AND PROVIDE ALL NECESSARY TEMPORARY MEASURES THAT ARE REQUIRED TO ENSURE THAT THE DATA, SECURITY AND SPECIAL SYSTEMS ARE FULLY FUNCTIONAL IN ALL REQUIRED AREAS DURING ALL PHASES OF CONSTRUCTION.
- THE OWNER SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION OR EXTENSION OF THE TELECOM AND DATA SYSTEMS AND SERVICES TO THE NEW ADDITION WITH THEIR CURRENT VENDORS AND/OR SERVICE PROVIDERS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO SECURITY, TELEPHONE AND DATA.

SPECIAL SYSTEMS SYMBOLS	
SYMBOL	DESCRIPTION
	SECURITY CONTROL PANEL
	SECURITY SYSTEM REMOTE POWER SUPPLY
	SECURITY SYSTEM REMOTE ZONE EXPANDER
	SECURITY CAMERA
	MULTI-DIRECTIONAL SECURITY CAMERA
	ACCESS CONTROL DEVICE
	SECURITY SYSTEM ARMING KEYPAD
	MOTION DETECTOR (LR - LONG RANGE)
	MAGNETIC DOOR HOLDER
	AUTO DOOR OPERATOR PUSH PLATE
	DOORBELL / PUSH BUTTON
	DOOR CONTACT
	LIGHTING CONTROL SYSTEM BUS POWER SUPPLY
	DAYLIGHT SENSOR (ORIENT TOWARDS EXTERIOR WINDOW)
	OCCUPANCY SENSOR (ORIENT TOWARDS ROOM ENTRY)
	ELECTRIC STRIKE FOR DOOR
	ELECTRIC LATCH FOR DOOR

ELECTRICAL ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
48"	DIMENSION ABOVE FINISHED FLOOR
30ADS	30A DISCONNECT SWITCH
30AF	30A FUSE FOR DISCONNECT SWITCH
AC	ABOVE CEILING CASEWORK (COORDINATE WITH ARCHITECT)
ABT	ABOVE CEILING TILE
AFC	ARC FAULT CIRCUIT INTERRUPTER
AFV	ABOVE FINISHED VENT
ARS	AREA OF RESCUE ASSISTANCE
ATS	AUTOMATIC TRANSFER SWITCH
BFG	BELOW FINISHED GRADE
CD	CEILING MOUNTED DEVICE
COAX	COAX (RGE) OUTLET
COFFEE	DEDICATED COFFEE OUTLET
DISH	DEDICATED DISHWASHER OUTLET
EC	ELECTRICAL CONTRACTOR
ER	EXISTING DEVICE TO BE RELOCATED
ETR	EXISTING TO REMAIN
EW	DEDICATED ELECTRIC WATER COOLER OUTLET
EX. OR EXIST.	EXISTING
FREEZ	DEDICATED FREEZER OUTLET
GI	GROUND FAULT INTERRUPTER
HK	HOUSEKEEPING OUTLET
IC	DEVICE MOUNTED IN COUNTER OR CASEWORK
IH	INTERCOM HANDESET
K	KEYED SWITCH
LR	LONG RANGE
LSOLS	LINE SIDE OF LOCAL SWITCH
MC	MECHANICAL CONTRACTOR
MICRO	DEDICATED MICROWAVE OUTLET
MTS	MANUAL TRANSFER SWITCH
NC	NURSE CALL
NOM	NURSE CALL MASTER EQUIPMENT HEADEND
OPE	OWNER PROVIDED EQUIPMENT
OPOI	OWNER PROVIDED OWNER INSTALLED EQUIPMENT
OPOC	OWNER PROVIDED CONTRACTOR INSTALLED EQUIPMENT
OVN	DEDICATED OVEN OUTLET
PC	PLUMBING CONTRACTOR
POE	POWER OVER ETHERNET
POS	POINT OF SALE
PROJ	PROJECTOR OUTLET
RANGE	DEDICATED RANGE OUTLET
RE	RELOCATE EXISTING DEVICE
REFRIG	DEDICATED REFRIGERATOR OUTLET
UC	DEVICE OR EQUIPMENT MOUNTED UNDERCOUNTER
UNO	UNLESS OTHERWISE NOTED
SB	SMARTBOARD COMPUTER CONNECTION
SER	SERVICE ENTRANCE RATED
SU	STUB UP CONDUIT INTO FIXED CASEWORK
W	WALL MOUNTED DEVICE
WP	WEATHERPROOF WHILE IN USE HEAVY DUTY METAL COVER
WAP	WIRELESS ACCESS POINT (CEILING MOUNTED)

MISCELLANEOUS SYMBOLS	
SYMBOL	DESCRIPTION
	CEILING MOUNTED OCCUPANCY SENSOR
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	FIXTURE MOUNTED DAYLIGHTING OCCUPANCY SENSOR
	FIXTURE MOUNTED DUAL ZONE PHOTOCELL SENSOR
	WALL MOUNTED OCCUPANCY SENSOR (TYPE DESIGNATION)
	FLOOR BOX - SEE FLOORBOX SCHEDULE FOR DETAILS
	INTERCOM MASTER HEADEND EQUIPMENT
	INTERCOM MASTER BASE HANDESET (MAIN OFFICE)
	INTERCOM HANDESET (GENERAL ROOMS)
	WALL OR CEILING MOUNT INTERCOM SPEAKER (SEE PLANS)
	WALL MOUNT WEATHERPROOF EXTERIOR INTERCOM SPEAKER
	INTERCOM "PUSH TO TALK" CALL BACK BUTTON

TELECOM / AUDIO VIDEO SYMBOLS	
SYMBOL	DESCRIPTION
	AUDIO/VISUAL OUTLET FOR OPE
	TELEVISION OUTLET FOR OPE
	TELECOM OUTLET (# INDICATES QUANTITY OF CAT6 CABLES)
	TELECOM OUTLET WITH (2) CAT6 CABLES
	TELECOM OUTLET LOCATED ABOVE COUNTERTOP
	TELECOM OUTLET LOCATED IN CASEWORK/COUNTERTOP
	WALL MOUNT INTERCOM "PUSH TO CALL" BUTTON
	POINT OF SALE TERMINAL LOCATION
	MECHANICAL SERVICE TECHNICIAN CONNECTION WITH 2 CAT6 CABLES
	ELEVATOR EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	SECURITY EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	FIRE ALARM EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	TELECOM SYSTEM JUNCTION BOX
	WALL MOUNTED CLOCK (WIRELESS - NO CABLING)
	POE WIRELESS NETWORK ACCESS POINT
	POE WIRELESS NETWORK ACCESS POINT

USB RECEPTACLE SCHEDULE	
SYMBOL / LABEL	MANUFACTURER
	(1) HUBBELL TAMPER RESISTANT DUPLEX RECEPTACLE WITH: (1) USB TYPE A PORT (1) USB TYPE C PORT HUBBELL MODEL US320AC. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)
	(2) HUBBELL TAMPER RESISTANT DUPLEX RECEPTACLES WITH: (1) USB TYPE A PORT (1) USB TYPE C PORT HUBBELL MODEL US320AC. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)
	(1) HUBBELL USB (4) PORT OUTLET CHARGER MODEL USB4 WITH PORT DOOR SWITCH TO SHUT OFF POWER WHEN NOT IN USE. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)

NOTES:
1. COORDINATE COLOR OF DEVICES WITH ARCHITECT BETWEEN THE FOLLOWING: BLACK, BROWN, GRAY, IVORY, ALMOND OR WHITE.

ELECTRICAL SYMBOLS	
SYMBOL	DESCRIPTION
	DOWN LIGHT (REFER TO SCHEDULE FOR TYPE)
	TRACK LIGHT (REFER TO SCHEDULE FOR TYPE)
	LAY-IN TROFFER (REFER TO SCHEDULE FOR TYPE)
	NIGHT LIGHT (REFER TO SCHEDULE FOR TYPE)
	WALL MOUNT EMERGENCY LIGHT (REFER TO SCHEDULE FOR TYPE)
	CEILING MOUNT EMERGENCY LIGHT (REFER TO SCHEDULE FOR TYPE)
	EXIT LIGHT (REFER TO SCHEDULE FOR TYPE)
	LIGHT CONTROL SWITCH (3 OR 4-WAY OR KEYED AS INDICATED)
	DUAL SWITCHES
	DIMMER SWITCH
	NEW HOMERUN (PANEL CIRCUIT)
	NEW UNSWITCHED LIGHTING CIRCUIT
	NEW POWER LIGHT CIRCUIT
	DUPLEX RECEPTACLE
	BOX MOUNTED DUPLEX RECEPTACLE
	FACEPLATE
	CEILING MOUNTED CORD REEL
	SPECIFIC NEMA PLUG - REFER TO PLANS FOR TYPE
	DISCONNECT SWITCH - REFER TO DISCONNECT SCHEDULE FOR DETAILS
	POWER PANEL - SEE PLANS AND SCHEDULES FOR DETAILS
	CEILING MOUNTED SPEAKER
	WALL OR CEILING MOUNTED INTERCOM SPEAKER
	POWER SYSTEM JUNCTION BOX
	PHOTOCELL
	TIMECLOCK
	POWER / TELECOM DIVIDED POWER POLE
	BLANK GFI TRIP UNIT

MISCELLANEOUS SYMBOLS	
SYMBOL	DESCRIPTION
	CEILING MOUNTED OCCUPANCY SENSOR
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	FIXTURE MOUNTED DAYLIGHTING OCCUPANCY SENSOR
	FIXTURE MOUNTED DUAL ZONE PHOTOCELL SENSOR
	WALL MOUNTED OCCUPANCY SENSOR (TYPE DESIGNATION)
	FLOOR BOX - SEE FLOORBOX SCHEDULE FOR DETAILS
	INTERCOM MASTER HEADEND EQUIPMENT
	INTERCOM MASTER BASE HANDESET (MAIN OFFICE)
	INTERCOM HANDESET (GENERAL ROOMS)
	WALL OR CEILING MOUNT INTERCOM SPEAKER (SEE PLANS)
	WALL MOUNT WEATHERPROOF EXTERIOR INTERCOM SPEAKER
	INTERCOM "PUSH TO TALK" CALL BACK BUTTON

TELECOM / AUDIO VIDEO SYMBOLS	
SYMBOL	DESCRIPTION
	AUDIO/VISUAL OUTLET FOR OPE
	TELEVISION OUTLET FOR OPE
	TELECOM OUTLET (# INDICATES QUANTITY OF CAT6 CABLES)
	TELECOM OUTLET WITH (2) CAT6 CABLES
	TELECOM OUTLET LOCATED ABOVE COUNTERTOP
	TELECOM OUTLET LOCATED IN CASEWORK/COUNTERTOP
	WALL MOUNT INTERCOM "PUSH TO CALL" BUTTON
	POINT OF SALE TERMINAL LOCATION
	MECHANICAL SERVICE TECHNICIAN CONNECTION WITH 2 CAT6 CABLES
	ELEVATOR EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	SECURITY EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	FIRE ALARM EQUIPMENT CONNECTION WITH (2) DEDICATED PHONE LINES
	TELECOM SYSTEM JUNCTION BOX
	WALL MOUNTED CLOCK (WIRELESS - NO CABLING)
	POE WIRELESS NETWORK ACCESS POINT
	POE WIRELESS NETWORK ACCESS POINT

USB RECEPTACLE SCHEDULE	
SYMBOL / LABEL	MANUFACTURER
	(1) HUBBELL TAMPER RESISTANT DUPLEX RECEPTACLE WITH: (1) USB TYPE A PORT (1) USB TYPE C PORT HUBBELL MODEL US320AC. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)
	(2) HUBBELL TAMPER RESISTANT DUPLEX RECEPTACLES WITH: (1) USB TYPE A PORT (1) USB TYPE C PORT HUBBELL MODEL US320AC. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)
	(1) HUBBELL USB (4) PORT OUTLET CHARGER MODEL USB4 WITH PORT DOOR SWITCH TO SHUT OFF POWER WHEN NOT IN USE. COLOR PER SPECIFICATIONS AND ARCHITECT. (SEE NOTE 1.)

NOTES:
1. COORDINATE COLOR OF DEVICES WITH ARCHITECT BETWEEN THE FOLLOWING: BLACK, BROWN, GRAY, IVORY, ALMOND OR WHITE.

These drawings are instruments of service and as such remain the property of the architect