ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

- 1. GENERAL PROVISIONS: DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK IN CONTRACT. REFER TO ALL DRAWINGS ASSOCIATED WITH THIS PROJECT (EACH TRADE) FOR EXACT LOCATION OF ALL EQUIPMENT AND REQUIRED
- 2. SCOPE: PERFORM WORK AND PROVIDE NEW MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS. PROVIDE ALL COMPONENTS AND MATERIALS, WHETHER SPECIFICALLY SHOWN OR NOT, THAT ARE NECESSARY TO MAKE THE SYSTEMS COMPLETE AND FULLY OPERATIONAL. WORK SHALL INCLUDE. BUT NOT BE LIMITED TO: 1) THE DESIGN INTENT AS ILLUSTRATED ON THESE DRAWINGS, 2) REQUIREMENTS FOR THIS PROJECT INCLUDED IN THE "NARRATIVE REPORT FIRE PROTECTION CONSTRUCTION DOCUMENTS" AND 3) ALL TESTING AND CERTIFICATIONS NECESSARY FOR COMPLIANCE AND ANY REQUIRED REMEDIAL ACTIONS AND RETESTING DUE
- 3. SITE VISIT: VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS THAT MAY AFFECT WORK OF THIS SECTION BEFORE SUBMITTING BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY DISCERNED.
- 4. RELATED WORK: THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND WILL BE PROVIDED UNDER OTHER SECTIONS: 1) TEMPORARY LIGHTING AND POWER FOR USE DURING CONSTRUCTION AND TESTING UNLÉSS SPECIFICALLY NOTED IN OTHER SPECIFICATION SECTIONS, 2) TELECOMMUNICATIONS WIRING AND DEVICES UNLESS SPECIFICALLY NOTED ON THE DRAWINGS 3) AUTOMATIC TEMPERATURE CONTROL AND DIRECT DIGITAL COMMUNICATIONS WIRING UNLESS SPECIFICALLY NOTED ON THE DRAWINGS AND 4)
- 5. CODES, STANDARDS, AUTHORITIES AND PERMITS: ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STATE BUILDING CODE. THE STATE ELECTRICAL CODE. NFPA. ANSI/NECA INSTALLATION STANDARDS AND OTHER APPLICABLE CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENT, OTHER AUTHORITIES HAVING JURISDICTION AND APPLICABLE BASE BUILDING STANDARDS AND SPECIFICATIONS. CODES, LAWS AND ORDINANCES PROVIDE A BASIS FOR THE MINIMUM INSTALLATION CRITERIA. THESE DRAWINGS AND SPECIFICATIONS ILLUSTRATE THE SCOPE REQUIRED FOR THIS PROJECT, WHICH MAY EXCEED MINIMUM CODE, LAW AND STANDARDS CRITERIA. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY BACKCHARGES AND OBTAIN NECESSARY APPROVALS FROM UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION AS REQUIRED FOR THE EXECUTION OF ALL WORK ASSOCIATED WITH THIS
- 6. INTERPRETATION OF DOCUMENTS: ADVISE THE ENGINEER IN WRITING (RFI) PRIOR TO PROCEEDING WITH PROCUREMENT OR INSTALLATION THAT THE DESIGN INTENT IS UNCLEAR OR THAT CONSTRUCTION DOCUMENTS DO NOT COINCIDE WITH MANUFACTURER'S RECOMMENDATIONS. ALL COSTS FOR REWORK NECESSARY TO RESOLVE DISCREPANCIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 7. REQUEST FOR INFORMATION: RFI ISSUED TO RESOLVE A CONFLICT OR DISCREPANCY SHALL BE PROVIDED WITH THE PREFERRED SOLUTION VIA WRITTEN DESCRIPTION OR
- 8. SUBMITTALS: PROVIDE SPECIFIED MATERIALS AND EQUIPMENT UNLESS "EQUAL" OR "APPROVED EQUAL" IS EXPLICITLY INDICATED ON THE DRAWINGS. DEVIATIONS TO SPECIFIED MATERIALS SHALL BE AT THE SOLE RISK OF THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR ALL ASSOCIATED CHANGES TO THIS AND OTHER TRADES. SUBMITTALS SHALL INDICATE REVIEW AND APPROVAL BY THE RESPONSIBLE CONTRACTOR. SUBMIT FOR REVIEW (6) SETS OF MANUFACTURER'S PRODUCT DATA FOR ALL LIGHTING, LAMPS. BALLASTS AND CONTROLS: DEVICES (RECEPTACLES AND SWITCHES) AND PLATES: FIRE ALARM SYSTEM COMPONENTS; ALLOW ENGINEER A MINIMUM OF 10 WORKING DAYS FOR PROCESSING AND REVIEW OF EACH SUBMISSION.
- 9. OPERATION AND MAINTENANCE DATA: SUBMIT (3) SETS OF OPERATING AND MAINTENANCE MANUALS INCLUDING SYSTEM DESCRIPTION, WIRING DIAGRAMS, WRITTEN WARRANTY, RECOMMENDED SPARE PARTS AND ROUTINE MAINTENANCE REQUIREMENTS WITH RECOMMENDED INTERVALS FOR ALL SUPPLIED EQUIPMENT.
- 10.RECORD DRAWINGS: CAD RECORD DRAWING FILES SHALL BE SUBMITTED AT THE COMPLETION OF THE PROJECT SHOWING THE "AS-BUILT" CONDITION INCLUDING WORK INSTALLED AND ALL MODIFICATIONS OR ADDITIONS TO ORIGINAL DESIGN. OBTAIN THE AUTOCAD FILES FOR PREPARATION OF AS-BUILT DRAWINGS FROM THE ARCHITECT. THE ARCHITECT AND ENGINEER ARE NOT GRANTING ANY OWNERSHIP OR PROPERTY INTEREST IN THE CAD DRAWINGS BY THE DELIVERY OF THE CAD FILES. THE RIGHTS TO USE THE CAD FILES AND DRAWINGS ARE LIMITED TO USE FOR THE SOLE PURPOSE OF ASSISTING IN THE PERFORMANCE OF CONTRACTUAL OBLIGATIONS WITH RESPECT TO THIS PROJECT. ANY REUSE AND/OR OTHER USE WILL BE AT THE CONTRACTOR'S SOLE RISK AND WITHOUT LIABILITY TO THE ARCHITECT AND ENGINEER.
- 11.WARRANTIES: WARRANTY INSTALLATION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. REPAIR, REPLACE OR PROVIDE TEMPORARY ACCOMMODATIONS FOR DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN 24 HOURS OF NOTIFICATION. WARRANTY SHALL INCLUDE A CONTACT PERSON (NAME AND 24 HOUR TELEPHONE NUMBER) FOR SERVICE REQUESTS. CORRECT DAMAGE CAUSED WHILE MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER WARRANTY PERIOD AT NO ADDITIONAL COST.

- 12.COORDINATION: CONFER WITH ALL OTHER TRADES RELATIVE TO LOCATION OF ALL APPARATUS AND EQUIPMENT TO BE INSTALLED AND SELECT LOCATIONS SO AS NOT TO CONFLICT WITH OR HINDER PROGRESS OF WORK OF OTHER SECTIONS. WORK INSTALLED THAT CREATES INTERFERENCE OR RESTRICTS ACCESS REQUIRED BY CODE OR TO CONDUCT MAINTENANCE AND/OR ADJUSTMENTS SHALL BE MODIFIED AT NO ADDITIONAL COST TO THE
- 13.SUPPORTS: INCLUDE ALL STRUCTURAL STEEL SUPPORTS, HANGER BRACKETS, ETC., REQUIRED FOR THE EXECUTION OF THE WORK OF THIS SECTION. HANGERS SHALL BE PREFINISHED CHANNEL AND THREADED ROD USED WITH APPROVED CLAMPS. HARDWARE. ETC. CHANNEL INSTALLED IN EXTERIOR LOCATIONS SHALL BE GALVANIZED STEEL WITH STAINLESS STEEL HARDWARE.
- 14.CUTTING AND PATCHING: INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THE WORK OF THIS SECTION. STRUCTURAL ELEMENTS SHALL NOT BE CUT WITHOUT WRITTEN APPROVAL OF THE ARCHITECT. PROVIDE FIRE STOPPING TO MAINTAIN THE FIRE RATING OF THE FIRE RESISTANCE-RATED ASSEMBLY. ALL PENETRATIONS AND ASSOCIATED FIRE STOPPING SHALL BE INSTALLED IN ACCORDANCE WITH THE FIRE STOPPING MANUFACTURER'S LISTED INSTALLATION DETAILS AND BE LISTED BY UL
- 15.HOISTING, SCAFFOLDING AND PLANKING: INCLUDE THE FURNISHING, SET-UP AND MAINTENANCE OF ALL HOISTING MACHINERY, SCAFFOLDS, STAGING AND PLANKING AS REQUIRED FOR THE EXECUTION OF WORK FOR THIS SECTION.
- 16. SAFETY PRECAUTIONS: LIFE SAFETY AND ACCIDENT PREVENTION SHALL BE A PRIMARY CONSIDERATION. COMPLY WITH ALL OF THE SAFETY REQUIREMENTS OF THE OWNER AND OSHA THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. FURNISH, PLACE AND MAINTAIN PROPER GUARDS AND ANY OTHER NECESSARY CONSTRUCTION REQUIRED TO SECURE SAFETY OF LIFE AND PROPERTY.
- 17.ACCESSIBILITY: ALL WORK PROVIDED UNDER THIS SECTION OF THE SPECIFICATION SHALL BE SO THAT PARTS REQUIRING PERIODIC INSPECTION, MAINTENANCE AND REPAIR ARE READILY ACCESSIBLE. WORK OF THIS TRADE SHALL NOT INFRINGE UPON CLEARANCES REQUIRED BY EQUIPMENT OF OTHER TRADES,
- 18.PROTECTION OF WORK AND PROPERTY: THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND PROTECTION OF ALL WORK INCLUDED UNDER THIS SECTION UNTIL THE COMPLETION AND FINAL ACCEPTANCE OF THIS PROJECT. PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE FROM ALL CAUSES INCLUDING, BUT NOT LIMITED TO, FIRE, VANDALISM AND THEFT. ALL MATERIALS AND EQUIPMENT DAMAGED OR STOLEN SHALL BE REPAIRED OR REPLACED WITH EQUAL MATERIAL OR EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. PROTECT ALL EQUIPMENT, OUTLETS AND OPENINGS, AND ROOF PENETRATIONS WITH TEMPORARY PLUGS, CAPS AND COVERS. PROTECT WORK AND MATERIALS OF OTHER TRADES FROM DAMAGE THAT MIGHT BE CAUSED BY WORK OR WORKMEN UNDER THIS SECTION AND MAKE GOOD DAMAGE THUS CAUSED. DAMAGED MATERIALS ARE TO BE REMOVED FROM THE SITE; NO SITE STORAGE OF DAMAGED MATERIALS WILL BE ALLOWED. ANY DAMAGE TO EXISTING SYSTEMS AND EQUIPMENT CAUSED BY THIS CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.
- 19.PROJECT CLOSEOUT: A CERTIFICATE OF COMPLETION SHALL BE ISSUED BY THE CONTRACTOR INDICATING THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL STATUTES AND CODES. FINAL INSPECTION BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT OF THE CERTIFICATE OF COMPLETION. NO LIFE SAFETY DEFICIENCIES IN THE EGRESS OR EXIT LIGHTING SYSTEMS, FIRE ALARM SYSTEM OR THE EMERGENCY POWER SYSTEM SHALL BE PRESENT WHEN REQUESTING FINAL INSPECTION. PREMATURE REQUESTS FOR FINAL INSPECTIONS THAT REQUIRE REINSPECTION OF DEFICIENT ITEMS WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH THE REINSPECTION.

- 1. IDENTIFICATION: NAMEPLATES SHALL INDICATE EQUIPMENT TAG, VOLTAGE CHARACTERISTICS AND SOURCE OF POWER. REFER TO NAMEPLATE DETAIL FOR ADDITIONAL INFORMATION.
- 2.RACEWAYS AND CONDUIT: RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE UTILIZED WITH THREADED FITTINGS ONLY. ELECTRICAL METALLIC TUBING (EMT) SHALL BE UTILIZED WITH SET SCREW TYPE FITTINGS. PROVIDE CONDUIT EXPANSION FITTINGS WITH EXTERNAL BONDING JUMPERS EQUAL TO OZ GEDNEY TYPE EX FOR RGS AND TYPE TX FOR EMT WHEN CROSSING EXPANSION JOINTS. UL LISTED LIQUID TIGHT FLEXIBLE METAL CONDUIT (LFMC) AND FLEXIBLE METAL CONDUIT (FMC) SHALL BE USED FOR FINAL CONNECTIONS TO EQUIPMENT WHERE FLEXIBILITY OR VIBRATION ISOLATION ARE REQUIRED. LFMC SHALL BE UV RESISTANT WHEN INSTALLED IN AN EXTERIOR LOCATION.
- 3. WIRE AND CABLE: ALL CONDUCTORS SHALL BE TYPE THHN/THWN OR XHHW, COPPER. RATED 75°/90°C, 600 VOLT INSULATION UNLESS OTHERWISE NOTED, MINIMUM SIZE CONDUCTOR SHALL BE #12 AWG COPPER. CONDUCTORS #10 AWG AND LARGER SHALL BE STRANDED; #12 AWG AND SMALLER SHALL BE SOLID. EACH BRANCH CIRCUIT AND FEEDER SHALL BE PROVIDED WITH AN INSULATED GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250.122. CONDUCTOR COLOR CODING SHALL BE IN ACCORDANCE WITH THE DETAILS ON THESE DRAWINGS. COLOR CODING SHALL BE CONSISTENT THROUGHOUT INCLUDING CONDUCTORS INSTALLED IN RACEWAYS AND IN ALL CABLE ASSEMBLIES (MC AND/OR AC). FLEXIBLE METAL CLAD (MC) CABLE SHALL BE UL LISTED WITH INSULATED THHN PHASE AND GROUND CONDUCTORS' WITHIN A GALVANIZED STEEL INTERLOCKING

- 4. WIRING DEVICES AND PLATES: ALL DEVICES SHALL MATCH THE EXISTING. ALL DEVICES SHALL HAVE A GREEN GROUNDING TERMINAL ON THE YOKE, RECEPTACLES SHALL BE UL FEDERAL SPECIFICATION WC-596 EXTRA HEAVY DUTY 20A 125V EQUAL TO HUBBELL #5362. GFCI RECEPTACLES SHALL BE COMMERCIAL SPECIFICATION GRADE 20A 125V EQUAL TO HUBBELL GF20. SWITCHES SHALL BE INDUSTRIAL—INSTITUTIONAL HEAVY DUTY SPECIFICATION GRADE 20A 120/277V EQUAL TO HUBBELL 2200 SERIES.
- 5.LIGHTING: FLUORESCENT FIXTURES SHALL HAVE ELECTRONIC BALLAST WITH HIGH POWER FACTOR, SOUND RATING "A" AND SHALL BE CBM-CERTIFIED. TOTAL HARMONIC DISTORTION SHALL BE LESS THAN 10%. BALLAST SHALL BE PROGRAMMED RAPID START AND HAVE A MINIMUM BALLAST FACTOR OF 0.88. ACCEPTABLE BALLAST MANUFACTURER ARE OSRAM SYLVANIA INC., ADVANCE ELECTRIC, OR APPROVED EQUAL, ELECTRONIC BALLAST THAT OPERATE T-5 AND COMPACT FLUORESCENT LAMPS SHALL HAVE END-OF-LAMP-LIFE SHUT DOWN TO PROTECT AGAINST LAMP OVER HEATING. LAMPS SHALL HAVE MINIMUM CRI RATING
- 6.FIRE ALARM SYSTEM MODIFICATIONS: MODIFICATIONS MADE TO THE BASE BUILDING FIRE ALARM SYSTEM SHALL BE MADE IN COMPLIANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS. ALL NEW COMPONENTS SHALL BE UL LISTED FOR THEIR INTENDED PURPOSE AND CROSS-LISTED FOR USE ON THE EXISTING SYSTEM.
- THE ADDITION OF NEW INITIATING DEVICES OR NOTIFICATION APPLIANCES TO THE EXISTING SLC AND NAC SHALL NOT ADVERSELY EFFECT SUPERVISION. THE WIRING CLASS AND STYLE FOR THE ADDITION OF DEVICES SHALL BE CONSISTENT WITH EXISTING AND PER THE RISER DIAGRAM INCLUDED IN THESE DRAWINGS.
- NEW DEVICES SHALL BE PROGRAMMED TO INITIATE ACTION IN ACCORDANCE WITH THE EXISTING SEQUENCE OF OPERATION AS APPROVED BY THE AHJ. SYSTEM SUBMITTAL SHALL INCLUDE AN INPUT/OUTPUT MATRIX CLEARLY DEFINING THE SEQUENCE FOR EACH ADDED
- PROVIDE DISTRIBUTED INTELLIGENT POWER SUPPLIES TO ACCOMMODATE THE POWER REQUIREMENTS OF NAC CIRCUITS. POWER SUPPLIES SHALL COMMUNICATE WITH THE FACP VIA DATA COMMUNICATIONS, WHEREBY EACH POWER SUPPLY SHALL REPORT A LOSS OF AC POWER, BATTERY FAIL OR GROUND FAULT, AND EACH NOTIFICATION APPLIANCE CIRCUIT SERVED SHALL BE INDIVIDUALLY MONITORED FOR WIRING INTEGRITY. STANDBY BATTERIES SHALL SUPPORT THE SYSTEM IN THE EVENT OF A LOSS OF PRIMARY POWER FOR 60 HOURS OF FULL SUPERVISORY OPERATION FOLLOWED BY 10 MINUTES OF ALARM. BATTERIES SHALL BE MOUNTED INTEGRAL TO THE POWER SUPPLY CABINET.
- VISUAL SIGNAL SHALL BE SELF—SYNCHRONIZING XENON STROBES RATED BY UL 1971 TEST CRITERIA AND IN ACCORDANCE WITH NFPA 72. VISUAL SIGNALS SHALL HAVE A MINIMUM EFFECTIVE INTENSITY OF 15 CANDELA (CD) OR AS OTHERWISE SPECIFIED ON THE DRAWINGS. DEVICES SPECIFIED AS 15CD SHALL BE 15/75CD DUAL RATED. MULTIPLE STROBES VISIBLE FROM A SINGLE LOCATION SHALL BE SYNCHRONIZED.

7. GENERAL: ALL INTERRUPTIONS AND SHUTDOWNS OF EXISTING ELECTRICAL SYSTEMS AND SERVICES SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER AND ENGINEER. THE CONTRACTOR SHALL INCLUDE ALL PREMIUM TIME ASSOCIATED WITH THE SYSTEM AND SERVICE INTERRUPTIONS AND SHUTDOWNS.

- 8. IDENTIFICATION: FURNISH AND INSTALL NAMEPLATES ON ALL ELECTRICAL EQUIPMENT INCLUDING PANELS, JUNCTION BOXES, DISCONNECT SWITCHES, TRANSFORMERS AND
- 9. RACEWAYS AND CONDUIT: REFER TO POWER, LIGHTING AND FIRE ALARM DRAWINGS FOR ALLOWABLE WIRING METHODS. EMT MAY BE USED WITH SET SCREW FITTINGS IN CONCEALED AND EXPOSED LOCATIONS WHERE NOT EXPOSED TO PHYSICAL DAMAGE OR MOISTURE. USE RIGID GALVANIZED STEEL WITH THREADED FITTINGS WHERE EMT PROHIBITED. ALL RACEWAYS, WHICH PASS THROUGH BUILDING EXPANSION JOINTS. SHALL BE EQUIPPED WITH EXPANSION FITTINGS. ALL CONDUITS SHALL BE SUPPORTED IN AN APPROVED MANNER TO THE BUILDING STRUCTURE. SUPPORT FROM CONDUITS, DUCTWORK, PIPING, ETC. WILL NOT BE PERMITTED. RACEWAYS SHALL BE RUN CONCEALED UNLESS NOTED OTHERWISE. PERPENDICULAR AND/OR PARALLEL TO THE BUILDING STRUCTURE. NECA STANDARDS SHALL DEFINE MINIMUM QUALITY LEVEL FOR INSTALLATION WHERE
- 10. WIRE AND CABLE: BRANCH CIRCUIT WIRING IS NOT ILLUSTRATED ON THE DRAWINGS AND IS INDICATED BY CIRCUIT NUMBERS NEXT TO FIXTURES, EQUIPMENT AND DEVICES. PROVIDE COMPLETE WIRING SYSTEM TO MEET ILLUSTRATED INTENT. CONDUIT HOMERUNS SHOWN ON THE DRAWINGS WITH MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMMATICALLY. THE INSTALLATION OF MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A COMMON RACEWAY SHALL REQUIRE THE DERATING OF ALL ASSOCIATED CONDUCTORS. ALL CIRCUITS SHALL CONTAIN A FULL SIZE, INSULATED GROUND CONDUCTOR.
- 11. WIRING DEVICES AND PLATES: ALL DEVICES OTHER THAN 20A 120V SHALL BE CLEARLY LABELED WITH PERMANENTLY APPLIED NAMEPLATES (OR ENGRAVED FACEPLATES) DETAILING THE VOLTAGE CHARACTERISTICS AND CIRCUIT NUMBER.
- 12.LIGHTING: ALL LIGHT FIXTURES SHALL BE SUPPORTED IN AN APPROVED MANNER TO THE BUILDING STRUCTURE WITH A MINIMUM OF TWO SAFETY CHAINS, CONNECTED AT OPPOSITE ENDS OF THE FIXTURE. SUPPORT FROM CONDUITS, DUCTWORK, PIPING, ETC. WILL NOT BE

13.FIRE ALARM SYSTEM MODIFICATIONS:

- ALL NEW DETECTORS SHALL BE LABELED WITH ASSIGNED ADDRESS ON BOTH THE DETECTOR HOUSING AND THE BASE WITH A BLACK ON CLEAR TYPED LABEL EQUAL TO KROY. THE BASE ADDRESS SHALL BE LEGIBLE WITHOUT REMOVAL OF THE DETECTOR. THE DETECTOR ADDRESS SHALL BE CONCEALED WHEN PLACED INTO THE BASE.
- ALL JUNCTION BOXES SHALL BE SPRAYED RED AND LABELED "FIRE ALARM". CONDUIT COUPLINGS SHALL BE SPRAY PAINTED RED PRIOR TO INSTALLATION.
- CONNECTIONS AND SPLICES SHALL BE MADE USING SCREW TERMINAL BLOCKS. THE USES OF WIRE NUT TYPE CONNECTORS ARE PROHIBITED IN THE SYSTEM.
- THE CONTRACTOR SHALL PERFORM INSULATION TESTING (MEGGER), CONTINUITY AND LOOP RESISTANCE CHECKS ON ALL SYSTEM CONDUCTORS TO DETERMINE THAT THE SYSTEM IS FREE FROM GROUNDED, SHORTED, OR OPEN CIRCUITS. THESE TESTS SHALL BE CONDUCTED PRIOR TO THE INSTALLATION OF FIRE ALARM EQUIPMENT. LOOP RESISTANCE MEASUREMENT SHALL VERIFY THAT THE LOOP RESISTANCE DOES NOT EXCEED THE MANUFACTURERS SPECIFIED LIMITS. CORRECTIONS SHALL BE MADE AND THE SYSTEM SHALL BE RETESTED IF DEFICIENCIES ARE FOUND. A WRITTEN REPORT SHALL BE SUBMITTED DETAILING THE RESULTS OF THE PRELIMINARY TESTS SHALL ACCOMPANY THE REQUEST FOR FINAL ACCEPTANCE TEST.
- THE FIRM WHO HOLDS THE EXISTING SYSTEM MAINTENANCE CONTRACT SHALL PERFORM FINAL CONNECTIONS, PROGRAMMING, AND TESTING. THE CONTRACTOR SHALL CARRY ALL COSTS ASSOCIATED WITH FINAL CONNECTIONS, PROGRAMMING AND TESTING AS WELL AS DISABLING CONNECTIONS TO THE MUNICIPAL LOOP DURING FINAL CONNECTIONS AND
- CERTIFY INSTALLATION WITH THE SUCCESSFUL COMPLETION OF ALL ASSOCIATED NFPA 72 TESTS AND MEASURE SOUND PRESSURE LEVELS IN ALL ROOMS WITHIN THE SCOPE OF THIS PROJECT. SUBMIT THE TEST REPORTS FOR REVIEW PRIOR TO REQUEST FOR FINAL PUNCH LIST INSPECTION.

14.EQUIPMENT TESTING AND CLEANING:

- CLIFAN THE INTERIOR AND EXTERIOR OF ALL EQUIPMENT AT PROJECT COMPLETION OF ALL CONSTRUCTION DEBRIS AND RESIDUE. DAMAGED SURFACES SHALL BE REPAIRED AND FINISHES TOUCHED UP PAINT TO MATCH THE MANUFACTURER'S FINISH. EXTENSIVELY DAMAGED ENCLOSURES SHALL BE REPLACED.
- TEST THE INSULATION RESISTANCE BETWEEN EACH PHASE AND GROUND OF ALL FEEDERS ILLUSTRATED ON THE ONE LINE DIAGRAM. PROVIDE A TEST REPORT INDICATING THE RESULTS. REPLACE ALL CONDUCTORS THAT FAIL TO COMPLY WITH NETA TESTING STANDARDS.
- VERIFY VOLTAGE AT THE ASSOCIATED PANELBOARD UNDER LOAD AND ADJUST TAP SETTINGS AS REQUIRED TO DELIVER NOMINAL VOLTAGE DURING NORMAL AND LIGHTLY LOADED

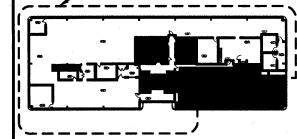


56 NORTHPORT DRIVE (1361 WASHINGTON AVENUE) PORTLAND, ME

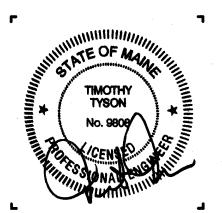


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PROJECT SCOPE



PROJECT NORTH





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ISSUANCES

Date Description 12/23/08 **ISSUED FOR PERMIT**

ELECTRICAL SPECIFICATIONS

Drawing Scale:

Checked by:

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