

88 PROJECT: 3020104 03.17.10

NOT USED

T ELECTRICAL SPECIFICATIONS

A

26 27 26 WIRING DEVICES

A. INSTALL WIRING DEVICES, INCLUDING SWITCHES, RECEPTACLES AND POWER RECEPTACLES, TELEPHONE OUTLET BOXES, COVER PLATES AND BLANK OUTLET PLATES AS SHOWN OR DESCRIBED ON DRAWINGS.

B. UNLESS OTHERWISE NOTED ON DRAWINGS OR OTHERWISE REQUIRED BY THE NATIONAL ELECTRICAL CODE, ACCESSIBILITY CODES OR LOCAL CODES, OUTLET HEIGHTS SHALL BE AS FOLLOWS:

1. SWITCH HEIGHT 48" FROM FINISHED FLOOR TO CENTERLINE OF OUTLET.
2. CONVENIENCE OUTLETS:
 - a. SALES: 16" FROM FINISHED FLOOR TO BOTTOM OF OUTLET.
 - b. NON-SALES: 12" FROM FINISHED FLOOR TO BOTTOM OF OUTLET.
3. TELEPHONE OUTLETS SHALL BE LOCATED AS NOTED ON DRAWINGS.

C. DUPLEX RECEPTACLES SHALL BE A MINIMUM OF 20 AMPERE RATING.

D. COLOR OF DEVICES AND PLATES SHALL BE WHITE UNLESS NOTED OTHERWISE. THE DEVICES SHALL BE OF THE TYPES AND RATINGS LISTED, OR EQUALS BY ARROW-HART, GENERAL ELECTRIC OR PARS AND SEYMOUR. WEATHERPROOF GFCI RECEPTACLES SHALL BE INSTALLED WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY CODE. DEVICES SHALL BE OF THE FOLLOWING SPECIFICATIONS, UNLESS OTHERWISE INDICATED SPECIFICALLY ON PLANS:

SINGLE POLE SWITCHES: 20AMP - 120-277V; HUBBELL "HBL1221PL"
 DOUBLE POLE SWITCHES: 20AMP - 120-277V; HUBBELL "HBL1222PL"
 DUPLEX RECEPTACLES: 20AMP - 125V; HUBBELL "HBL5362"
 DUPLEX RECEPTACLES - BLACK: 20AMP - 125V; HUBBELL "HBL5362BLK"
 ISOLATED GROUND RECEPTACLES: 20AMP - 125V; HUBBELL "IG9362"
 GFCI RECEPTACLES: 20AMP - 125V; HUBBELL "IG9362A"
 FLOOR BOXES: HUBBELL "B-2527/24 WITH S-3426 BRASS COVER"

E. DEVICE COVER PLATES SHALL BE PARS AND SEYMOUR SERIES "RP" OR EQUAL BY EAGLE ELECTRIC MFG. CO.

OTHER EQUIVALENT DEVICES WITH MATCHING COVER PLATES MAY BE FURNISHED AS APPROVED BY TENANT.

F. WIRING DEVICES, UNLESS OTHERWISE PROPERLY AUTHORIZED, SHALL BE SAME MANUFACTURERS ONLY. NO ADDITIONAL MANUFACTURERS SHALL BE PERMITTED UNLESS SPECIFICALLY AUTHORIZED BY TENANT OR TENANT'S REPRESENTATIVE.

G. LOW VOLTAGE CONTROL DEVICES SHALL BE AS NOTED ON DRAWINGS OR AS REQUIRED.

26 29 13 MOTOR CONTROLLERS

A. FURNISH AND INSTALL MOTOR CONTROLS, INCLUDING STARTERS, SAFETY DEVICES AND REMOTE CONTROL STATIONS, UNLESS FURNISHED BY EQUIPMENT MANUFACTURER IN PRE-WIRED ASSEMBLIES.

B. FURNISH AND INSTALL MANUAL MOTOR STARTERS WITH OVERLOAD RELAYS IN EACH LINE CONDUCTOR FOR FRACTIONAL HORSEPOWER MOTORS NOT EQUIPPED WITH BUILT-IN RUNNING OVERCURRENT PROTECTION, NOT REQUIRING AUTOMATIC CONTROLLERS.

C. MANUAL MOTOR STARTERS SHALL INCLUDE OVERLOAD RELAYS IN EACH LINE POLE, SIZED TO TRIP SWITCH AT 125% OF MOTOR FULL LOAD RUNNING CURRENT, NEON PILOT LIGHTS, AND NEMA ENCLOSURES AS MANUFACTURED BY GENERAL ELECTRIC, ALLEN BRADLEY, CUTLER HAMMER, SIEMENS, OR SQUARE-D.

D. FURNISH AND INSTALL AUTOMATIC MOTOR STARTERS FOR ONE (1) HP OR LARGER SINGLE PHASE AND THREE PHASE MOTORS OR MOTORIZED EQUIPMENT FURNISHED WITHOUT STARTERS, REQUIRING AUTOMATIC STARTERS FOR CONTROL REGARDLESS OF HORSEPOWER RATING. THREE PHASE STARTERS SHALL HAVE ANTI-SINGLE PHASING, UNDER VOLTAGE PROTECTION, AND PHASE REVERSAL PROTECTION RELAYS EITHER INCLUDED IN STARTERS OR WIRED TO STARTER CONTROL CIRCUIT.

E. PROTECTIVE RELAYS SHALL HAVE ADJUSTABLE TIME-DELAY RELAY IN CIRCUIT TO AVOID NUISANCE SHUT DOWNS. TIME MARK OR SIMILAR EQUIPMENT IS ACCEPTABLE, IF PROTECTION IS NOT PART OF STARTER. DO NOT RELY ON PROPERLY-SIZED FUSES AND MOTOR STARTER OVERLOAD HEATERS ALONE TO AVOID SINGLE-PHASING BURNOUTS.

F. FURNISH AND INSTALL CONTACTORS, CONTROL RELAYS, PUSHBUTTON STATIONS, SELECTOR SWITCHES, PILOT LIGHTS, FUSES AND SIMILAR CONTROL AUXILIARIES AS SHOWN ON DRAWINGS AND/OR REQUIRED TO PROVIDE PROPER CONTROL AND ISOLATION BETWEEN VARIOUS AUTOMATIC CONTROLLERS AND EQUIPMENT SHOWN ON THE DRAWINGS.

G. CIRCUIT BREAKERS FEEDING MOTOR LOADS SHALL BE HACR TYPE.

H. EQUIPMENT SHALL BE SAME MAKE AS MOTOR STARTERS, PUSHBUTTON STATIONS, SELECTOR SWITCHES, PILOT LIGHTS, HEAVY DUTY, OIL TIGHT, STANDARD SIZE, WITH TRANSFORMER TYPE PILOT LIGHTS, FLUSH MOUNTED WHERE PRACTICAL.

I. OVERLOAD DEVICES, INCLUDING EQUIPMENT FURNISHED UNDER OTHER CONTRACTS, SHALL BE SET AND ADJUSTED TO SUIT THE LOAD CONDITIONS.

26 51 00 INTERIOR LIGHTING

A. INSTALL LIGHTING FIXTURES AS SHOWN ON THE DRAWINGS.

B. LIGHTING FIXTURES SHALL BE LISTED AND LABELED BY UNDERWRITERS LABORATORIES AND BALLASTS SHALL BE CBM CERTIFIED BY ETC.

C. LAMPS SHALL BE MANUFACTURED BY PHILIPS, OSRAM/SYLVANIA OR GENERAL ELECTRIC. LAMP TYPES SHALL BE BY THE SAME MANUFACTURER.

D. PROVIDE LIGHTING FIXTURES COMPLETE WITH BALLASTS, SOCKETS, LAMPS, END AND TRIM PLATE AND MOUNTING ACCESSORIES REQUIRED FOR A COMPLETE FIXTURE INSTALLATION.

E. FURNISH INCANDESCENT AND HIGH INTENSITY DISCHARGE RECESSED LIGHTING FIXTURES WITH THERMAL CUT OUTS AS REQUIRED BY THE NEC.

F. USE RAPID-START HIGH-POWER-FACTOR ELECTRONIC BALLASTS AND TR LAMPS, UNLESS NOTED OTHERWISE. FURNISH SPECIAL LOW TEMPERATURE BALLASTS FOR EXTERIOR MOUNTED FIXTURES.

G. UNLESS OTHERWISE NOTED, LENSES ON FLUORESCENT FIXTURES ARE TO BE 1/2" THICK AND MIN OF 0.125 IN. THICK.

H. RECESSED HID FIXTURES SHALL CARRY A ULR LISTING. THEY SHALL HAVE A THERMAL CUTOUT ON BOTH THE BALLAST AND THE FIXTURE ITSELF.

I. USE STEEL WIRE HANGERS FASTENED TO THE BUILDING STRUCTURE TO SUPPORT RECESSED FIXTURES AT EACH CORNER (FOR CORNER SUSPENDED). FIXTURES TO FIT TIGHT AGAINST CONSTRUCTION TO ELIMINATE LIGHT LEAKS.

J. WALL-MOUNTED FIXTURES SHALL BE MOUNTED PLUMB TO BUILDING LINES AND INSTALLED WITH PROPER BOX AND COVER HARDWARE.

K. SURFACE-MOUNTED FIXTURES SHALL COVER MOUNTING HARDWARE. USE A CANOPY THAT IS NO LONGER THAN THE LENGTH AND WIDTH OF THE FIXTURE AND AT A HEIGHT THAT IS NO HIGHER THAN REQUIRED TO MOUNT FIXTURE ABSOLUTELY VERTICAL. CANOPY FINISH SHALL MATCH FIXTURE FINISH.

L. STEPL-MOUNTED FIXTURES SHALL BE MOUNTED SO AS TO BE ABSOLUTELY VERTICAL AND HORIZONTAL. INSTALL AND SUPPORT AS SHOWN ON DRAWINGS.

27 00 00 GENERAL REQUIREMENTS

A. PROVIDE MATERIALS, LABELS, TOOLS, TRANSPORTATION INCIDENTALS AND APPURTENANCES TO COMPLETE IN EVERY DETAIL AND LEAVE IN WORKING ORDER WORK CALLED FOR HEREIN AND AS INDICATED ON THE DRAWINGS.

B. MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS:

1. TELECOMMUNICATIONS INDUSTRIES ASSOC./ELECTRONIC INDUSTRIES ALLIANCE (TIA/EIA): TIA/EIA 568A, 568B, AND TIA/EIA 606 TELECOMMUNICATION CABLE STANDARD.
2. TIA/EIA 568 TELECOMMUNICATION PATHWAYS AND SPACES.
3. TIA/EIA 569 TELECOMMUNICATION INFRASTRUCTURE.
4. TIA/EIA 605 WIRING AND BONDING.
5. COMPLY WITH NFPA 70.
6. COMPLY WITH NFPA 70.

C. FURNISH NEW AND UN-DETERIORATED MATERIALS OF A QUALITY NOT LESS THAN SPECIFIED HEREIN. ALL MATERIAL SHALL HAVE MANUFACTURER'S NAME, MODEL NUMBER, OR OTHER IDENTIFICATION MARKING.

D. THE CONTRACTOR SHALL BEAR THE COSTS OF PERMITS, INSPECTIONS TESTS, AND APPROVALS.

E. PROVIDE ON-SITE PERSONNEL TO TROUBLESHOOT AND REPAIR ANY PROBLEMS THAT ARISE DURING CUTOVER AS THEY RELATE TO THEIR INSTALLED SYSTEM.

F. UPON COMPLETION OF THE WORK, FURNISH A WARRANTY FOR COMPONENTS, PARTS, AND ASSEMBLIES AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. WARRANTY SERVICES SHALL BE PROVIDED BY A CERTIFIED FACTORY TRAINED REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER FOR A MINIMUM OF ONE YEAR OR AS SPECIFIED IN EACH INDIVIDUAL SECTION.

27 05 10 TELEPHONE AND DATA CONDUIT SYSTEM

A. FURNISH AND INSTALL A SYSTEM OF CONDUIT RACEWAYS, OUTLET BOXES, PULL WIRES, AND TERMINAL BOARDS AS SHOWN ON THE DRAWINGS. TELEPHONE SWITCHING APPARATUS, CONDUCTORS, INSTRUMENTS, MISCELLANEOUS EQUIPMENT AND APPURTENANCES ARE NOT PART OF THIS CONTRACT AND WILL BE PROVIDED AND INSTALLED BY OTHERS.

B. CONDUITS FOR TELEPHONE WALL OUTLETS AND DATA WIRING SHALL BE A MINIMUM OF 1" UNLESS NOTED OTHERWISE.

C. FURNISH AND INSTALL A 3/4" THICK, FIRE-TREATED, PLYWOOD TELECOM BACKBOARD AT LOCATION SHOWN ON THE DRAWINGS. PAINT WITH FIRE RETARDANT "P-B" OR AS DIRECTED BY TENANT'S CONSTRUCTION MANAGER. THE PLYWOOD BACKBOARD SHALL BE SECURELY ATTACHED TO THE BUILDING WALLS TO SUPPORT RELAY PANELS, TERMINAL BLOCKS AND OTHER HARDWARE WEIGHING APPROXIMATELY 10 POUNDS PER SQUARE FOOT.

D. CONDUIT RUNS FOR DATA AND TELEPHONE SHALL BE CONTINUOUS WITH NO JUNCTION BOXES EXCEPT AS NOTED ON DRAWINGS. THIS INCLUDES BUT IS NOT LIMITED TO RUNS BETWEEN TELEPHONE BOARD, MANAGER'S OFFICE, SOUND SYSTEM, CASHWRAPS AND TELEPHONE SETS.

E. FURNISH AND INSTALL PULL STRING IN EMPTY CONDUITS. LABEL CONDUITS FOR PURPOSE DESIGNATED.

F. FURNISH AND INSTALL #6 COPPER GROUND WIRE FROM TELECOM BACKBOARD TO RESPECTIVE 120/208 VOLT TENANT PANELBOARD - GROUND PER TELEPHONE COMPANY'S REQUIREMENTS.

G. OUTLET BOXES TO BE 4" SQUARE MINIMUM WITH SINGLE DEVICE COVER AND TELEPHONE PLATE.

27 05 15 INTERIOR COMMUNICATIONS PATHWAYS

A. INTERIOR COMMUNICATIONS PATHWAYS SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR AND BY THE TELECOMMUNICATIONS CONTRACTOR AS SPECIFIED HEREIN.

B. INSTALL CONDUITS AS DETAILED IN DRAWINGS.

27 11 00 HORIZONTAL CABLING AND CONNECTIVITY

A. PROVIDE A 10/100/1000 Mbps FULL-DUPLEX TRANSMISSION ETHERNET NETWORK OVER 4-PAIR CATEGORY 6 UTP HORIZONTAL CABLING. THE SYSTEM SHALL BE A CERTIFIED SOLUTION BY THE CONNECTIVITY MANUFACTURER. THE HORIZONTAL INFRASTRUCTURE SHALL SUPPORT BOTH VOICE AND DATA APPLICATIONS.

B. THIS SECTION INCLUDES WIRE, CABLE, CONNECTING DEVICES, INSTALLATION, AND TESTING FOR WIRING SYSTEMS FOR VOICE, VIDEO, AND DATA TRANSMISSION. THE SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. MOUNTING ELEMENTS
2. UNSHIELDED TWISTED-PAIR CABLE
3. PATCH, STATION AND CROSS CONNECT CORDS
4. JACKS AND FACEPLATES
5. TERMINATION AND PATCH PANELS

C. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. COPPER CABLES (UTP):
 - a. BERK-TEK, INC.
 - b. BELDEN
 - c. MOHAWK
 - d. GENERAL
 - e. UNIFRISE
2. MODULAR JACKS & FACEPLATES:
 - a. LEVITON
 - b. HUBBELL
 - c. ORTRONICS
 - d. PANDUIT
 - e. UNIFRISE

D. HORIZONTAL CABLES FOR VOICE/DATA/VIDEO INFRASTRUCTURE:

1. LISTED AS COMPLYING WITH CATEGORY 6 OF TIA/EIA-568-C.
2. CONDUCTORS: NO. 28 AWG, SOLID COPPER, THERMOPLASTIC-INSULATED.
3. UTP CABLE: FOUR-PAIR, INDIVIDUALLY TWISTED PAIRS OF CONDUCTORS, COLOR-CODED, ENCLOSED IN A JACKET.
4. CABLE RATING: PLENUM - LISTED FOR USE IN AIR-HANDLING SPACES, NON-PLENUM IN OTHER AREAS.
5. CABLE COLOR CODING: BLUE FOR DATA, YELLOW FOR VOICE, AND WHITE FOR VIDEO.

E. WORKSTATION OUTLETS: SINGLE CATEGORY 6 JACK CONNECTOR MOUNTED IN FACEPLATE.

1. FACEPLATE: HIGH IMPACT PLASTIC, COLOR TO BE WHITE.
2. MOUNTING: FLUSH, UNLESS OTHERWISE INDICATED.
3. LABELING: SHALL HAVE INTEGRAL LABEL WITH LABEL COVER.
4. JACK SPACES AS INDICATED ON THE DRAWINGS WITH ANY NECESSARY BLANKS. BLANKS SHALL MATCH FACEPLATE COVER.

F. WIRING METHOD: INSTALL HORIZONTAL CABLING IN RACEWAY EXCEPT WITHIN RACEWAY ENCLOSURES, IN ACCESSIBLE CEILING SPACES, AND ROUTED VERTICALLY IN GYPSED BOARD PARTITIONS, WHERE OPEN-CABLE WIRING METHOD MAY BE USED. CONCEAL RACEWAY CABLING EXCEPT IN UNFINISHED SPACES. IN ACCESSIBLE CEILINGS, USE APPROPRIATELY SIZED HOOKS TO SUPPORT THE CABLING EVERY FOUR FEET (MAXIMUM).

G. INSTALL CABLE USING TECHNIQUES, PRACTICES, AND METHODS THAT ARE CONSISTENT WITH CATEGORY 6 RATINGS OF COMPONENTS AND THAT INSURE CABLES MEET PERFORMANCE OF COMPLETED AND LINKED SIGNAL PATHS, END TO END.

H. DO NOT BEND CABLE IN HANDLING OR IN INSTALLING TO SMALLER RADIUS THAN MINIMUMS RECOMMENDED BY MANUFACTURER.

I. HORIZONTAL CABLES: LABEL CABLES AT THE WORK AREA END AND AT THE CLOSEST END WITH THE PATCH PANEL PORT NUMBER. LABEL EACH CABLE WITHIN 3 INCHES OF EACH TERMINATION, WHERE IT IS ACCESSIBLE IN A CABINET OR JUNCTION OR OUTLET BOX, AND ELSEWHERE AS INDICATED.

J. WORKSTATION: LABEL CABLES AT OUTLET BOXES AND NEATLY TYPE ON THE INTEGRAL LABEL IN THE FACEPLATE WITH THE PATCH PANEL PORT NUMBER.

K. WARRANTY PERIOD: COMMUNICATIONS CONNECTIVITY (INCLUDING COPPER), MANUFACTURER'S STANDARD, BUT NOT LESS THAN 25 YEARS FROM THE DATE OF CONTRACT COMPLETION.

28 31 11 DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

A. EXISTING MICRO-PROCESSOR CONTROLLED FIRE DETECTION SYSTEM APPLIANCES SHALL REMAIN WITH SUPPLEMENTAL DEVICES PROVIDED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS, AND AS REQUIRED BY LOCAL AUTHORITY.

B. ACCEPTABLE MANUFACTURERS:

1. MANUFACTURERS SUBJECT TO COMPLIANCE WITH EXISTING SYSTEM REQUIREMENTS.
2. MANUFACTURERS OFFERING FIRE ALARM SYSTEM THAT MAY BE INCORPORATED INTO THE WORK AREA LISTED AND COMPATIBILITY WITH THE EXISTING SYSTEM.

C. SYSTEM DESCRIPTION:

THE SERVICED, CODED, CLOSED-CIRCUIT TYPE SYSTEM SHALL BE SO ARRANGED THAT PULLING A MANUAL PULL STATION OR OPERATION OF ONE OF THE AUTOMATIC DETECTING DEVICES WILL REGISTER AN ALARM AT THE FIRE ALARM CONTROL PANEL. THIS WILL CAUSE IMMEDIATE AND CONTINUOUS OPERATION OF THE BUILDING ALARM SIGNALS TO SOUND THE GENERAL ALARM SIGNAL, UNTIL THE ALARM HAS BEEN ACKNOWLEDGED AT THE CONTROL PANEL.

D. BASIC PERFORMANCE:

1. ALARM, TROUBLE AND SUPERVISORY SIGNALS FROM REPORTING DEVICES SHALL BE ENCODED ONTO AN NFPA STYLE 4 (CLASS B) SIGNALING LINE CIRCUIT.
2. INITIATION DEVICE CIRCUITS SHALL BE WIRED CLASS B (NFPA STYLE B).
3. INDICATING APPLIANCE CIRCUITS SHALL BE WIRED STYLE Y (CLASS B).

E. SUBMIT COORDINATED SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL.

F. REFERENCES TO MANUFACTURER'S MODEL NUMBERS AND OTHER PERTINENT INFORMATION HEREIN IS INTENDED TO ESTABLISH MINIMUM STANDARDS OF PERFORMANCE, FUNCTION AND QUALITY.

G. THE SYSTEM SHALL HAVE PROPER LISTING AND APPROVAL FROM THE FOLLOWING NATIONALLY RECOGNIZED AGENCIES:

1. UL, UNDERWRITERS LABORATORIES, INC.
2. NFPA 70, NATIONAL ELECTRICAL CODE (NEC).
3. NFPA 72, NATIONAL FIRE ALARM CODE.

H. MODULAR LABELING: THE FIRE ALARM CONTROL PANEL SHALL MEET THE MODULAR LISTING REQUIREMENTS OF UNDERWRITERS LABORATORIES, INC. TO FACILITATE SYSTEM CHANGES AND EXPANSIONS, AND TO ENSURE THAT SUBASSEMBLIES HAVE THE PROPER LISTING. EACH SUBASSEMBLY OF THE FACP SHALL CARRY THE APPROPRIATE UL MODULAR LABEL. THIS INCLUDES PRINTED CIRCUIT BOARD ASSEMBLIES, POWER SUPPLIES, AND ENCLOSURE PARTS.

I. EQUIPMENT COMPONENTS SHALL BE NEW AND THE MANUFACTURER'S CURRENT MODEL. MATERIALS, APPLIANCES, EQUIPMENT AND DEVICES SHALL BE TESTED AND LISTED BY A NATIONALLY RECOGNIZED APPROVALS AGENCY FOR USE AS PART OF A PROTECTED PREMISES PROTECTIVE SIGNALING (FIRE ALARM) SYSTEM. THE AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER SHALL BE RESPONSIBLE FOR THE SATISFACTORY INSTALLATION OF THE COMPLETE SYSTEM.

J. INSTALL EQUIPMENT AND COMPONENTS IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONSULT THE MANUFACTURER'S INSTALLATION MANUALS FOR WIRING DIAGRAMS, SCHEMATICS, PHYSICAL EQUIPMENT SIZES, ETC., BEFORE BEGINNING SYSTEM INSTALLATION.

K. SECURELY ATTACH EQUIPMENT TO WALLS AND CEILING/FLOOR ASSEMBLIES.

L. INSTALL WIRING IN CONDUIT OR RACEWAY. CONDUIT FILL SHALL NOT EXCEED 40 PERCENT OF INTERIOR CROSS-SECTIONAL AREA WHERE THREE OR MORE CABLES ARE CONTAINED WITHIN A SINGLE CONDUIT.

M. CABLE MUST BE SEPARATED FROM ANY OPEN CONDUCTORS OF POWER OR CLASS I CIRCUITS, AND SHALL NOT BE PLACED IN ANY CONDUIT, JUNCTION BOX, OR RACEWAY CONTAINING THESE CONDUCTORS.

N. WIRING IN CONDUIT SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND NATIONAL CODES (E.G., NEC ARTICLE 760) AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM. NUMBER AND SIZE OF CONDUCTORS SHALL BE AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN #18 AWG (1.02 MM) FOR INITIATING DEVICE CIRCUITS AND SIGNALING LINE CIRCUITS, AND #12 AWG (1.68 MM) FOR INDICATING APPLIANCE CIRCUITS.

O. WIRE AND CABLE SHALL BE LISTED BY A RECOGNIZED TESTING AGENCY FOR USE WITH A PROTECTIVE SIGNALING SYSTEM.

P. CONNECT THE FIRE ALARM CONTROL PANEL TO A SEPARATE DEDICATED BRANCH CIRCUIT, MAXIMUM 20 AMPERES. FIRE ALARM CONTROL PANEL PRIMARY POWER WIRING SHALL BE #12 AWG. THE CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO THE BUILDING GROUNDING SYSTEM.

Q. FIRE ALARM CONTROL PANEL SHALL BE BY APPROVED MANUFACTURERS LISTED ABOVE, AND SHALL BE SURFACE MOUNTED WHERE INDICATED ON PLAN. PROVIDE A REMOTE ANNUNCIATOR PANEL FOR RECESS MOUNTING AT THE LOCATION SHOWN ON THE PLAN.

R. STROBE LIGHTS:

1. SHALL OPERATE ON 24 VDC, NOMINAL.
2. SHALL MEET ADA REQUIREMENTS AND THE FOLLOWING CRITERIA:
 - a. MINIMUM 75 CANDELA INTENSITY, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.
 - b. MULTIPLE STROBES LOCATED IN THE SAME FIELD OF VIEW SHALL BE SYNCHRONIZED WITH OTHER STROBES IN THAT AREA.
 - c. LOCATE WALL-MOUNTED APPLIANCES 80 IN. ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6 IN. BELOW THE CEILING, WHICHEVER IS LOWER.
 - d. APPLIANCES SHALL HAVE WHITE HOUSINGS WITH THE WORD 'FIRE' IN RED UNLESS PROHIBITED BY LOCAL CODES OR MALL STANDARDS.
 - e. DEVICES SHALL BE WALL- OR CEILING-MOUNTED AS INDICATED ON THE PLANS.

5. AUDIBLE/VISUAL COMBINATION DEVICE:

1. VISUAL SIGNALS SHALL MEET THE APPLICABLE REQUIREMENTS OF STROBE LIGHTS AS SPECIFIED ABOVE.
2. AUDIBLE SIGNALS SHALL BE 80B ABOVE AMBIENT SOUND LEVEL.
3. APPLIANCES SHALL HAVE WHITE HOUSINGS WITH THE WORD 'FIRE' IN RED UNLESS PROHIBITED BY LOCAL CODES OR MALL STANDARDS.
4. DEVICES SHALL BE WALL- OR CEILING-MOUNTED AS INDICATED ON THE PLANS.

6. PHOTOELECTRIC SMOKE DETECTORS:

1. PHOTOELECTRIC-TYPE SMOKE DETECTORS SHALL BE A PLUG-IN UNIT WHICH MOUNTS TO A TWIST-LOCK BASE, AND SHALL BE UL LISTED.
2. DETECTORS SHALL BE OF THE SOLID STATE PHOTOELECTRIC TYPE CONTAINING NO RADIOACTIVE MATERIAL. THEY WILL USE A PULSED INFRARED LED LIGHT SOURCE AND BE SEALED AGAINST REAR AIR FLOW ENTRY.
3. DETECTORS SHALL FIT INTO BASES COMMON WITH OTHER DETECTOR TYPES AND SHALL BE COMPATIBLE WITH OTHER ADDRESSABLE DETECTORS, ADDRESSABLE MANUAL STATIONS, ADDRESSABLE ZONE ADAPTOR MODULES ON THE SAME CIRCUIT. DETECTORS SHALL ALSO FIT INTO A NON-ADDRESSABLE BASE CAPABLE OF BEING MONITORED BY AN ADDRESSABLE ZONE ADAPTOR MODULE.
4. SENSORS AND BASES SHALL BE UL-LISTED FOR OPERATION WITH THE FIRE ALARM CONTROL PANEL.

U. DUCT SMOKE DETECTORS:

1. DUCT SMOKE DETECTORS SHALL BE OF THE SOLID STATE PHOTOELECTRIC TYPE CONTAINING NO RADIOACTIVE MATERIALS AND SHALL OPERATE ON THE LIGHT SCATTERING PHOTOELECTRIC PRINCIPLE. DETECTORS SHALL BE DESIGNED TO WITHSTAND INVISIBLE AIRBORNE PARTICLES OR SMOKE DENSITIES THAT ARE BELOW THE FACTORY RATED ALARM POINT.
2. DETECTOR REMOTE TEST AND ALARM STATIONS.

V. DUCT DETECTOR REMOTE TEST AND ALARM STATIONS:

1. KEY-OPERATED TEST/RESET OPERATION.
2. PIEZO BATTLE ANNUNCIATOR WITH A MINIMUM RATING OF 95 AT A DISTANCE OF 10'-0".
3. LED INDICATOR - ADD-ON IF REQUIRED.

W. AT THE FINAL INSPECTION, A TERRY TRAFFIC REPRESENTATIVE OF THE MANUFACTURER OF THE MAJOR EQUIPMENT SHALL DEMONSTRATE THAT THE SYSTEM FUNCTIONS PROPERLY IN EVERY RESPECT.

X. THE CONTRACTOR AND THE SYSTEMS MANUFACTURER'S REPRESENTATIVES SHALL PROVIDE A WRITTEN "SEQUENCE OF OPERATION" TO THE TENANT.

Y. BEFORE FINAL APPROVAL OF THE FIRE ALARM SYSTEM IS REQUESTED, PROVIDE THE ARCHITECT, IN WRITING, A STATEMENT THAT THE REQUIREMENTS OF THE CITY BUILDING INSPECTION AND FIRE DEPARTMENT HAVE BEEN MET AT THE INSTALLATION OF THE FIRE ALARM SYSTEM.

Z. SUBMIT TO THE TENANT UPON COMPLETION OF THE SYSTEM INSTALLATION, A CONTRACTOR'S FIRE ALARM SYSTEM CERTIFICATION AND DESCRIPTION FORM AS OUTLINED BY NFPA 72, AND AN APPROVAL INSPECTION FORM FOR THE FIRE ALARM PORTION OF THE SYSTEM.

(END OF ELECTRICAL SPECIFICATION)

OWNER:
UNTUCKIT
 SHIRTS DESIGNED TO
 BE WORN UNTUCKED.
 110 GREENE STREET
 SUITE 400
 DURHAM, NC 27701

ARCHITECT/ENGINEER:
SHREMSHOCK
 North Carolina Firm
 License Number: #C-3048
 www.shremshock.com

Shremshock Architects & Engineers, Inc.
 7400 W. Campus Rd. Ste. 150 New Albany, OH 43054
 T: 614 545 4550 F: 614 545 4550

STORE NO: -

PROJECT LOCATION:
 THE STREETS AT
 SOUTHPOINT
 6910 FAYETTEVILLE RD
 SPACE#: 1140
 DURHAM, NC 27713

DESIGN TYPE: -

REVISIONS:
 REQUIRED BY: DATE

* INDICATES NO REVISION TO THIS SHEET

DRAWN BY: JWH
 CHECKED BY: KAH

Bid Set
 TRCI
 04.10.18

DRAWING TITLE:
 ELECTRICAL
 SPECIFICATIONS

DATE ISSUED:
 03/30/2018

PROJECT NO:
 180088

DRAWING NO:
E5.1

OWNER THE ARCHITECT/ENGINEER ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THESE PLANS FOR ANY PROJECT OTHER THAN SPECIFICALLY AUTHORIZED BY THEM AND BOUND AND SEALED FOR SUCH SPECIFIC LOCATION IN THE STATE. PROVISIONS OF THESE PLANS SHOWN ON THE DRAWING ARE ONLY APPLICABLE IN AREAS MEETING THE STATE DESIGN CRITERIA.