

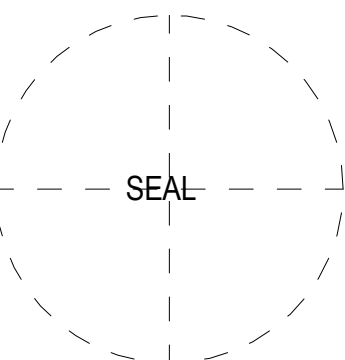


VCS Project NO. 2648250

SCHOOL BOARD MEMBERS

BOARD CHAIR
VICE BOARD CHAIR
MEMBER
MEMBER
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SUPERINTENDENT



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A.	SURVEY PARCEL ID	XXX
B.	LEGAL DESCRIPTION	XXX
C.	OCCUPANCY TYPE	XXX
D.	CONSTRUCTION TYPE	TYPE XXX
E.	RISK CATEGORY	XXX
F.	AUTOMATIC SPRINKLER	XXX
G.	BUILDING AREA	XXX
H.	BUILDING HEIGHT	XXX
I.	OCCUPANT LOAD	XXX

The diagram is a site plan of the Tule River Correctional Institution. It features five main buildings labeled BLDG. 100, BLDG. 200, BLDG. 300, BLDG. 400, and BLDG. 600. BLDG. 700 is highlighted with a thick black border. The plan also shows a 'PARENT PICK-UP' area, a 'RESTORATION FIELD', a 'GENERATOR', a 'SWIMMING POOL', and a 'BUS LOOP'. The plan is oriented with North at the top, indicated by a compass rose. The Tule River and Tule River Bridge are shown on the right side of the plan.

SHEET MANAGER	
Sheet Number	Sheet Name
G001	COVER SHEET
E001	ELECTRICAL SYMBOLS, LEGEND, AND ABBREVIATIONS
E002	ELECTRICAL GENERAL NOTES AND INDEX
E101	ELECTRICAL PLAN
E501	ELECTRICAL DETAILS
E601	ELECTRICAL PANEL AND EQUIPMENT SCHEDULES
ED101	ELECTRICAL DEMO PLAN
M001	MECHANICAL SYMBOLS, LEGEND, NOTES, AND INDEX
M101	MECHANICAL PLAN
MD101	MECHANICAL DEMOLITION PLAN
ME01	MECHANICAL CONTROL S.

Construction Documents 12/01/2025

SPIRIT ELEMENTARY
UPGRADE HVAC BLDG. 7
VCS Project NO. 2648250
1500 MEADOWLARK DR
DELTONA, FL 32725

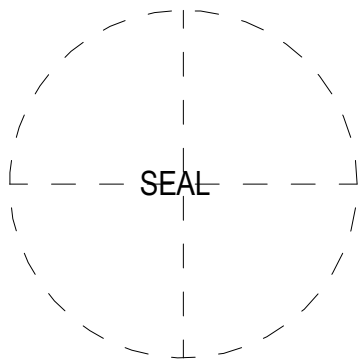
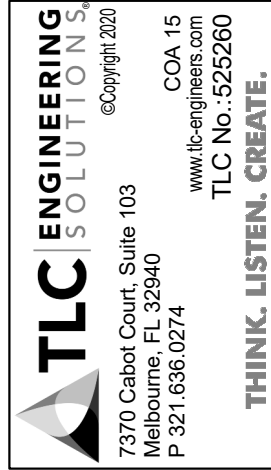
DRAWING NO.

G001

ELECTRICAL SYMBOL LEGEND

BASIC MATERIALS		ABBREVIATIONS		ABBREVIATIONS (CONT.)	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		
DEVICE ABBREVIATION TAGS					
6C	POKE-THRU WITH 6 CORE DRILL	MH	MANHOLE	IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
6C	POKE-THRU WITH 6 CORE DRILL	PB	PULLBOX	IES	ILLUMINATING ENGINEERING SOCIETY
4G	FOUR GANG FLOOR BOX	HH	HANDHOLE	IMC	INTERMEDIATE METAL CONDUIT
6G	SIX-GANG FLOOR BOX	T	TRANSFORMER	IN	INCHES
8G	EIGHT-GANG FLOOR BOX	ATS	AUTOMATIC TRANSFER SWITCH	IPCEA	INSULATED POWER CABLE ENGINEERS ASSOCIATION
AV	DOUBLE DUPLEX RECEPTACLE WITH DEDICATED CIRCUIT FOR AV RACK OR CART		NEMA RATING: NEMA 1 UNLESS OTHERWISE NOTED	IT	INSTANTANEOUS TRIP
C	RECEPTACLE CONTROLLED PER ASHRAE 90.1 (2010); PROVIDE POWER PACK FOR RECEPTACLE CIRCUIT, TO BE CONTROLLED THROUGH LOCAL ROOM OCCUPANCY SENSOR(S); PROVIDE DEVICE WITH BLUE DOT OR UNIVERSAL POWER SYMBOL		NON-FUSED DISCONNECT SWITCH, RATING AS NOTED	JB OR J-BOX	JUNCTION BOX
ETR	EXISTING TO REMAIN		NF = NON-FUSED	KCMIL	ONE THOUSAND CIRCULAR MILS
H	HOSPITAL GRADE		AR = AMPERE RATING OF SWITCH	KV	KILOVOLT
IG	ISOLATED GROUND (ORANGE DEVICE)		4X SS = NEMA 4X STAINLESS STEEL ENCLOSURE	KVA	KILOVOLT AMPERES
RL	RELOCATED		NEMA RATING: NEMA 1 UNLESS OTHERWISE NOTED	KW	KILOWATT
TR	TAMPER RESISTANT		FUSED DISCONNECT	KWH	KILOWATT HOURS
TV	RECEPTACLE MOUNTED ADJACENT TO TV OUTLET, COORDINATE HEIGHT W/ ARCHITECT		AF = AMPERE RATING OF FUSE	LBS	POUNDS
U	DUPLEX RECEPTACLE WITH (2) USB PORTS		AR = AMPERE RATING OF SWITCH	LED	LIGHT EMITTING DIODE
WP	WEATHERPROOF		4X SS = NEMA 4X STAINLESS STEEL ENCLOSURE	LP	LIGHTNING PROTECTION
				LT	LIGHT
				LTG	LIGHTING
				LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND
				LSIA	LONG TIME, SHORT TIME, INSTANTANEOUS, ALARM
				LSI	LONG TIME, SHORT TIME, INSTANTANEOUS
				MAX	MAXIMUM
				MCA	MINIMUM CIRCUIT AMPS
				MCB	MAIN CIRCUIT BREAKER
				MCC	MOTOR CONTROL CENTER
				MDP	MAIN SERVICE DISTRIBUTION PANEL
				MIC	MICROPHONE
				MIN	MINIMUM
				MLO	MAIN LUGS ONLY
				MOC	MAXIMUM OVERCURRENT PROTECTION
				MSB	MAIN SERVICE SWITCHBOARD
				MTD	MOUNTED
				MTG	MOUNTING
				MTR	MOTOR
				MTS	MANUAL TRANSFER SWITCH
				MUX	MULTIPLEX (TRANSPONDER) PANEL
				MVA	MEGA VOLT AMPS
				N	NEUTRAL
				NC	NORMALLY CLOSED
				NEC	NATIONAL ELECTRICAL CODE
				NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
				NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
				NIC	NOT IN CONTRACT
				NF	NON-FUSED
				NL	NON-LINEAR
				NO	NORMALLY OPEN OR NUMBER
				OL	OVERLOAD
				OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
				P	POLE
				PB	PULLBOX
				PF	POWER FACTOR
				PV	POST INDICATOR VALVE
				PNL	PANEL
				PR	PAIR
				PR	PRIMARY
				PT	POTENTIAL TRANSFORMER
				PVC	POLYVINYLCHLORIDE
				PWR	POWER
				REC. RECEPT	RECEPTACLE
				REF	REFRIGERATOR
				RCS, GRC	RIGID GALVANIZED STEEL CONDUIT
				RLA	RUNNING LOAD AMPERES
				RMS	ROOT-MEAN-SQUARE
				RPM	REVOLUTIONS PER MINUTE
				RTU	ROOF TOP UNIT
				SCA	SHORT CIRCUIT AMPERES
				SD	SINKHOLE DETECTOR
				SEC	SECONDARY
				SIN	SOLID NEUTRAL
				SPD	SURGE PROTECTIVE DEVICE
				SPKR	SPEAKER
				SPST	SINGLE POLE SINGLE THROW
				SS	STAINLESS STEEL
				SST	SOLID STATE TRIP
				STD	SHORT TIME TRIP
				SW	SWITCH
				SWBD	SWITCHBOARD
				SWGR	SWITCHGEAR
				TEL	TELEPHONE
				TTB	TELEPHONE TERMINAL BOARD
				TTC	TELEPHONE TERMINAL CABINET
				TVEC	TELEVISION EQUIPMENT CABINET
				TYP	TYPICAL
				UG	UNDERGROUND
				UON	UNLESS OTHERWISE NOTED
				UL	UNDERWRITERS LABORATORIES
				UTIL	UTILITY
				V	VOLT
				VA	VOLT-AMPERE
				VAR	VOLT-AMPERE REACTIVE
				VAV	VARIABLE AIR VOLUME
				VFD	VARIABLE FREQUENCY DRIVE
				W	WIRE
				WP	WEATHER PROOF
				XPMR	TRANSFORMER
				XFR	TRANSFER

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

[illegible]

SPIRIT ELEMENTARY
UPGRADE HVAC BLDG. 7
VCS Project NO. 2648250
1500 MEADOWLARK DR
DELTONA, FL 32725

ENGINEER OF RECORD
MONCEF M. HADIJI

DESIGNED BY
JOEY HOLT

DRAWN BY
JOEY HOLT

ISSUE DATE

ISSUE DATE
12/01/2025

AE PROJECT NUMBER
525260

SHEET TITLE

ELECTRICAL SYMBOLS LEGEND, AND ABBREVIATIONS

DRAWING NO.

E001

ELECTRICAL DEMOLITION NOTES

1. DEVICES, LIGHT FIXTURES AND EQUIPMENT SHOWN IN BOLD LINE TYPE ARE EXISTING TO BE DEMOLISHED; DEVICES, LIGHT FIXTURES AND EQUIPMENT SHOWN IN LIGHT (SCREENED) SOLID LINE TYPE ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.
2. EXISTING EQUIPMENT, LIGHT FIXTURES AND DEVICES SHOWN ARE BASED ON FIELD SURVEYS AND DRAWINGS PROVIDED BY THE OWNER, AND ARE NOT NECESSARILY INCLUSIVE OF ALL EXISTING ELECTRICAL EQUIPMENT, LIGHT FIXTURES AND DEVICES WITHIN PROJECT AREAS. IT IS THE INTENT THAT THE DEMOLITION PLANS PROVIDE A GENERAL KNOWLEDGE OF THE EXISTING CONDITIONS WITHIN THE PROJECT AREA. ANY DISCREPANCIES OR CONDITIONS NOT SHOWN ON THE PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR REQUIRED ELECTRICAL DEMOLITION WHETHER INDICATED ON THE PLANS OR NOT.
3. EXISTING CIRCUITING SHOWN IS BASED ON RECORD DRAWINGS AND THE SURVEYED PANEL DIRECTORIES, WHERE THEY WERE AVAILABLE. THE ACTUAL CONDITIONS MAY VARY. ALL EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO BID. THE CONDITIONS SHOWN ARE INTENDED TO SHOW THE GENERAL LOCATIONS OF EXISTING DEVICES, LIGHT FIXTURES AND EQUIPMENT, WHERE SHOWN ON THE PLAN DRAWINGS, AND IN NO WAY RELIEVES THE CONTRACTOR FROM PROVIDING ANY AND COORDINATION NECESSARY TO COMPLETE THE NEW WORK. FIELD CONDITIONS SHALL GOVERN.
4. WHERE EXISTING DEVICES ARE INDICATED TO REMAIN OR BE RELOCATED, ARE WITHIN THE SCOPE OF THIS PROJECT AND EXISTING CIRCUITING INFORMATION IS UNAVAILABLE, CONTRACTOR SHALL PROVIDE CIRCUIT TRACING TO IDENTIFY PANEL AND CIRCUIT SERVING THE DEVICE. THEY SHALL PROVIDE THAT INFORMATION TO THE ARCHITECT/ENGINEER PRIOR TO ROUTING CONDUITS AND WIRING FOR THESE DEVICES AND EQUIPMENT.
5. WHERE EXISTING DEVICES ARE TO REMAIN, CONTRACTOR SHALL EXTEND EXISTING CIRCUITING WHERE NECESSARY TO MAINTAIN CONTINUITY OF CIRCUIT.
6. COORDINATE WITH THE OWNER FOR DISPOSAL OF ELECTRICAL ITEMS TO BE DEMOLISHED. OWNER SHALL HAVE THE OPTION TO RETAIN REUSABLE ITEMS SUCH AS COVERPLATES, RECEPTACLES, LIGHT FIXTURES, PANELBOARDS, TRANSFORMERS, ETC. NOT BEING USED IN THE FINISHED WORK. COORDINATE WITH THE OWNER PRIOR TO START OF DEMOLITION. PROPERLY AND LEGALLY DISPOSAL OF EQUIPMENT AND MATERIALS BEING REMOVED.
7. COORDINATE EXACT AREAS, WALLS, CEILINGS, ETC. TO BE DEMOLISHED WITH ARCHITECTURAL, STRUCTURAL, PLUMBING AND MECHANICAL DEMOLITION PLANS.
8. WHERE EXISTING DEVICES, LIGHT FIXTURES AND EQUIPMENT ARE INDICATED TO BE DEMOLISHED, REMOVE ASSOCIATED BOXES, CONDUIT AND WIRING BACK TO SOURCE PANEL, OR TO NEAREST JUNCTION BOX TO MAINTAIN CIRCUIT CONTINUITY OF DEVICES AND EQUIPMENT TO REMAIN. WHERE PANELS ARE TO REMAIN, TURN BREAKER TO "OFF" POSITION AND LABEL THE CIRCUIT AS "SHARED" ON THE PANEL DIRECTORY.
9. AREAS OUTSIDE THE SCOPE OF CONSTRUCTION ARE TO REMAIN ENERGIZED. COORDINATE PHASING WITH CONSTRUCTION MANAGER AND OWNER PRIOR TO DEMOLITION OF ANY ITEM WHICH MAY RESULT IN THE INTERRUPTION OF POWER.
10. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR EXTENT OF AREA REQUIRING DEMOLITION AND ADDITIONAL INFORMATION ON ELECTRICAL DEMOLITION WITHIN THAT AREA. DISCONNECT ELECTRICAL SERVICE TO EQUIPMENT BEING REMOVED. DEMOLITION SHALL BE PHASED AS REQUIRED BY DIVISION 1, OR AS DIRECTED BY THE OWNER.
11. REMOVE CONDUIT LEFT EXPOSED BY REMOVAL OF WALLS AND CEILINGS IN REMODELED OR RENOVATED AREA. CAP BOTH ENDS OF REMAINING CONDUIT IN WALL OR FLOOR WHERE CUT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING OPENINGS IN EXISTING CONSTRUCTION AFTER REMOVAL OF EQUIPMENT, LIGHT FIXTURES, AND DEVICES UNLESS OTHERWISE NOTED ON ARCHITECTURAL PLANS. REPAIRS ARE TO BE DONE TO LOGICAL EDGES OF SURFACES AFFECTED AND SHALL MATCH THE IMMEDIATE ADJACENT AREAS IN CONSTRUCTION, MATERIAL, FIELD, FINISH, PAINTING, AND COLOR.
13. FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO COMMENCEMENT OF WORK AND OBTAIN CLARIFICATIONS FROM ARCHITECT / ENGINEER IF NECESSARY.
14. COORDINATE POWER INTERRUPTION WITH CONSTRUCTION MANAGER, OWNER, LANDLORD, AND UTILITY COMPANY (WHERE APPLICABLE) AND DO NOT INTERRUPT POWER WITHOUT WRITTEN PERMISSION. PROVIDE A MINIMUM OF ONE WEEKS WRITTEN NOTIFICATION PRIOR TO WHEN POWER IS DESIRED TO BE INTERRUPTED. CONTRACTOR SHALL INVESTIGATE AND IDENTIFY LOADS TO BE AFFECTED BY THE REQUESTED INTERRUPTION. CONTRACTOR SHALL SUBMIT WRITTEN SEQUENCE OF STEPS FOR EACH SHUTDOWN ALONG WITH THE ESTIMATED INTERRUPTION DURATION. MAKE ARRANGEMENTS TO MAINTAIN POWER TO EXISTING NECESSARY LIGHTING, DEVICES AND EQUIPMENT AS NEEDED AND REQUESTED BY THE OWNER PRIOR TO COMMENCEMENT OF WORK.
15. EXERCISE EXTREME CAUTION WHEN REMOVING / RELOCATING WIRING AND EQUIPMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT OTHER WIRING DEVICES, EQUIPMENT AND LIGHT FIXTURES THAT MAY BE CONNECTED TO THE SAME CIRCUIT REMAIN OPERATIONAL AND ACTIVE.
16. INFORMATION INDICATED IN THE DEMOLITION PORTION OF THE CONTRACT DRAWINGS IS DIAGRAMMATIC IN NATURE. FIELD VERIFY ELECTRICAL CIRCUIT HOMERUNS TO ITEMS SCHEDULED OR NOTED TO BE DEMOLISHED AND PERFORM THE WORK AS INTENDED AND DEPICTED ON THE DRAWINGS OR DIRECTED IN THE FIELD.
17. UPDATE EXISTING ELECTRICAL EQUIPMENT NAMEPLATES AND DIRECTORIES AS NECESSARY TO REFLECT FINAL AS-BUILT CONDITIONS AT THE END OF CONSTRUCTION.
18. STORE ITEMS INDICATED TO BE RETURNED TO THE OWNER IN A DRY, CLEAN AND PROTECTED AREA. NOTIFY OWNER WHEN ITEMS ARE READY TO BE REMOVED.
19. COORDINATE ANY ALTERATION AND CHANGES TO THE EXISTING ELECTRICAL SERVICE WITH THE LOCAL UTILITY COMPANY AND THE OWNER PRIOR TO COMMENCEMENT OF WORK.
20. PROVIDE ANY NECESSARY REPROGRAMMING OF EXISTING BUILDING FIRE ALARM SYSTEMS TO DISABLE FIRE ALARM DEVICES THAT ARE BEING DISCONNECTED AND REMOVED, AND FOR ANY NEW DEVICES THAT ARE ADDED, AS PART OF BID PRICE.
21. CONDUITS SERVING OTHER SPACES THAT RUN THROUGH THE PROJECT AREA SHALL REMAIN ACTIVE DURING CONSTRUCTION SO AS NOT TO CAUSE DISRUPTION TO THESE OTHER SPACES. ENSURE THAT CONDUITS, NEW OR EXISTING WITHIN THE PROJECT AREA ARE PROPERLY SUPPORTED IN ACCORDANCE WITH THE NEC.
22. REMOVE ABANDONED OR UNUSED RACEWAYS INCLUDING CONDUCTORS, JUNCTION BOXES, SUPPORTS, AND FASTENERS THAT ARE WITHIN THE PROJECT AREA PRIOR TO THE END OF CONSTRUCTION.

APPLICABLE CODES

APPLICABLE CODES:

WORK UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE AND IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS INCLUDING THE REGULATIONS OF GOVERNING LOCAL, STATE, COUNTY AND OTHER APPLICABLE CODES. REFER TO SPECIFICATIONS FOR ADDITIONAL CODE REQUIREMENTS.

BUILDING CODES:

- FLORIDA BUILDING CODE, 8TH EDITION (2023)
- FLORIDA ENERGY CONSERVATION CODE, 8TH EDITION (2023)
- FLORIDA FIRE PREVENTION CODE, 8TH EDITION (2023)

ADDITIONAL CODES, STANDARDS, AND REQUIREMENTS

1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
2. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
3. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).
4. REQUIREMENTS OF LOCAL POWER COMPANY.
5. THE AMERICANS WITH DISABILITIES ACT (ADA).
6. OWNER'S PUBLISHED DESIGN STANDARDS.

ALL MATERIALS SHALL BE NEW AND FREE OF DEFECTS, AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LAB, AS DEFINED BY OSHA. WHERE NO LABELING OR LISTING SERVICE IS AVAILABLE FOR CERTAIN TYPES OF EQUIPMENT, TEST DATA SHALL BE SUBMITTED TO VALIDATE THAT EQUIPMENT MEETS OF EXCEEDS AVAILABLE STANDARDS.

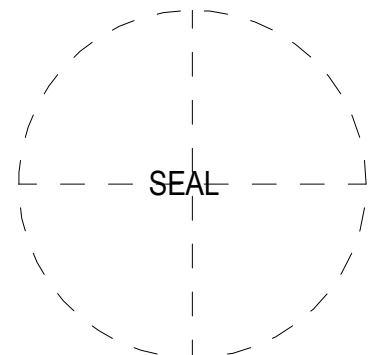
NATIONAL FIRE PROTECTION (NFPA) STANDARDS:

- NFPA 70, 2020 EDITION, NATIONAL ELECTRICAL CODE®.
- NFPA 101, 2021 EDITION, LIFE SAFETY CODE®.
- NFPA 110, 2019 EDITION, STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS.

GENERAL REQUIREMENTS	
1.	THE DRAWINGS AND APPLICABLE SPECIFICATIONS SHALL BE CONSIDERED SUPPLEMENTARY. ONE TO THE OTHER AND ARE CONSIDERED THE "CONTRACT DOCUMENTS". WORKMANSHIP, METHODS AND/OR MATERIALS DESCRIBED OR IMPLIED BY ONE AND NOT DESCRIBED OR IMPLIED BY THE OTHER SHALL BE PROVIDED, FURNISHED OR PERFORMED AS IF IT HAD APPEARED IN BOTH SECTIONS. THE TERM "CONTRACT DOCUMENTS" DESCRIBED HEREIN IS NOT LIMITED SOLELY TO THE ELECTRICAL PORTION OF THE DRAWINGS AND SPECIFICATIONS, BUT ENCOMPASSES THE DRAWINGS AND SPECIFICATIONS OF ALL DIVISIONS AS A WHOLE.
2.	THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW EVERY DETAIL OF CONSTRUCTION, METHODS, MATERIALS AND EQUIPMENT, OR EXACT LOCATIONS, ROUTING, ETC. THEY INDICATE THE RESULT TO BE ACHIEVED BY THE ASSEMBLAGE OF SEVERAL SYSTEMS FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. DO NOT SCALE THE CONTRACT DOCUMENTS. COORDINATE EXACT EQUIPMENT LOCATIONS WITH THE ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION CONTRACT DOCUMENTS, AS WELL AS FIELD CONDITIONS; APPROVED SHOP DRAWINGS AND WORK OF OTHER DIVISIONS/TRADES.
3.	THE TERM "PROVIDE" USED IN THE CONTRACT DOCUMENTS INDICATES TO FURNISH AND INSTALL MATERIALS REQUIRED FOR CORRECT INSTALLATION OF A COMPLETE SYSTEM. UNLESS SPECIFICALLY NOTED OTHERWISE.
4.	UNLESS NOTED AS EXISTING, ELECTRICAL EQUIPMENT AND DEVICES INDICATED ON THE CONTRACT DOCUMENTS SHALL BE NEW, SHALL BE U.L. LISTED, AND SHALL BEAR A U.L. LABEL, WHERE NO U.L. LABEL OR LISTING IS AVAILABLE, THE MATERIAL SHALL BE LISTED WITH AN APPROVED, NATIONALLY RECOGNIZED ELECTRICAL TESTING AGENCY AS DEFINED BY OSHA.
5.	PROVIDE EXPERIENCED, QUALIFIED AND RESPONSIBLE SUPERVISION FOR WORK REQUIRED BY THE CONTRACT DOCUMENTS. ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, TO THE SATISFACTION OF THE ARCHITECT/ENGINEER AND OWNER.
6.	CARRY INSURANCE REQUIRED TO PROTECT AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THIS PROJECT.
7.	GUARANTEE MATERIALS AND WORKMANSHIP ARE FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE ARCHITECT/ENGINEER AND OWNER, UNLESS NOTED OTHERWISE IN DIVISION 1. AT NO ADDITIONAL COSTS, PROVIDE THE CORRECTION OF ANY DEFECTS INCLUDING REPAIR OR REPLACEMENT.
8.	INCLUDE COSTS ASSOCIATED WITH PERMITS, LICENSES, FEES, INSPECTIONS, TESTING AND TEMPORARY POWER IN THE BID PRICE. UNLESS NOTED OTHERWISE.
9.	IF HAZARDOUS MATERIALS ARE ENCOUNTERED, COMPLY WITH APPLICABLE RULES, REGULATIONS AND GUIDELINES CONCERNING REMOVAL, HANDLING, DISPOSAL, AND PROTECTION AGAINST ENVIRONMENTAL EXPOSURE OR POLLUTION. PROVIDE DOCUMENTATION OF SAID COMPLIANCE.
10.	PROVIDE ELECTRONIC SUBMITTALS/PRODUCT DATA & SHOP DRAWINGS FOR EACH MAJOR COMPONENT OF THE ELECTRICAL SYSTEM FOR REVIEW BY THE ARCHITECT/ENGINEER AND OWNER. MAJOR COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO, RACEWAYS, BOXES, WIRE AND CABLE, EQUIPMENT, DEVICES, LIGHT FIXTURES, SWITCHGEAR, PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, FIRE ALARM SYSTEM, ETC. SUBMITTALS ARE TO BE REVIEWED AND APPROVED BY THE CONTRACTOR FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS PRIOR TO SUBMITTING TO THE ARCHITECT/ENGINEER. ALLOW A MINIMUM OF TEN (10) BUSINESS DAYS FOR REVIEW BY ARCHITECT/ENGINEER, UNLESS NOTED OTHERWISE IN DIVISION 1.
11.	THE ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS ARE COORDINATED WITH THE DESIGN BASIS EQUIPMENT SPECIFIED BY DIVISION 26 AND OTHER DIVISIONS. WHERE THE CONTRACTOR ELECTS TO SUBSTITUTE A PRODUCT IN LIEU OF PROVIDING THE DESIGN BASIS, AND SAID SUBSTITUTION IS ACCEPTED BY THE ARCHITECT/ENGINEER AND OWNER, THE CONTRACTOR SHALL MAKE CORRECTIONS TO THE ELECTRICAL SYSTEM NECESSARY IN ORDER TO ENSURE A COMPLETE AND OPERATIONAL INSTALLATION OF THE EQUIPMENT AT NO ADDITIONAL COSTS. WHERE THE CONTRACTOR'S DESIGN SUBSTITUTION RESULTS IN THE NEED FOR THE ENGINEER TO REVISE THE CONTRACT DOCUMENTS, THE ENGINEER RESERVES THE RIGHT TO REQUEST COMPENSATION FROM THE CONTRACTOR FOR SAID SERVICES.
12.	MAINTAIN A CURRENT AND ACCURATE SET OF PROJECT RECORD DOCUMENTS (AS-BUILTS) AT THE SITE THROUGHOUT THE DURATION OF THE PROJECT. RECORD DRAWINGS SHALL BE UPDATED EACH DAY TO REFLECT THE ACTUAL LOCATIONS, SIZES, ROUTING, ETC., OF EACH PORTION OF THE ELECTRICAL SYSTEM AFFECTED BY THIS WORK. A FINAL SET OF RECORD DOCUMENTS SHALL BE ISSUED TO THE ARCHITECT/ENGINEER FOR REVIEW AND THEN SUBMITTED TO THE OWNER WITHIN 30 DAYS AFTER THE DATE OF FINAL ACCEPTANCE. PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING SINGLE LINE DIAGRAM, POWER RISER DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM, SITE PLANS AND ELECTRICAL FLOOR PLANS, DETAILS, PANEL SCHEDULES, ETC.
13.	PROVIDE AN OPERATING AND MAINTENANCE MANUAL TO OWNER PRIOR TO THE FINAL ACCEPTANCE. THE MANUAL SHALL INCLUDE: AS A MINIMUM, (1) SUBMITTAL DATA STATING EQUIPMENT RATINGS AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. (2) PROVIDE TWO OPERATING AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED RECORD MAINTENANCE ACTIONS AND METHOD OF OPERATION FOR EQUIPMENT SHALL BE CLEARLY IDENTIFIED, AND THE NAME, PHONE NUMBER AND ADDRESS OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
14.	INCLUDE IN BID COSTS FOR EXCAVATION, SAW CUTTING, DIRECTIONAL BORING, CORE DRILLING, BACKFILLING, SURFACE RESTORATION, REPAIR OF FINISHES, ETC. THAT IS REQUIRED IN ORDER TO MEET THE PROJECT REQUIREMENTS.
15.	INCLUDE IN BID COSTS ASSOCIATED WITH TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR USE BY TRADES DURING CONSTRUCTION. REMOVE TEMPORARY POWER AT THE COMPLETION OF THE PROJECT. OBTAIN AND PAY FOR REQUIRED PERMITS FOR TEMPORARY POWER. ENGINEER OF RECORD SHALL BE PROVIDED WITH ADDITIONAL COMPENSATION FROM THE CONTRACTOR WHERE SIGNED & SEALED DRAWINGS ARE REQUESTED BY THE CONTRACTOR TO THE ENGINEER OF RECORD IF REQUIRED BY THE AIA FOR THE TEMPORARY POWER.
16.	PRIOR TO TREKCHING IN ANY AREA LOCATE, IDENTIFY, PROTECT AND DOCUMENT UTILITY LINES LOCATED WITHIN THE PROJECT BOUNDARY. FOR LOCATING SITE UTILITIES, CONTACT LOCAL MUNICIPALITIES AND UTILITIES AT LEAST 48 HOURS PRIOR TO DIGGING.
17.	INCLUDE IN BID THE TRANSPORT AND DISPOSAL, OR RECYCLING OF WASTE MATERIALS GENERATED BY THIS PROJECT IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL RULES, REGULATIONS AND GUIDELINES APPLICABLE. COMPLY FULLY WITH APPLICABLE STATUTES REGARDING MERCURY-CONTAINING DEVICES, AND WITH LOCAL, STATE AND FEDERAL APPLICABLE GUIDELINES AT THE TIME OF DISPOSAL. PROVIDE OWNER WITH WRITTEN CERTIFICATION OF ACCEPTED DISPOSAL.
GROUNDING	
1.	FIRE PROTECTION PIPING SHALL NOT BE USED FOR GROUNDING.
2.	FEEDERS AND BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR. METAL RACEWAYS SHALL NOT BE USED AS THE SOLE EQUIPMENT GROUND.
3.	WHERE A PHASE CONDUCTOR IS INCREASED IN SIZE DUE TO VOLTAGE DROP, THE EQUIPMENT GROUND CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONATELY.
4.	PROVIDE A GROUND BUS BAR IN EACH ELECTRICAL ROOM AND TELECOMMUNICATIONS / IDF / MDF ROOM FOR NEW CONSTRUCTION AND NEW ROOMS IN EXISTING CONSTRUCTION, AND IN EXISTING CONSTRUCTION WHERE THERE IS NONE INSTALLED WITHIN AN EXISTING ROOM.
ELECTRICAL EQUIPMENT	
1.	EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED. COMPONENTS OF THE ELECTRICAL SYSTEM LOCATED OUTDOORS OR INDOORS WHERE EXPOSED TO SIGNIFICANT MOISTURE SHALL BE WEATHER-PROOF, NEMA 3R, AS A MINIMUM, UNLESS INDICATED ON THE CONTRACT DRAWINGS OR NOT.
2.	TERMINATION PROVISIONS FOR ELECTRICAL EQUIPMENT (PANELBOARDS, SWITCHBOARD, TRANSFORMERS, DISCONNECT SWITCHES, MOTOR CONTROLLERS, AUTOMATIC TRANSFER SWITCHES, ENCLOSED CIRCUIT BREAKERS, BUSWAYS, ETC.) SHALL BE LISTED AND IDENTIFIED FOR USE WITH MINIMUM 75 DEGREES FAHRENHEIT CONDUCTORS IN ACCORDANCE WITH NEC.
3.	WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC.
4.	THE ELECTRICAL DEDICATED EQUIPMENT SPACE EXTENDING FROM FLOOR TO 8' ABOVE ELECTRICAL EQUIPMENT OR TO THE STRUCTURAL CEILING, WHICHEVER DISTANCE IS LOWER, WITH A WIDTH AND DEPTH OF THE PANELBOARD OR SWITCHBOARD MUST BE CLEAR OF PIPING, DUCTS, ARCHITECTURAL APPURTENANCES AND OTHER EQUIPMENT BELONGING TO THE ELECTRICAL INSTALLATION IN ACCORDANCE WITH NEC. IF SPACE IS AVAILABLE, FOREIGN SYSTEMS MAY PRESENT ABOVE THE DEDICATED EQUIPMENT SPACE. PROVIDED PROTECTION IS INSTALLED TO PREVENT DAMAGE TO ELECTRICAL EQUIPMENT BELOW FROM CONDENSATION, LEAKS, OR BREAKS IN THESE SYSTEMS.
5.	PROVIDE A REINFORCED CONCRETE PAD, SIZED 4" LARGER IN ALL DIRECTIONS THAN THE FOOTPRINT OF THE EQUIPMENT AND FOR FREESTANDING, FLOOR-MOUNTED ELECTRICAL EQUIPMENT. PROVIDE VIBRATION ISOLATORS AND/OR ANCHORS PER MANUFACTURERS INSTRUCTIONS.
6.	PROVIDE HACR RATED CIRCUIT BREAKER FOR HVAC EQUIPMENT.

COORDINATION	
1.	VERIFY AND COORDINATE LOCATIONS FOR ANY MISCELLANEOUS ELECTRICAL EQUIPMENT REQUIRED (ELECTRICAL CONNECTIONS I.E. COPIERS, FAX MACHINES, PRINTERS, KITCHEN APPLIANCES, LAUNDRY APPLIANCES, PROJECTION SCREENS, SHOP TOOLS, MACHINE, ELEVATORS, ETC.) WITH APPROVED SHOP DRAWINGS. OWNER-PROVIDED CUT SHEETS, MANUFACTURER'S INSTRUCTIONS, AND EQUIPMENT NAMEPLATE INFORMATION, PRIOR TO ROUGH IN, AND PROVIDE NECESSARY ELECTRICAL REQUIRED.
2.	VERIFY AND COORDINATE LOCATIONS AND EXACT ELECTRICAL REQUIREMENTS FOR MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT PRIOR TO SUBMITTAL OF SHOP DRAWINGS OF ELECTRICAL EQUIPMENT. PROVIDE NECESSARY RACEWAYS, CONDUCTORS, BOXES, EQUIPMENT, ACCESSORIES, ADDITIONAL DISCONNECT SWITCHES, CIRCUIT BREAKERS, CONTROL TRANSFORMERS, FIRE ALARM SHUTDOWN, ETC. REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH APPROPRIATE TRADES APPROVED SHOP DRAWINGS, MANUFACTURER'S INSTRUCTIONS, AND EQUIPMENT NAMEPLATE INFORMATION, PRIOR TO ROUGH IN, AND PROVIDE NECESSARY ELECTRICAL REQUIRED, UNLESS NOTED OTHERWISE.
3.	THIS PROJECT REQUIRES COORDINATION DRAWINGS BY THE CONTRACTOR. PARTICIPATE IN THE COORDINATION DRAWING PREPARATION PROCESS AND PROVIDE NECESSARY INFORMATION REQUIRED TO COORDINATE TRADE INFORMATION.
4.	WORK ON THE ELECTRICAL SYSTEM REQUIRED BY THE CONTRACT DOCUMENTS SHALL BE COORDINATED WITH THE WORK OF OTHER DIVISIONS/TRADES PRIOR TO COMMENCEMENT OF WORK. AVOID INTERFERENCES WITH THE PROGRESS OF OTHER DIVISIONS/TRADES.
5.	WHERE WALLS ARE OF TILT-UP OR PRE-CAST CONSTRUCTION, PROVIDE COORDINATION FOR EXACT DIMENSIONS AND FINISHES REQUIRED FOR ELECTRICAL COMPONENTS INSTALLED WITHIN SUCH WALLS DURING THE SHOP DRAWING REVIEW PROCESS OF THE WALLS, PRIOR TO CONSTRUCTION OF THE WALLS.
6.	LOCATIONS OF VFDs, DISCONNECTS, MOTOR STARTERS, ETC. FOR HVAC EQUIPMENT ARE DIAGRAMMATIC ON THE PLAN DRAWINGS. EXACT LOCATIONS ARE TO BE COORDINATED WITH CONTRACTOR'S COORDINATION DRAWINGS PRIOR TO ROUGH-IN TO ENSURE NEAR NET CLEARANCES AND APPROPRIATE MOUNTING SURFACES.
7.	REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, CIVIL, LANDSCAPE, INTERIOR DESIGN, TECHNOLOGY, STRUCTURAL, AND VENDOR EQUIPMENT DRAWINGS FOR RELATED INFORMATION AND ADDITIONAL INSTALLATION REQUIREMENTS TO BE PERFORMED AS PART OF THE WORK.
8.	WHERE A DISCREPANCY OR CONFLICT IS FOUND BETWEEN ONE DRAWING AND ANOTHER, OR BETWEEN A DRAWING AND APPLICABLE SPECIFICATIONS, NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY IN WRITTEN FORM. IN GENERAL, THE MOST STRINGENT REQUIREMENT SHALL GOVERN UNLESS THE DISCREPANCY CONFLICTS WITH APPLICABLE CODES OR OWNERS DESIGN STANDARDS, WHEREIN THE CODE OR OWNERS DESIGN STANDARDS SHALL GOVERN.
9.	CAREFULLY EXAMINE THOSE PORTIONS OF THE BUILDING AND/OR SITE AFFECTED BY THIS WORK PRIOR TO SUBMITTING BID PRICE, SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT MAY AFFECT EXECUTION OF THE WORK. SUBMISSION OF A BID PRICE SHALL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT AND/OR MATERIALS REQUIRED DUE TO DIFFICULTIES ENCOUNTERED THAT COULD HAVE BEEN REASONABLY OBSERVED WILL NOT BE RECOGNIZED.
10.	COORDINATE PROJECT SCHEDULING AND PHASING REQUIREMENTS WITH ARCHITECT/ENGINEER AND OWNER PRIOR TO SUBMITTING BID PRICE. THIS PROJECT MAY REQUIRE PHASING SEQUENCES AND POTENTIAL PREMIUM TIME WORK AND ALL COSTS FOR SUCH SHALL BE INCLUDED IN THE BID PRICE. PROVIDE ADEQUATE WORK FORCE AND EQUIPMENT, AND INCLUDE PREMIUM TIME AS MAY BE REQUIRED IN ORDER TO ADHERE TO THE PROJECT SCHEDULE. ADDITIONALLY, ENSURE THAT LONG LEAD ITEMS DO NOT INTERRUPT THE PROJECT'S SCHEDULE OR PHASING.
11.	ANY TEMPORARY INTERRUPTION OF POWER REQUIRED FOR THE SYSTEM TIE-IN OR SWITCH-OVER FOR ANY PORTION OF THE ELECTRICAL SYSTEM SHALL BE PRE-APPROVED IN WRITING BY THE OWNER AND SCHEDULED IN ADVANCE.
12.	COORDINATE EXACT REQUIREMENTS WITH THE LOCAL UTILITY COMPANIES AND PROVIDERS (ELECTRIC, TELEPHONE, CABLE TV, ETC.) AND INCLUDE COSTS FOR PROVIDING TEMPORARY AND PERMANENT SERVICES REQUIRED FOR THIS PROJECT IN THE BID PRICE. BID PRICE SHALL INCLUDE, BUT NOT BE LIMITED TO, EXCAVATING, RACEWAYS, BACKFILL, EQUIPMENT, EQUIPMENT PADS, BACKORDERS, METERS, GROUNDING, UTILIZATION AND IMPACT FEES.
13.	CONDUCT WORK OPERATIONS AND DEBRIS REMOVAL IN A MANNER THAT ENSURES MINIMUM INTERFERENCE WITH NORMAL BUSINESS OPERATIONS, TRAFFIC, PARKING, ETC. ONGOING IN ADJACENT OCCUPIED SPACES OR FACILITIES. PROVIDE ALL THAT IS REQUIRED TO EFFECTIVELY PROTECT SURROUNDING OCCUPANTS' EQUIPMENT, FINISHES, FURNITURE, ETC. FROM DAMAGE. EXERCISE CARE AND DUE DILIGENCE THROUGHOUT THE DURATION OF THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR ANY LOSSES OR ANY DAMAGE RESULTING FROM THE FAILURE TO ADHERE TO THIS REQUIREMENT. RESTORE DAMAGED ELEMENTS TO ORIGINAL CONDITION TO THE SATISFACTION OF THE ARCHITECT/ENGINEER AND OWNER, AT NO ADDITIONAL COSTS. REPORT OF ANY SUCH OCCURRENCE TO THE ARCHITECT/ENGINEER AND OWNER IMMEDIATELY AND AVOID WRITTEN DIRECTION PRIOR TO PROCEEDING WITH REPAIRS.
14.	COORDINATE THE LOCATION OF LIGHT FIXTURES, DEVICES AND BOXES WITH WINDOWS, MIRRORS, MILLWORK, CABINETS, GLASS CURTAIN WALLS, AND GLASS WALLS PRIOR TO INSTALLATION OF CONDUITS OR BOXES. REVIEW CONTRACT DRAWINGS TO ASCERTAIN ANY CONFLICTS PRIOR TO BIDDING. OBTAIN CLARIFICATION FROM THE ARCHITECT/ENGINEER PRIOR TO BID. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR WORK REQUIRED TO RELOCATE OUTLET BOXES OR RACEWAYS FOR COORDINATION WITH OTHER TRADES WORK.
CONDUCTORS	
1.	CONDUCTOR SIZE SHALL BE ASSUMED TO BE #12 AWG MINIMUM OR OTHERWISE SIZED TO MEET NEC OR VOLTAGE DROP REQUIREMENTS.
2.	BRANCH CIRCUITS SHALL BE INCREASED IN SIZE AS REQUIRED TO COMPENSATE FOR VOLTAGE DROP FROM LENGTH OF CIRCUIT DUE TO FIELD ROUTING. FINAL INSTALLATION SHALL NOT EXCEED A MAXIMUM OF 3% VOLTAGE DROP FOR BRANCH CIRCUITS. REFER TO VOLTAGE DROP TABLE BELOW FOR CONDUCTOR SIZES FOR BRANCH CIRCUITS AS FOLLOWS.
	A. 120V, 20A CIRCUITS SHALL BE: i. #12 FROM 0-70 FT ii. #10 FROM 71-115FT iii. #8 FROM 116-160FT
	B. 277V, 20A CIRCUITS SHALL BE: i. #12 FROM 0-140FT ii. #10 FROM 141-220FT iii. #8 FROM 221-350FT
	ANYTHING LONGER THAN THE ABOVE SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS FOR APPROVAL.
3.	CONDUCTORS IN CABINETS MUST BE CAREFULLY FORMED AND HARNESSED SO THAT EACH CONDUCTOR DROPS OFF DIRECTLY OPPOSITE TO TERMINAL.
4.	CONDUCTORS ARE BASED ON AMPACITIES FOR 60 OR 75 DEGREE CELSIUS TEMPERATURE RATINGS UP TO 100A OR UP TO #1 AWG AND 60 OR 75 DEGREE CELSIUS TEMPERATURE RATING ABOVE 100A OR ABOVE #1 AWG PER NEC 110.14(C)(1)(a)(b) AND TABLE 310.15(B)(16).
5.	CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED. THINWITING 2-90 DEGREES CELSIUS, SOLID FOR #10 AWG AND SMALLER, STRANDED FOR 8 AWG AND LARGER.
6.	CONDUCTORS USED IN WET LOCATIONS, INCLUDING BUT NOT LIMITED TO UNDERGROUND CONDUITS/DOUCTBANKS AND EXTERIOR CONDUITS SHALL COMPLY WITH NEC 310.10 AND BE LISTED FOR USE IN WET LOCATIONS.
7.	POWER CIRCUITS HAVE BEEN DESIGNED TO MEET 2% OR LESS VOLTAGE DROP FOR FEEDERS, AND 3% OR LESS VOLTAGE DROP FOR BRANCH CIRCUITS.
8.	BRANCH CIRCUIT NEUTRALS SHALL BE DEDICATED UNLESS OTHERWISE NOTED. CIRCUITS SHARING A COMMON NEUTRAL MUST HAVE COMMON TRIP CIRCUIT BREAKERS TO ALLOW ALL TO BE TURNED OFF SIMULTANEOUSLY, AS PER NEC 210.4(B).
ELECTRICAL DEVICES OUTLET BOXES, JUNCTION BOXES	
1.	COMPONENTS OF THE ELECTRICAL SYSTEM (INCLUDE RACEWAYS, ELECTRICAL EQUIPMENT, OUTLET BOXES, JUNCTION BOXES, ETC.) LOCATED IN A HAZARDOUS (CLASSIFIED) LOCATION SHALL BE APPROVED FOR USE IN SAID LOCATION, AS DEFINED BY THE NEC, WHETHER INDICATED ON THE CONTRACT DOCUMENTS OR NOT.
2.	DEVICES SHALL BE MOUNTED VERTICALLY, UNLESS NOTED OTHERWISE.
3.	WHEN ELECTRICAL BOXES ARE LOCATED IN VERTICAL FIRE-RESISTIVE ASSEMBLIES, THEY SHALL BE INSTALLED WITHOUT AFFECTING THE FIRE CLASSIFICATION. ALL OF THE FOLLOWING CONDITIONS SHALL BE MET: A. ELECTRICAL BOXES SHALL BE METALLIC. B. BOX OPENING SHALL OCCUR ONLY ON ONE SIDE OF FRAMING SPACE. C. BOX OPENING SHALL NOT EXCEED 16 SQUARE INCHES. D. ALL CLEARANCES BETWEEN OUT

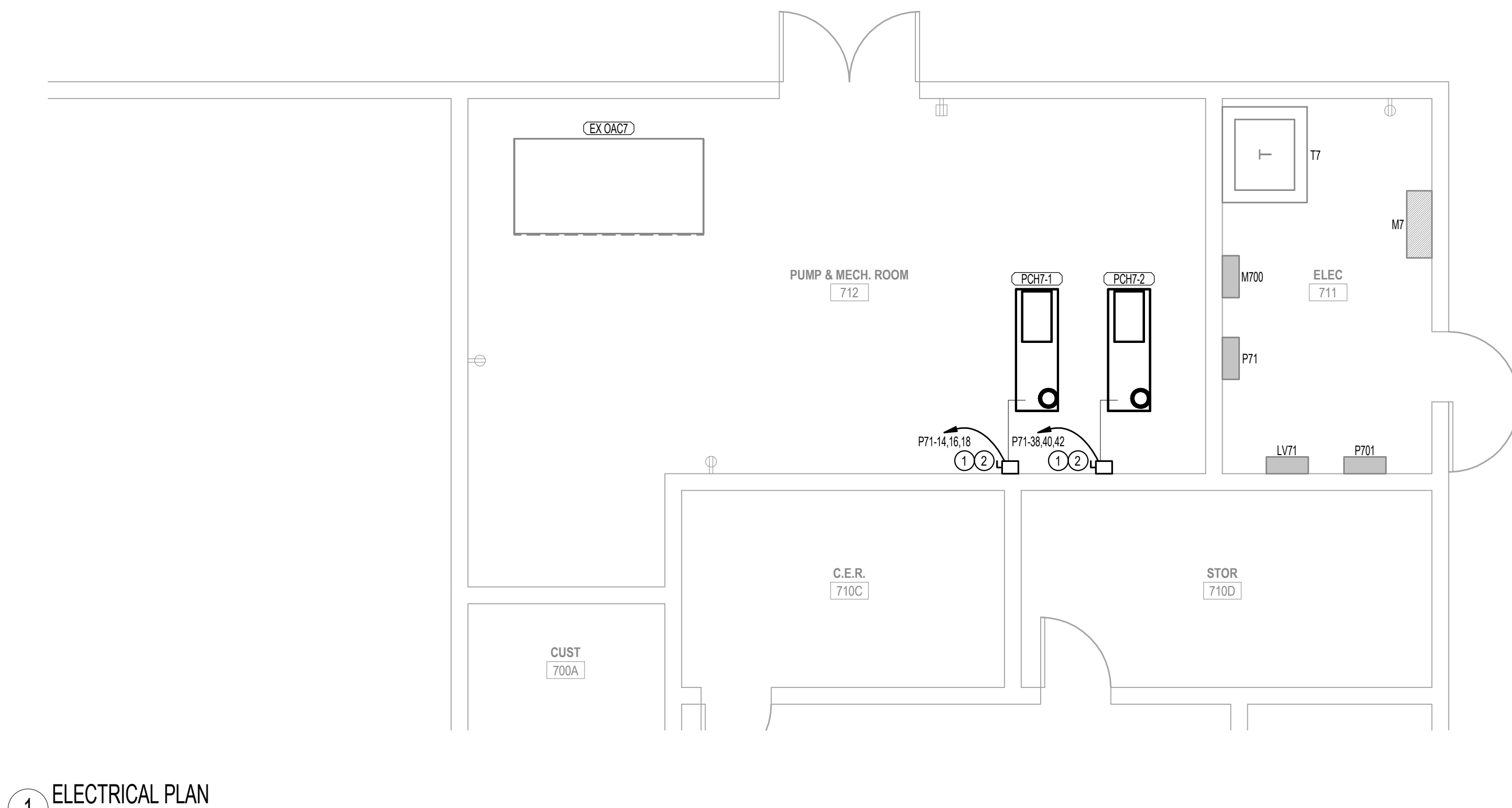
RACEWAYS	
1.	FLEXIBLE METAL CONDUIT AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT (FMC & LFMC) SHALL NOT BE USED IN LENGTHS THAT EXCEED 6'-0" UNLESS SPECIFICALLY NOTED OTHERWISE, OR UNLESS THE ARCHITECT/ENGINEER GRANTS WRITTEN PERMISSION.
2.	FEEDER AND BRANCH CIRCUIT CONDUCTORS, INCLUDING LOW VOLTAGE SYSTEMS, SHALL BE INSTALLED IN A COMPLETE RACEWAY SYSTEM (CONDUIT) UNLESS SPECIFICALLY NOTED OTHERWISE.
3.	THE USE OF ELECTRICAL NON-METALLIC TUBING (ENT) AND LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT (LFNC) ARE PROHIBITED UNLESS SPECIFICALLY NOTED OTHERWISE, OR UNLESS THE ARCHITECT/ENGINEER OR OWNER GRANTS WRITTEN PERMISSION.
4.	CONNECTIONS TO TRANSFORMERS, AHUS, AND PUMPS SHALL BE FLEXIBLE METAL CONDUIT (FMC) FOR INDOOR, DRY LOCATIONS AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC) FOR EXTERIOR OR INDOOR WET LOCATIONS.
5.	PVC CONDUIT SHALL NOT BE USED INSIDE BUILDING UNLESS OTHERWISE NOTED. UNDERGROUND OR IN-SLAB INSTALLATIONS ARE ACCEPTABLE. WHERE AN UNDERGROUND RACEWAY ENTERS A BUILDING OR STRUCTURE, IT SHALL BE SEALED AS PER NEC ARTICLES 230.8 AND 300.5(G). CONDUITS SUB-UPS WITHIN BUILDING SHALL BE MADE WITH GALVANIZED RIGID CONDUIT. NO NON-METALLIC RACEWAY ALLOWED WITHIN BUILDING (ASSEMBLY OCCUPANCY, NEC ARTICLE 518)
6.	CONDUIT TERMINATIONS AT TERMINAL BOARDS SHALL HAVE GROUNDING BUSHINGS AT CONDUIT ENDS.
7.	CONDUITS SHALL BE CONCEALED UNLESS IMPOSSIBLE DUE TO EXISTING CONDITIONS (I.E., EXPOSED CEILINGS, BUILDING EXTERIOR WALL RUNS). CONCEAL CONDUITS ABOVE CEILINGS OR IN WALLS AND MILLWORK WHERE EXISTING CONDITIONS DICTATE THAT CONDUITS CANNOT BE CONCEALED. NOTIFY ARCHITECT/ENGINEER PRIOR TO INSTALLING CONDUIT FOR RESOLUTION TO ROUTING.
8.	SEAL PENETRATIONS AND OPENINGS MADE DURING EXECUTION OF WORK IN FIRE-RATED AND SMOKE-RATED WALLS. WALLS SHALL BE SEALED WITH UL-APPROVED PRODUCT WITH THE SAME OR GREATER RATING OF WALL PENETRATED.
9.	PROVIDE PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE REQUIRED. COORDINATE LOCATIONS AND SIZES WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. FIELD CONDITIONS AND WORK OF OTHER DIVISIONS/TRADES. PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS SHALL BE WATERTIGHT.
10.	RACEWAYS THAT TURN UP THROUGH THE SLAB OR INTO ELECTRICAL EQUIPMENT FROM UNDERGROUND SHALL BE RIGID GALVANIZED STEEL (RGS) WITH BITUMASTIC COATING FOR AT LEAST THE FINAL 18" LENGTH. THE USE OF NON-METALLIC CONDUIT ABOVE GRADE IS PROHIBITED.
11.	PANEL, SCHEDULES AND FLOOR PLANS MAY INDICATE DEDICATED HOMERUNS FOR EACH BRANCH CIRCUIT. BRANCH CIRCUITS MAY BE GROUPED IN A COMMON HOMERUN WHERE THE HOMERUN DOES NOT EXCEED 3-PHASE CONDUCTORS, 3 NEUTRAL CONDUCTORS, AND 1 EQUIPMENT GROUND. THE HOMERUN RACEWAY SIZE AND CONDUCTOR SIZE SHALL BE INCREASED AS NECESSARY TO COMPLY WITH THE NEC FOR 40% MAXIMUM FILL AND DERATING REQUIREMENTS.
12.	PROVIDE SEAL OFF FITTINGS, APPROVED FOR SUCH USE, WHERE RACEWAYS PENETRATE THROUGH A DRY, CONDITIONED ENVIRONMENT AND THE EXTERIOR OR OTHER WET ENVIRONMENTS AND ADDITIONAL AREAS WHERE CONDUITS PASS FROM WARM TO COLD LOCATIONS SUCH AS WALK-IN COOLERS OR FREEZERS, BOILER ROOMS, ETC.
13.	PROVIDE POLYOLEFIN JET-LINE #232 (NYLON PULL COILERS) IN EACH EMPTY CONDUIT WITH ENGRAVED METAL TAG INDICATING CONDUIT DESIGNATION.
14.	HOMERUNS SHALL BE IN 3/4" RACEWAY MINIMUM. 1/2" RACEWAY IS ACCEPTABLE FOR A SINGLE CIRCUIT FROM THE HOMERUN TO REMAINING DEVICES.
15.	WHERE AN UNDERGROUND RACEWAY ENTERS A BUILDING OR STRUCTURE, IT SHALL BE SEALED AS PER NEC ARTICLES 230.8 AND 300.5(G).
16.	CONDUIT SHALL USE SET SCREW TYPE FITTINGS OR COMPRESSION FITTINGS.
17.	WHERE RACEWAYS ARE INSTALLED IN SLABS, THE MINIMUM SPACING, MAXIMUM RACEWAY SIZE, AND ANY OTHER STRUCTURAL LIMITATIONS SHALL BE COORDINATED WITH THE STRUCTURAL DRAWINGS AND THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
IDENTIFICATION	
1.	PROVIDE TYPED PANEL DIRECTORIES FOR ALL NEW PANELBOARDS, AND EXISTING PANELBOARDS AFFECTED BY THIS PROJECT. DIRECTORIES SHALL REFLECT PROJECT AS-BUILT CONDITIONS FOR BRANCH CIRCUITS. DIRECTORIES SHALL INCLUDE WHERE EACH PANEL IS FED FROM. ADDITIONALLY, EACH BRANCH CIRCUIT LOAD DESCRIPTION SHALL INCLUDE THE ROOM NUMBER(S) FOR EACH LOAD (I.E., RECEPTABLE-RMS 501/503). ROOM NUMBERS SHALL BE BASED ON ACTUAL ROOM SIGNAGE INSTALLED IN FIELD. COORDINATE EXACT ROOM NUMBERS WITH ARCHITECT/ENGINEER AND OWNER PRIOR TO COMPLETION OF PANEL DIRECTORIES.
2.	PROVIDE ENGRAVED PLASTIC LAMINATE NAME TAGS ON EACH SWITCHBOARD, SWITCHGEAR, DISTRIBUTION PANEL, PANELBOARD, MOTOR CONTROL CENTER, SAFETY SWITCH, ENCLOSED CIRCUIT BREAKER, CABINET, STEP-DOWN TRANSFORMER, TRANSFER SWITCH, ETC., AND ANY OTHER MAJOR COMPONENT OF THE ELECTRICAL SYSTEM.
3.	PROVIDE ENGRAVED PLASTIC LAMINATE NAME TAGS FOR EACH DISTRIBUTION BREAKER OR BRANCH CIRCUIT BREAKER IN SWITCHGEAR, SWITCHBOARDS, MOTOR CONTROL CENTERS AND OTHER DISTRIBUTION EQUIPMENT. NAME TAG SHALL INCLUDE LOAD DESCRIPTION AND ROOM NUMBER FOR EACH LOAD.
4.	ARC FLASH DANGER WARNING LABELS SHALL BE APPLIED TO SWITCHBOARDS, PANELBOARDS, EQUIPMENT CONTROLLERS AND OTHER DISTRIBUTION EQUIPMENT PER NEC.
5.	PROVIDE NEATLY, HANDWRITTEN IDENTIFICATION ON THE EXTERIOR COVER OF JUNCTION BOXES, PULLBOXES AND WIREWAYS, IDENTIFYING THE PANEL(S) / CIRCUIT NUMBER(S) CONTAINED WITHIN.
6.	PROVIDE A PERMANENT LABEL ON PANELBOARDS, SWITCHBOARDS, SWITCHGEAR, MOTOR CONTROL CENTERS AND DISTRIBUTION PANELS STATING "DO NOT WORK ON EQUIPMENT WHILE ENERGIZED. LOCK-OUT TAG-OUT REQUIRED".
7.	PROVIDE REQUIRED IDENTIFICATION PER ANSI STANDARDS, NEC REQUIREMENTS, AND OWNERS PUBLISHED DESIGN STANDARDS WHERE APPLICABLE.
8.	PROVIDE ENGRAVED PHENOLIC LABEL ON NEW SERVICE EQUIPMENT TO INDICATE THE MAXIMUM AVAILABLE FAULT CURRENT AND THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED. PROVIDE LABEL ON EXISTING SERVICE EQUIPMENT WHEN MODIFICATIONS OCCUR THAT AFFECT THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SERVICE.
ELECTRICAL DRAWING INDEX	
SHEET	DESCRIPTION
E001	ELECTRICAL SYMBOLS, LEGEND, AND ABBREVIATIONS
E002	ELECTRICAL GENERAL NOTES AND INDEX
E101	ELECTRICAL PLAN
E501	ELECTRICAL DETAILS
E601	ELECTRICAL PANEL AND EQUIPMENT SCHEDULES
ED101	ELECTRICAL DEMO PLAN



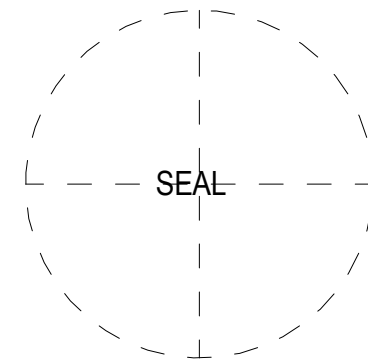
SPIRIT ELEMENTARY
 UPGRADE HVAC BLDG. 7
 MCS Project NO. 2648250
 1500 MEADOWLARK DR
 DELTONA, FL 32725

DRAWING NO.

WHERE THERE IS A DISCREPANCY BETWEEN ABOVE GENERAL NOTES AND SPECIFICATIONS, WHERE APPLICABLE, SPECIFICATIONS SHALL BE FOLLOWED



1. SEE MECHANICAL EQUIPMENT SCHEDULE ON SHEET E601 FOR ALL CONDUCTOR, CONDUIT, AND DISCONNECT SIZES.
2. REPLACEMENT OF PUMPS AND ASSOCIATED ELECTRICAL EQUIPMENT IS BID ALTERNATE 1.

[illegible]

ENGINEER OF RECORD MONCEF M. HADIJI	
DESIGNED BY JOEY HOLT	DRAWN BY JOEY HOLT
ISSUE DATE 12/01/2025	AE PROJECT NUMBER 525260
SHEET TITLE ELECTRICAL PLAN	
DRAWING NO.	
E101	

MECHANICAL EQUIPMENT CONNECTION SCHEDULE															
EQUIPMENT SERVED	FLA	LOAD	VOLTAGE	No. OF POLES	PANEL	CIRCUIT NUMBER	CB RATING	VFD PROVIDED BY MECH	DISCONNECT			WIRE SIZE	CONDUIT SIZE	VOLTAGE DROP %	NOTES
									FRAME RATING	FUSE RATING	NEMA RATING				
CH-1	128 A	106,417 VA	480 V	3	M7	2	175 A		200 AR	NF	3R	3-#20, 1-#6	2"	0.16%	
PCH7-1	17 A	6,016 VA	208 V	3	PT1	14,16,18	25 A	YES	30 AR	NF	1	3-#10, 1-#10	3/4"	0.44%	
PCH7-2	17 A	6,016 VA	208 V	3	PT1	38,40,42	25 A	YES	30 AR	NF	1	3-#10, 1-#10	3/4"	0.37%	

NAME: P71																		
LOCATION: ELEC 711				MOUNTING: SURFACE				DIST. / PHASE / WIRES: 208Y/120V / 3 / 4				K.A.I.C. RATING: 10		FEED THRU: NO				
SUPPLY FROM: M700				ENCLOSURE: NEMA 1				MAX. HEIGHT BUSING: YES				MAINS TYPE: MLO		RATING: 225 A				
KN	CKT	CIRCUIT DESCRIPTION		TRIP(A)	P	A (KVA)		B (KVA)		C (KVA)		P	TRIP(A)	CIRCUIT DESCRIPTION		CKT	KN	
	1					2.281	2.281									2		
	3	EXISTING AHU 7-5		25	3			2.281	2.281				3	25	EXISTING AHU 7-6		4	
	5									2.281	2.281					6		
	7					2.281	2.281									8		
	9	EXISTING AHU 7-7		25	3			2.281	2.281				3	25	EXISTING AHU 7-8		10	
	11									2.281	2.281					12		
	13					2.281	2.005									14		
	15	EXISTING AHU 7-9		25	3			2.281	2.005				3	25	PCHT-1		16	1
	17									2.281	2.005					18		
	19	EXISTING EF 7-1		15	1	0.667	0.603						2	15	EXISTING AC 701		20	
	21	EXISTING CATWALK LIGHTING		20	1			0.960	0.603								22	
	23	SPARE		20	1					0.000	0.081	1	15	EXISTING AHU 701		24		
	25	EXISTING CLASSROOM LIGHTING		20	1	1.050	0.990					1	20	EXISTING CLASSROOM LIGHTING		25		
	27	EXISTING CLASSROOM LIGHTING		20	1			0.930	0.840			1	20	EXISTING CLASSROOM LIGHTING		28		
	29	EXISTING CLASSROOM LIGHTING		20	1					1.260	0.990	1	20	EXISTING CLASSROOM LIGHTING		30		
	31	EXISTING LV 71		20	1	1.500	1.500					1	20	EXISTING WH 701		32		
	33	EXISTING GEN HEATER		20	1			1.500	0.000			1	20	SPARE		34		
	35	EXISTING GEN BATTERY CHARGER		20	1					1.500	0.000	1	20	SPARE		36		
	37	EXISTING GEN RECEPTACLE		20	1	0.360	2.005									38		
	39	SPACE		--	1			--	2.005			3	25	PCHT-2		40	1	
	41	SPACE		--	1					--	2.005					42		
						CONNECTED PHASE LOAD (KVA)		22.086		20.249		19.247						
						CONNECTED PHASE AMPS (A)		185.332		170.024		160.389						
LOAD CLASSIFICATION				CONNECTED LOAD		DEMAND FACTOR		DEMAND LOAD		PANEL TOTALS								
EQUIPMENT				6360 VA		100.00%		6360 VA		TOTAL CONNECTED LOAD (KVA): 61.581 TOTAL DEMAND LOAD (KVA): 63.085 TOTAL DEMAND CURRENT (A): 175								
LIGHTING				7020 VA		100.00%		7020 VA										
MOTORS				12032 VA		112.50%		13536 VA										
HVAC				36169 VA		100.00%		36169 VA										

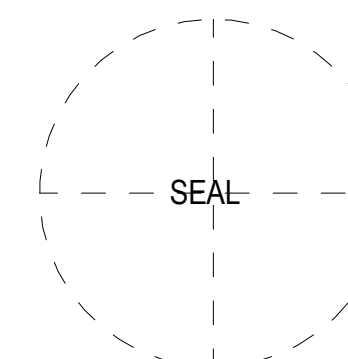
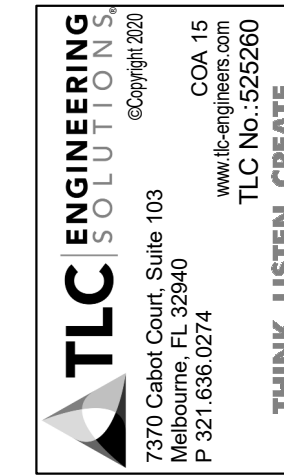


GENERAL NOTES

A. LAYOUT IS BASED UPON NON-INVASIVE FIELD INVESTIGATION AND LIMITED EXISTING AS-BUILTS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THIS LAYOUT AND FIELD CONDITIONS.

KEYNOTES

1. REPLACEMENT OF PUMPS AND ASSOCIATED ELECTRICAL EQUIPMENT IS BID ALTERNATE 1.



REVISIONS

[illegible]

SPIRIT ELEMENTARY
UPGRADE HVAC BLDG. 7
VCS Project NO. 2648250
1500 MEADOWLARK DR
DELTONA, FL 32725

ENGINEER OF RECORD
MONCEF M. HADIJI

DESIGNED BY
JOEY HOLT

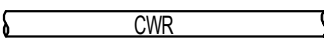
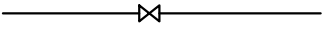
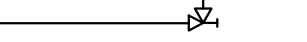
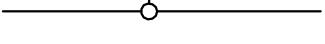
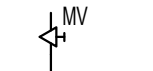
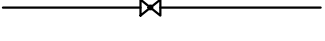
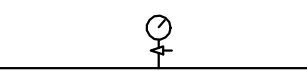
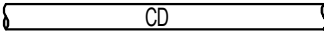
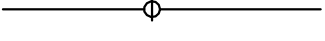
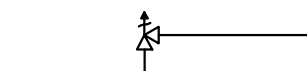
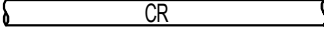
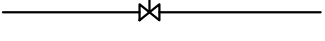
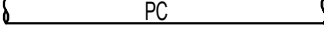
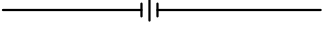
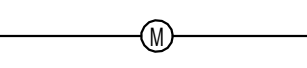
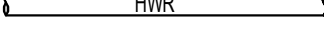
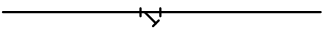
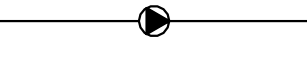
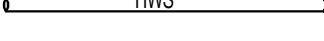
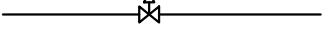
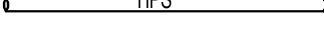
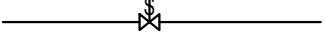
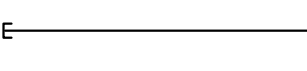
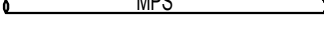
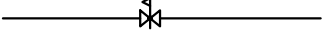
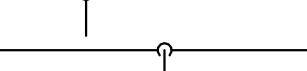
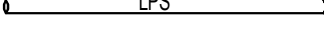
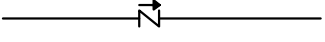
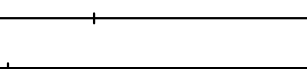
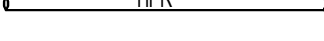
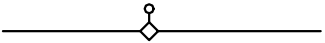
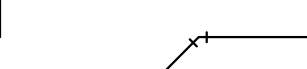
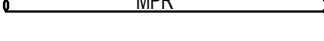
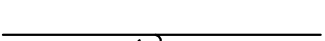
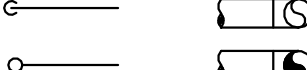
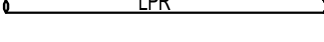
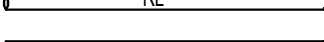
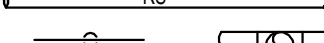
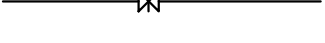
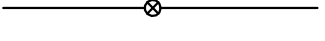
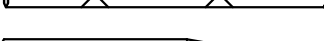
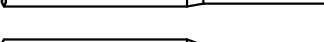
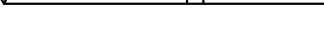
DRAWN BY
JOEY HOLT

ISSUE DATE 12/01/2025	AE PROJECT NUMBER 525260
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SHEET TITLE
ELECTRICAL DEMO PLAN

DRAWING NO.

ED101

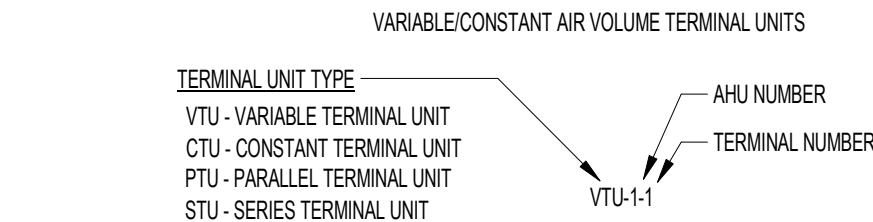
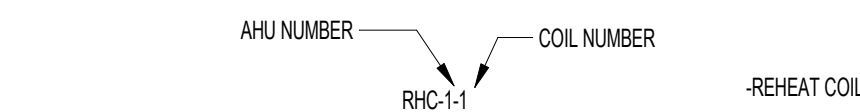
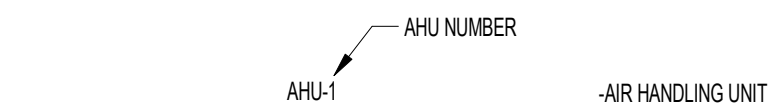
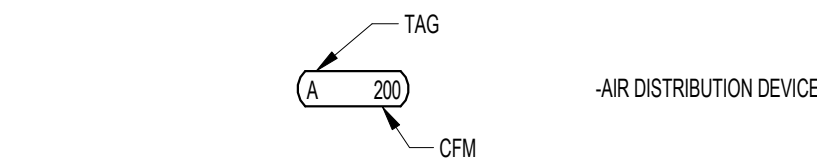
HVAC SYMBOL PIPING LEGEND				HVAC ABBREVIATIONS				HVAC GENERAL NOTES	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	1. CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED. 2. DIMENSIONS SHALL BE FIELD-VERIFIED AND COORDINATED PRIOR TO PROCUREMENT OR FABRICATION. COORDINATE THE WORK WITH OTHER TRADES INVOLVED. FIELD MODIFICATIONS SUCH AS OFFSETS IN PIPING NEEDED DUE TO OBSTRUCTIONS OR INTERFERENCES SHALL BE PROVIDED AT NO ADDITIONAL COST. FOR PROJECTS INVOLVING RENOVATION, COORDINATE NEW WORK WITH EXISTING ELEMENTS SUCH AS THE BUILDING STRUCTURE AND ARCHITECTURAL FEATURES, SPRINKLER PIPING, LIGHTS, PLUMBING, AND ELECTRICAL CONDUIT. 3. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION. 4. REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT. 5. TRAPPED CONDENSATE DRAINS FROM ALL MECHANICAL EQUIPMENT SHALL BE PROVIDED FOR PROPER DRAINAGE TO SUIT EQUIPMENT FURNISHED. 6. ALL PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. 7. PROVIDE CONCRETE HOUSEKEEPING PAD UNDER ALL FLOOR-MOUNTED EQUIPMENT. REFER TO SPECIFICATIONS FOR DETAILED REQUIREMENTS. 8. INTERRUPTIONS TO EXISTING SERVICES SHALL BE SCHEDULED FOR TIMES OTHER THAN NORMAL OPERATING HOURS (SUCH AS NIGHTS AND WEEKENDS). SUCH INTERRUPTIONS TO SERVICES SHALL NOT BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER'S REPRESENTATIVE AND PROPER COORDINATION WITH OTHER TRADES. PRE-WORK SHALL BE PERFORMED TO MAKE THE SHUTDOWN PERIOD AS BRIEF AS POSSIBLE. 9. ALL EQUIPMENT, DUCTWORK, ETC., TO BE REMOVED SHALL REMAIN PROPERTY OF THE OWNER OR DISPOSED OF LEGALLY, AS DIRECTED BY OWNER. 10. MAINTAIN CLEARANCE OF A MINIMUM OF 6" BETWEEN PIPING, EQUIPMENT, ETC., AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS, TO ALLOW FOR INSPECTIONS OF RATED WALLS. 11. WATER PRESSURE DROPS THROUGH COIL CONTROL VALVES SHALL NOT EXCEED 5 PSI. 12. SLEEVE AND SEAL ALL PIPING PENETRATIONS THROUGH BUILDING PARTITIONS. PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN CHILLED WATER AND HOT WATER PIPING. 13. PIPING, DUCTWORK, LEAK PROTECTION APPARATUS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, OR MOTOR CONTROL CENTERS SHALL NOT BE INSTALLED WITHIN THE REQUIRED SPACE FOR WORKING CLEARANCES OR DEDICATED SPACES OF THE ELECTRICAL EQUIPMENT, EXTENDING IN FRONT OF AND FROM FLOOR TO STRUCTURAL CEILING WITH A WIDTH AND DEPTH OF THE ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC-110.26.	
 CWS	-CONDENSER WATER SUPPLY	 -FLOW DIRECTION	 -P-TRAP	AFD	-ADJUSTABLE FREQUENCY DRIVE	LD	-LINEAR DIFFUSER		
 CWR	-CONDENSER WATER RETURN	 -GATE VALVE	 -TWO-WAY CHECK VALVE	AFF	-ABOVE FINISHED FLOOR	MBH	-THOUSAND BTU _h PER HOUR		
 CHWS	-CHILLED WATER SUPPLY	 -BALL VALVE	 -MANUAL VENT	AFR	-ABOVE FINISHED ROOF	MCA	-MINIMUM CIRCUIT AMPS		
 CHWR	-CHILLED WATER RETURN	 -CALIBRATING BALANCING VALVE	 -PRESSURE GAUGE	AHU	-AIR HANDLING UNIT	MOCP	-MAXIMUM OVER CURRENT PROTECTION		
 CD	-CONDENSATE	 -BUTTERFLY VALVE	 -RELIEF VALVE	AP	-ACCESS PANEL	MOD	-MOTOR OPERATED CONTROL DAMPER (MOD)		
 CR	-CONDENSATE RETURN	 -GAS COCK	 -FLOW METER	BOP	-BOTTOM OF PIPE	NC	-NORMALLY CLOSED		
 PC	-PUMPED CONDENSATE	 -UNION	 -WATER METER	BHP	-BRAKE HORSEPOWER	NO	-NORMALLY OPEN		
 HWR	-HOT WATER RETURN	 -STRAINER	 -IN-LINE PUMP	BTU	-BRITISH THERMAL UNIT	NTS	-NOT TO SCALE		
 HWS	-HOT WATER SUPPLY	 -CONTROL VALVE	 -IN-LINE PUMP	CL	-CENTER LINE	OA	-OUTSIDE AIR		
 HPS	-HIGH PRESSURE STEAM SUPPLY	 -SOLENOID VALVE	 -VALVE ON RISER	CFM	-CFM (CUBIC FEET PER MINUTE)	OAL	-OUTSIDE AIR LOUVER		
 MPS	-MEDIUM PRESSURE STEAM SUPPLY	 -PSI REG.	 -CONNECTION, BOTTOM	CT	-COOLING TOWER	PRV	-PRESSURE REDUCING VALVE		
 LPS	-LOW PRESSURE STEAM SUPPLY	 -CHECK VALVE	 -CONNECTION, TOP	CV	-CONSTANT AIR VOLUME	PRS	-PRESSURE REDUCING STATION		
 HPR	-HIGH PRESSURE STEAM RETURN	 -FLOW SWITCH	 -ELBOW, 90°	ΔP	-CHANGE IN PRESSURE	PSI	-POUNDS PER SQUARE INCH		
 MPR	-MEDIUM PRESSURE STEAM RETURN	 -SLOPE DIRECTION (DOWN)	 -ELBOW, 45°	ΔT	-CHANGE IN TEMPERATURE	PSIG	-PSI GAUGE		
 LPR	-LOW PRESSURE STEAM RETURN	 -FLEX CONNECTION	 -ELBOW, TURNED DOWN	CFM	-CUBIC FEET PER MINUTE	PTAC	-PACKAGED TERMINAL AIR CONDITIONER		
 RL	-REFRIGERANT LIQUID	 -O.S.&Y. GATE VALVE	 -ELBOW, TURNED UP	CU	-CONDENSING UNIT	PVC	-POLYVINYL CHLORIDE PIPE		
 RS	-REFRIGERANT SUCTION	 -STEAM TRAP		DDC	-DIRECT DIGITAL CONTROLS	RA	-RETURN AIR		
 -TEE, OUTLET DOWN		 -THREE-WAY CONTROL VALVE		DN	-DOWN	RHC	-REHEAT COIL		
 -TEE, OUTLET UP				EAT	-ENTERING AIR TEMPERATURE	RHP	-ROOFTOP HEAT PUMP		
 -45° PIPE RISE (R) / DROP (D)				ESP	-EXTERNAL STATIC PRESSURE	RPM	-REVOLUTIONS PER MINUTE		
 -PIPE ANCHORS				EWT	-ENTERING WATER TEMPERATURE	RS/L	-REFRIGERANT SUCTION & LIQUID LINES		
 -CONCENTRIC REDUCER				FCU	-FAN COIL UNIT	RTU	-ROOFTOP AIR HANDLING UNIT		
 -ECCENTRIC REDUCER				FD	-FIRE DAMPER	SA	-SUPPLY AIR		
				FF	-FAN FILTERS	SP	-STATIC PRESSURE		
				FLA	-FULL LOAD AMPS	TSP	-TOTAL STATIC PRESSURE		
				FPM	-FEET PER MINUTE	UNO	-UNLESS NOTED OTHERWISE		
				GPM	-GALLONS PER MINUTE	VIPH	-VOLTS/PHASE		
				KW	-KILOWATT	VAV	-VARIABLE AIR VOLUME		
				LAT	-LEAVING AIR TEMPERATURE	VFD	-VARIABLE FREQUENCY DRIVE		
				LWT	-LEAVING WATER TEMPERATURE				

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT

AIR-COOLED CHILLER SCHEDULE																		
MARK	MANUFACTURER	MODEL	WEIGHT (LB.)	PERFORMANCE DATA		EVAPORATOR DATA					CONDENSER DATA					ELECTRICAL DATA		
				NOM. TONS	ACT. TONS	FLUID TYPE	MIN. FLOW (GPM)	DESIGN FLOW (GPM)	EWT (°F)	LWT (°F)	REFRIGERANT TYPE	COMP. TYPE	# OF COMP.	# OF FANS	AMB. TEMP. (°F)	VOLT/ PHASE	MCA	MOCP
CH-1	TRANE	CGAM	5232	60	56	WATER	86.15	86.00	61.06	44.0	R-454B	SCROLL	4	6	95	460/3	128	175

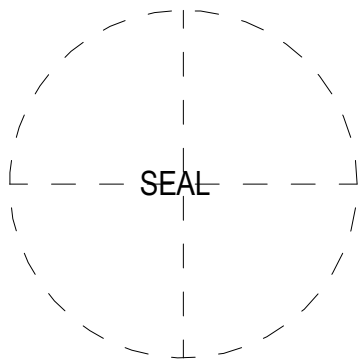
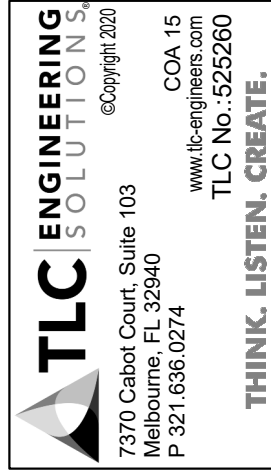
PUMP SCHEDULE														
PLAN MARK	MODEL NO.	FLUID DATA			PUMP DATA				ELECTRICAL DATA				WEIGHT (LBS)	
		FLOW GPM	HEAD (FT.)	FLUID TEMP.	TYPE	IMPELLER SIZE	% EFF	SUCT. SIZE	DISCH. SIZE	VFD (YES/NO)	MOTOR HP	MOTOR RPM		VOLT/PHASE
PCH7-1	ARMSTRONG 4030-1.5X1X6-2P-5	86	54.5	60	END-SUCTION	5.36 IN	53.46	1.5	1.0	YES	5.0	2886	208/3/60	184
PCH7-2	ARMSTRONG 4030-1.5X1X6-2P-5	86	54.5	60	END-SUCTION	5.36 IN	53.46	1.5	1.0	YES	5.0	2886	208/3/60	184

HVAC EQUIPMENT TAGS



MECHANICAL DRAWING INDEX

SHEET	DESCRIPTION
MB01	MECHANICAL SYMBOLS, LEGEND, NOTES, AND INDEX
MT01	MECHANICAL PLAN
MC01	MECHANICAL CONTROLS
MD01	MECHANICAL DEMOLITION PLAN



REVISIONS

DOCUMENT HISTORY

NO. DATE DESCRIPTION

SPIRIT ELEMENTARY
UPGRADE HVAC BLDG. 7
VCS Project NO. 2648250
1500 MEADOWLARK DR
DELTONA, FL 32725

ENGINEER OF RECORD
JIM MULLEN

DESIGNED BY
LUKE ADAMS

DRAWN BY
LUKE ADAMS

ISSUE DATE
12/01/2025

AE PROJECT NUMBER
525260

SHEET TITLE
MECHANICAL SYMBOLS,
LEGEND, NOTES, AND
INDEX

DRAWING NO.

M001



MD101

