



VCS Project NO. 2648251

642 TAYLOR RD, PORT ORANGE, FL 32127

SCHOOL BOARD MEMBERS

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SUPERINTENDENT

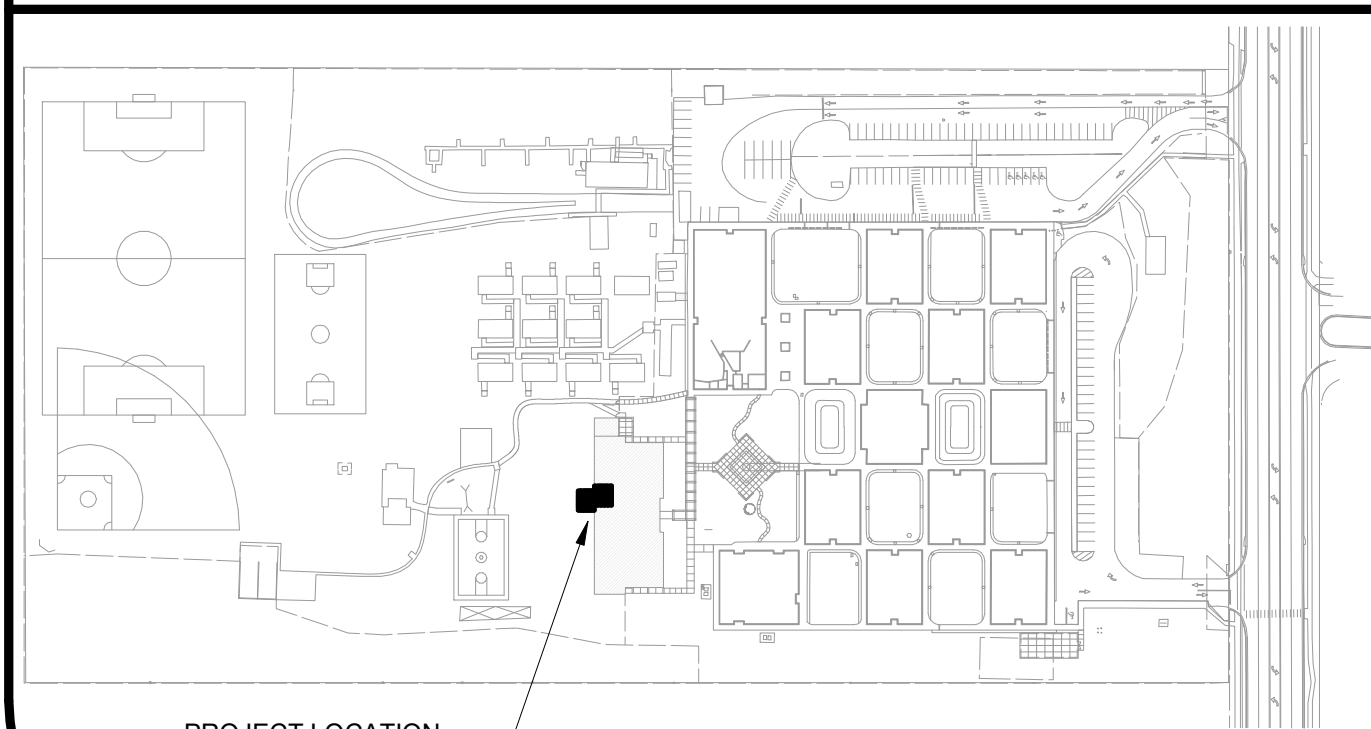
DESCRIPTION OF WORK

REPLACE EXISTING 55 TON AIR-COOLED SCROLL CHILLER SERVING BUILDING 13 IN KIND WITH NEW 60 TON AIR-COOLED CHILLER. UPDATE CONTROL COMPONENTS, SEQUENCES, AND GRAPHICS FOR NEW CHILLER.

Architect's Statement of Compliance

To the best of my knowledge, these drawings and the project manual are complete and comply with the Florida Building Code.

LOCATION MAP



NOT TO SCALE

ENGINEERS & CONSULTANTS

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PROJECT SHEET INDEX

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CONSTRUCTION DOCUMENTS - 11/18/2025

Kimley»Horn

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REGISTRY NO. 35106
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REVISIONS

[illegible]

SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
642 TAYLOR RD, PORT ORANGE, FL 32127

ARCH/ENGR OF RECORD

JEREMY DEMBOSKI
PE 94304

DESIGNED BY
KJP

DRAWN BY
SRM

ISSUE DATE
11/18/2

AE PROJECT NUMBER	145642001
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SHEET TITLE

COVER SHEET

DRAWING NO.

G001

ELECTRICAL SPECIFICATIONS

PART ONE - GENERAL

1. THE WORK: ALL WORK SHALL BE NEW UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE THE WORK SHOWN ON THE DRAWINGS AND SPECIFIED FOR ITS INDIVIDUAL SECTIONS OF WORK. THE WORK IS DEFINED AS: ELECTRICAL, MECHANICAL, TRANSPORTATION, MATERIAL, EQUIPMENT, TOOLS, INSTALLATION, SUPERVISION AND ANY OTHER INCIDENTAL ITEMS OR SERVICES NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE COMPLETE SYSTEMS, WHICH SHALL BE PROVIDED BY THIS CONTRACTOR WHETHER OR NOT SPECIFICALLY INDICATED OR NOTED.
- 1.2. RESPONSIBILITY: THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR THE ACTIONS OF ITS PERSONNEL, SUPPLIERS AND SUB-CONTRACTORS. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE PERFORMANCE OF ALL WORK AS MAY BE REQUIRED TO ACCOMMODATE OR SUPPORT THE ELECTRICAL WORK. EXAMPLES: PAINTING, STRUCTURAL SUPPORTS, CUTTING AND PATCHING, EXCAVATION AND BACKFILL, CONCRETE PADS, ROOF JACKS, ETC. REQUIRING THIS CONTRACTOR'S ENGAGEMENT OF APPROPRIATE TRADES TO PERFORM SUCH WORK FOR THE PROPER INSTALLATION AND OPERATION OF COMPLETE ELECTRICAL SYSTEMS.
- 1.3. MINIMUM REQUIREMENTS: THESE SPECIFICATIONS ESTABLISH THE MINIMUM REQUIREMENTS FOR THE WORK AND MATERIALS. EQUIPMENT AND METHODS TO BE PROVIDED. THE DRAWINGS MAY INDICATE REQUIREMENTS WHICH EXCEED THESE MINIMUMS.
- 1.4. GENERAL CONDITIONS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL GENERAL OR GENERAL REQUIREMENTS OF THE CONSTRUCTION SPECIFICATIONS ARE MADE PART OF THIS SPECIFICATION AND HAVE THE SAME FORCE AND EFFECT AS IF COMPLETELY REPRODUCED.
- 1.5. DEFINITIONS:
AHJ: AUTHORITY HAVING JURISDICTION
ASSEMBLY: AN INSTALLATION OR SYSTEM OF MULTIPLE COMPONENTS REQUIRING MULTIPLE CONNECTIONS. (EXAMPLES: TRASH COMPACTOR, MOTORIZED DOOR, HVAC SPLIT SYSTEM, ETC.)
EQUAL: ACCEPTED BY THE ENGINEER AS EQUAL.
F&E: FURNISHINGS, FIXTURES AND EQUIPMENT - PROVIDED BY OTHERS AT JOBSITE.
RECEIVE, PROTECT, STORE, ASSEMBLE, INSTALL AND CONNECT. PROVIDE MINIMUM 5X STRUCTURAL BOLT AND RIGHT ANGLES. PROVIDE: CHANDLERS, PROJECTORS, ETC.)
PROVIDE: FURNISH, INSTALL, ACTIVATE, AND COMMISSION.
- 1.6. CODES: ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE 2018 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC), AND ALL OTHER ADOPTED APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
- 1.7. PERMITS: PAY ALL FEES AND OBTAIN ALL PERMITS AND INSPECTIONS REQUIRED FOR THE WORK.
- 1.8. DRAWINGS: DRAWINGS ARE DIAGRAMMATIC AND SCHEMATIC IN NATURE, AND INDICATE THE TYPE, SIZE, ARRANGEMENT AND LOCATIONS OF MATERIALS AND EQUIPMENT. WORK INCLUDES CERTAIN, BUT NOT LIMITED TO, THE FOLLOWING: THE CONTRACTOR SHALL PROVIDE THAT MAY NOT BE SHOWN. PROVIDE ALL NECESSARY ITEMS TO COMPLETE THE WORK ACCORDING TO INDUSTRY STANDARDS. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO REQUIRE FINISHED WORK, TESTED AND READY FOR OPERATION. DO NOT SCALE DRAWINGS. ARRANGEMENT OF EQUIPMENT AND ROUTING OF FEEDERS AND BRANCH CIRCUITING SHALL BE IN LUMB AND BRIGHT AWAY FROM THE BUILDING CONSTRUCTION, AND MAY REQUIRE MODIFICATION DUE TO UNFORESEEN CONDITIONS REQUIRING ONSITE REVISIONS DURING CONSTRUCTION. (SEE ALSO "BIDDING").
- 1.9. COORDINATION: THIS PROJECT REQUIRES A HIGH LEVEL OF COORDINATION AND COOPERATION WITH OWNER, ARCHITECT, OTHER TRADES, VENDORS, AND SPECIALTY CONTRACTORS. CAREFULLY EXAMINE ALL CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, SPEC. FOR ALL GENERAL CONSTRUCTION, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND SPECIALTY CONTRACTOR WORK. PRIOR TO ROUGH-IN, COORDINATE THE WORK WITH ALL OTHER TRADES, TAKING RESPONSIBILITY FOR THE PROPER FITTING OF MATERIAL INTO THE BUILDING AS PLANNED WITHOUT INTERFERENCE WITH OTHER WORK. ESTABLISH AND VERIFY LOCATIONS, HEIGHTS, CONNECTION METHODS, AND WITH EQUIPMENT AND OTHER CONTRACTORS. MAKE REASONABLE MODIFICATIONS FOR FF&E ITEMS), AND MAKE REASONABLE MODIFICATIONS IN THE LAYOUTS NEEDED TO PREVENT CONFLICTS WITH OTHER TRADES IN ORDER TO PROVIDE ACCESS FOR THE PROPER EXECUTION OF THE WORK.
- 1.10. IDENTICAL: ALL WORK REQUIRED FOR IDENTICAL ITEMS AND ASSEMBLIES OF THE PROJECT SHALL BE PROVIDED, ALTHOUGH EACH SPECIFIC IDENTICAL ITEM MAY NOT BE SHOWN IN DETAIL.
- 1.11. VERIFICATION: CHECK AND VERIFY ALL SIZES, DIMENSIONS, AND CONDITIONS BEFORE STARTING ANY WORK. ANY DEVIATION(S) OR PROBLEM(S) SHALL BE TRANSMITTED TO THE ENGINEER FOR REVIEW.
- 1.12. CONNECTIONS: CONNECT ALL EQUIPMENT, SYSTEMS, AND ASSEMBLIES PROVIDED BY OTHERS INCLUDING CONTROLS, SAFETY DEVICES AND INTERCONNECTIONS. EXCEPTION: DO NOT INTERCONNECT THE CONTROL SYSTEMS OF THOSE MECHANICAL AND PLUMBING SYSTEMS WHICH ARE SPECIFICALLY NOTED TO BE THE RESPONSIBILITY OF THOSE TRADES. PROVIDE FUSIBLE DISCONNECT SWITCHES AND MOTOR STARTERS FOR ALL EQUIPMENT EXCEPT THOSE ITEMS WHICH ARE SPECIFICALLY LISTED WITH INTEGRAL STARTERS. WHERE STARTERS AND FUSIBLE DISCONNECT SWITCHES ARE FURNISHED TOGETHER WITH EQUIPMENT, RECEIVE, INSTALL, AND CONNECT THOSE ITEMS.
- 1.13. SUBMITTAL: SUBMIT TO THE ENGINEER COMPLETE ELECTRONIC SETS OF SHOP DRAWINGS AND TECHNICAL DATA SHEETS FOR ALL EQUIPMENT AND MATERIALS SPECIFIED HEREIN. THE ENGINEER SHALL REVIEW SHOP DRAWINGS AND TECHNICAL DATA SHEETS FOR PERFORMANCE AND SUBMITTAL OF CONTRACT DOCUMENTS AND ISSUE A WRITTEN ASSESSMENT TO THE OWNER PRIOR TO COMMENCEMENT OF WORK. THE ENGINEER'S FAILURE TO CORRECT ERRORS IN THE SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION TO PERFORM THE WORK AS SHOWN AND/OR SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ENGINEERING FEES NECESSARY TO CHANGE PROJECT DOCUMENTS BASED ON ALTERED SUBMITTALS. THE CONTRACTOR SHALL SUBMIT ALL CHANGES TO THE OWNER PRIOR TO COMMENCEMENT OF WORK. THE ENGINEER'S FAILURE TO CORRECT ERRORS IN THE SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION TO PERFORM THE WORK AS SHOWN AND/OR SPECIFIED. 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BIDDING

- 1.19. **SITE VISIT:** CONTRACT DOCUMENTS INDICATE NEW WORK TO BE PERFORMED AND DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS. COMPARE THE WORK SPECIFIED IN THE CONTRACT DOCUMENTS AGAINST EXISTING CONDITIONS, AND IDENTIFY AND ANNOTATE ALL WORK OR CONDITIONS THAT ARE DIFFERENT FROM THE CONTRACT DOCUMENTS OR THEIR INTENT. UPON DISCOVERY, IMMEDIATELY NOTIFY AND REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER. NO EXTRAS OR CHANGE ORDERS WILL BE ALLOWED FOR FAILURE TO PERFORM THE PRE-BID SITE VISIT.

- 1.20. **BASIS OF PROPOSAL:** PROPOSAL SHALL BE BASED ON MANUFACTURERS AND MODELS AS LISTED UNLESS "OR EQUAL" IS INDICATED. PROVIDE SUBSTITUTION REQUESTS A MINIMUM OF FIVE (5) BUSINESS DAYS PRIOR TO BID DATE CLOSING TO ALLOW TIME FOR DUE CONSIDERATION OF ANY ALTERNATE AND SUBSEQUENT NOTIFICATION TO ALL OTHER BIDDERS IN THE EVENT SUBSTITUTION IS DEEMED ACCEPTABLE. DETERMINATION OF SUBSTITUTION ELIGIBILITY RESTS SOLELY WITH THE ENGINEER.
- 1.21. **VALUE ENGINEERING (V.E.) INITIATIVES:** IN ADDITION TO THE "AS SPECIFIED/OR EQUAL" BASE BID, A COST REDUCTION INITIATIVE(S) MAY BE PROPOSED BASED ON SUBSTITUTIONS OF EQUIPMENT, MATERIALS, METHODS, OR CONSTRUCTION. EACH COST SAVING SHALL INCLUDE A DATA SHEET(S) ON THE SPECIFIED ITEM(S), THE PROPOSED SUBSTITUTE(S), AND THE NET CREDIT TO THE OWNER, INCLUDING ALL CREDITS AND CHARGES FROM ALL MEMBERS OF THE CONSTRUCTION TEAM. THE ENGINEER WILL REVIEW AND RENDER AN OPINION TO THE OWNER. IF THE V.E. INITIATIVE IS DECLINED, PROVIDE THE SPECIFIED EQUIPMENT/MATERIALS/METHODS. IF THE V.E. INITIATIVE IS ACCEPTED AND IF SUCH ACCEPTANCE RESULTS IN A REQUIREMENT TO REVISE ANY DESIGN DOCUMENTS, THE CHARGES FOR THESE REVISIONS SHALL BE BILLED TO THE CONTRACTOR AND THE INVOICING SHALL BE SETTLED BEFORE THE PROJECT IS SIGNED OFF FOR FINAL ACCEPTANCE.
- 1.22. **BIDDING:** THE CIVIL, ARCHITECTURAL, MECHANICAL, KITCHEN, AND/OR INTERIOR DRAWINGS CONTAIN DETAIL INFORMATION AND SPECIFICATIONS. EXCLUSIONS ARE SPECIFICATIONS WHICH ARE PART OF THIS CONTRACTOR'S RESPONSIBILITIES. DO NOT SUBMIT BIDS ON THE PROJECT PRIOR TO REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS, AND ADDENDA.
- 1.23. **SPECIFICATIONS BOOK:** THE SPECIFICATIONS CONTAIN SIGNIFICANT INFORMATION, CONDITIONS, AND PROCEDURES WHICH MAY HAVE A SUBSTANTIAL IMPACT ON THIS CONTRACTOR'S COSTS. DO NOT SUBMIT A BID OR MAKE A PRICE OFFER UNLESS THE SPECIFICATIONS HAVE BEEN THOROUGHLY REVIEWED. THE GENERAL NOTES CONTAINED HEREIN ARE COMPLEMENTARY TO THE SPECIFICATIONS BOOK, AND IN COMPARISSON THE MORE STRINGENT REQUIREMENT(S) SHALL GOVERN.

PART TWO - PRODUCTS

1. **EQUIPMENT STANDARDS:** ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE HIGHEST QUALITY AVAILABLE ("SPECIFICATION GRADE"). EQUIPMENT SHALL BE CONSTRUCTED TO MEET ALL STANDARDS AND SHALL BE BASED ON THEIR INTENDED PURPOSE BY A RECOGNIZED TESTING AGENCY ACCEPTABLE TO THE AHJ (U.L., CSA, ETC. ETC.).
2. **ACCEPTABLE MANUFACTURERS AND SUPPLIERS:** WHERE EQUIPMENT AND MATERIALS ARE NOT SPECIFIED BY NAME THEY ARE DEEMED TO BE GENERIC, SUBJECT TO THE REQUIREMENTS LISTED HEREIN. THESE MANUFACTURERS ARE CONSIDERED CAPABLE OF CARRYING EQUIVALENT PRODUCTS. MINIMUM STANDARD IN ALL INSTANCES IS COMMERCIAL GRADE.
- SWITCHGEAR:** EATON, GENERAL ELECTRIC, SIEMENS, SQUARE D
LIGHT FIXTURES: ACUTY, COOPER, HUBBELL, THOMAS
WIRING DEVICES: HUBBELL, LEVITON, LEGRAND, WIREMOLD
3. **CIRCUITING:** ALL WIRING SHALL BE IN CONDUIT, CABLE OR BUNDLE. IT SHALL BE POSSIBLE EXCEPT FOR BRANCH CIRCUITS TO BE INSTALLED WITH RESIDENTIAL UNIT. EMT WITH ELEC. INSULATED THROAT SET SCREW FITTINGS MAY BE USED IN DRY, PROTECTED INTERIOR LOCATIONS. PVC SCHEDULE 40 SHALL BE USED BELOW GRADE AT MINIMUM -24". WRAPPED RIGID ELBOWS AND RISERS SHALL BE USED FOR ALL THROUGH-GRADE TRANSITIONS AND STUB-UPS. RGS OR IMC CONDUIT WITH THREADED FITTINGS SHALL BE USED IN ALL LOCATIONS WHERE EXPOSED TO THE ELEMENTS OF WEATHER (WIND, RAIN, DAMAGE, ETC.). FUSED CIRCUIT BREAKER GRADES SHALL BE HALF-LAP WRAPPED WITH 20 MIL PVC TAPE. TYPE ENT RACEWAY IS NOT ALLOWED. CONNECT RECESSED AND SUSPENDED LIGHTING FIXTURES, MOTORIZED AND/OR VIBRATING EQUIPMENT WITH STEEL FLEX OR SEALTITE CONDUIT. ALL CONDUIT SHALL HAVE PULL CORO IF OTHERWISE EMPTY.
4. **MC CABLE:** MC CABLE MAY BE USED ONLY WITH SPECIFIC PERMISSION FROM THE ENGINEER. MC CABLE SHALL BE LIMITED TO CIRCUITING SOLUTIONS IN TIGHT CONDITIONS WHERE CONDUIT AND WIRE CIRCUITING CANNOT FIT. HOMERUNS AND FEEDERS SHALL BE CONDUIT AND WIRE.
5. **WIRING:** ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. ALL WIRE SHALL BE STRANDS AND SIZE #8 AWG AND LARGER. SINGLE PHASE BRANCH CIRCUITS SHALL INCLUDE A SEPARATE NEUTRAL WIRE W/IN THE WIRE BUNDLE. NEUTRAL SHALL BE WHITE WITH COLOR STRIPE MATCHING COLOR OF PHASE WIRE. HOMERUNS TO PANELBOARDS SHALL BE MINIMUM #12 AWG CU IN 3/4" CONDUIT UNLESS OTHERWISE NOTED.
6. **FUSES AND CIRCUIT BREAKERS:** FUSES AND CIRCUIT BREAKERS SHALL BE SIZED PER ACTUAL RESPECTIVE APPLICATION (I.E., MOTOR CIRCUIT PROTECTOR, GROUND FAULT CIRCUIT INTERRUPTER, TRANSFORMER, ETC.). FUSES SHALL BE DUAL ELEMENT, CURRENT-LIMITING, AND SHALL BE INTERCHANGEABLE BETWEEN FRAME SIZES WITH STANDARD FACTORY FUSE REDUCERS. PROVIDE LOOKABLE SPARE FUSE CABINET WITH (3) SPARE FUSES OF EACH SIZE USED.
7. **DISTRIBUTION SWITCHGEAR:** SWITCHGEAR SHALL HAVE COPPER BUS AND HEAVY GAUGE TERMINALS. SWITCHES OTHER THAN LOCKED ELECTRIC ROOMS SHALL HAVE LOCKABLE COVERS. SWITCHGEAR SHALL HAVE NO LESS THAN 20% SPACE BUSSED AND USABLE SPACE, MEASURED AS A PERCENTAGE OF THE SPACE OCCUPIED BY SPECIFIED CIRCUIT BREAKERS, SWITCHES, ETC.
8. **SERVICE SWITCHGEAR:** IN ADDITION TO THE ABOVE, SERVICE SWITCHGEAR SHALL MEET THE FOLLOWING REQUIREMENTS FOR SERVING UTILITY:
- PANELBOARDS:** PANELBOARDS SHALL HAVE COPPER BUS AND HARDWARE, BOLT-ON CIRCUIT BREAKERS, FLUSH MONO-FLAT TRIM, PIANO HINGED DOORS AND COVER (DOOR-IN-DOOR) WITH LOCKABLE MASTER-KEYED FLUSH LATCHES. FLUSH-MOUNTED PANELS SHALL HAVE EMPTY CONDUITS STUBBED TO ACCESSIBLE ATTIC SPACE: (1) 3/4" CONDUIT FOR EACH THREE (3) SPARE SPACE CIRCUITS.
9. **SAFETY SWITCHES:** SWITCHES SHALL BE GENERAL DUTY UP TO 250 VOLTS, HEAVY DUTY ABOVE 250 VOLTS. FUSIBLE SWITCHES SHALL BE FUSED PER THE NAMEPLATE REQUIREMENTS OF THE EQUIPMENT BEING CONNECTED.
10. **MOTOR STARTERS:** STARTERS SHALL BE MINIMUM NEMA SIZE 1 WITH INTEGRAL CONTROL TRANSFORMER, RED NEON "RUN" PILOT LIGHT AND "ON-OFF-AUTO" SELECTOR SWITCH ON COVER. OVERCURRENT PROTECTION SHALL BE SIZED PER THE NAMEPLATE AMPERAGE OF THE EQUIPMENT BEING CONTROLLED.
11. **CONTACTORS:** CONTACTORS SHALL BE ELECTRICALLY HELD WITH "ON-OFF-AUTO" SELECTOR SWITCH ON COVER.
12. **RATINGS:** ALL ELECTRICAL EQUIPMENT SHALL BE FULLY RATED FOR BRACING IN EXCESS OF THE MAXIMUM PERMISSIBLE FAULT CURRENT WITHIN THE EQUIPMENT. ALL EQUIPMENT CONNECTION POINTS WITHIN THE DISTRIBUTION SYSTEMS. MINIMUM RATING SHALL BE 10K AIC.
13. **WIRING DEVICES:** WIRING DEVICES (SWITCHES, RECEPTACLES, ETC.) SHALL BE SPECIFICATION GRADE "DECORA" STYLE, MINIMUM 20 AMP RATED. COVER PLATES SHALL BE NYLON. DEVICE AND PLATE COLOR(S) SHALL BE AS SPECIFIED BY ARCHITECT OR INTERIOR DESIGNER - PRIOR TO COMMENCEMENT OF WORK. WIRING DEVICES EXPOSED TO THE ELEMENTS SHALL BE PROVIDED WITH LOCKABLE COVERS. RAISED STEEL BOX COVERS MAY BE USED IN UTILITY AREAS. REFER TO FOOD SERVICE NOTES (IF APPLICABLE TO THIS PROJECT) FOR ADDITIONAL REQUIREMENTS.
14. **TRANSFORMERS:** TRANSFORMERS SHALL BE TYPE TP-1 MINIMUM, WITH ALUMINUM WINDINGS, RATED FOR 150% RISE (UNLESS OTHERWISE NOTED), MOUNTED ON RUBBER-IN-SHEAR VIBRATION ISOLATION WITH FLEXIBLE CONDUIT. PUBLISHED AND MEASURED NOISE RATING SHALL NOT EXCEED NEMA TP-20 MAXIMUM.
15. **LIGHTING FIXTURES:** LIGHT FIXTURES SHALL BE PROVIDED WITH ALL ASSOCIATED HARDWARE (HANGER BARS, PENDANTS, STEMS, RESTRAINTS, CHAINS, CORDS, LAMPS, ETC.). LENSES SHALL BE ACRYLIC, REFLECTORS SHALL BE ANODIZED. FLUORESCENT BALLASTS SHALL BE ELECTRONIC. DRUG STORE FLUORESCENT BALLAST, THE LESS THAN 10%. FLUORESCENT LAMPS SHALL HAVE MINIMUM CRI OF 80%. INCANDESCENT LAMPS SHALL HAVE 120 VOLT, INDOOR FROST MINIMUM 2000 HOUR LIFE. LOW VOLTAGE INCANDESCENT LAMPS SHALL BE IR HOLLOW, MINIMUM 3000 HOUR LIFE. EXTERIOR LIGHTING FIXTURES SHALL BE INSTALLED TO PREVENT WATER, DUST AND INSECT INTERIOR. WITH GASKETING FOR DOOR/BACKPLATE AND SEALANT AT THE WIRING ENTRY POINT. REFER TO LIGHTING FIXTURE SCHEDULE WITHIN PLAN SET FOR ADDITIONAL REQUIREMENTS (LED, CRITERIA, ETC.).
16. **TAMPERPROOF:** ALL EQUIPMENT AND CIRCUITING ACCESSIBLE BY THE PUBLIC SHALL BE DEMONSTRATED TO BE TAMPERPROOF AND VANDAL RESISTANT. OPENABLE DEVICES AND EQUIPMENT SHALL BE PAD LOCKABLE.

PART THREE - EXECUTION

- 3.1. GROUNDING: GROUND ALL EQUIPMENT AND SYSTEM NEUTRAL IN ACCORDANCE WITH THE REQUIREMENTS OF NEC ARTICLE 250. PROVIDE CODE-SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUIT RACEWAYS. WHERE ISOLATED GROUNDS ARE INDICATED, PROVIDE INSULATED CONDUCTOR (GREEN WITH YELLOW STRIPE).

- 3.2. **UTILITY SERVICES:** PROVIDE POWER AND COMMUNICATIONS SYSTEM SERVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SERVING UTILITIES. CONTRACTOR TO PROVIDE ARC FLASH STUDY LABELLING ON ALL NEW EQUIPMENT IN ACCORDANCE WITH NEC. PROVIDE EXCAVATION, RACEWAYS, STRUCTURES, GROUNDS, ETC. AS DIRECTED. POWER SERVICES AND DISTRIBUTION SYSTEM AC RATING SHALL EXCEED MAXIMUM AVAILABLE FAULT CURRENT THROUGH UTILITY SERVICE TRANSFORMER. CONTACT SERVING UTILITIES AND OBTAIN THEIR REQUIREMENTS PRIOR TO BID. (UTILITY SERVICE AND LINE EXTENSION CHARGES ARE THE OWNER'S RESPONSIBILITY.)
- 3.3. **TEMPORARY CONSTRUCTION POWER:** PROVIDE TEMPORARY ELECTRICAL POWER DISTRIBUTION AND LIGHTING AS REQUIRED FOR ALL TRADES THAT REQUIRE SERVICE DURING THE COURSE OF THIS PROJECT IN COMPLIANCE WITH ALL NEC AND OSHA REQUIREMENTS. OWNER SHALL NOT BE RESPONSIBLE FOR TEMPORARY POWER CHARGES.
- 3.4. **LOCATIONS:** INDICATE LOCATION OF ALL OUTLETS AND EQUIPMENT ARE SUBJECT TO CHANGE. SHIFT/RELOCATE/RECONFIGURE ANY OUTLET, EQUIPMENT OR CONNECTION POINT UP TO 10' AS DIRECTED BY ENGINEER AT NO ADDED COST.
- WORKMANSHIP:** THE WORK SHALL BE INSTALLED PARALLEL AND AT RIGHT ANGLES TO THE BUILDING LINES, LEVEL AND PLUMB. THE WORK SHALL BE WELL SUPPORTED AND SOLIDLY MOUNTED. DRESS THE WIRING IN BULKHEADS, GROUND SPLITCHES, ETC. THE WORK SHALL BE LEFT CLEAN WITH NO DIRT, DENTS, ABRASIONS, PAINT SPLATTERS, OR OTHER IRREGULARITIES.
- 3.5. **FIRE STOPPING:** ALL PENETRATED FIRE RATED SURFACES SHALL BE FIRE SEALED WITH APPROVED U.L. LISTED SEALANTS AS LISTED WITHIN ARCHITECTURAL SPECIFICATIONS. DO NOT EXCEED MAXIMUM PENETRATION RATING. PENETRATIONS DEPENDENT ON RATING OF SURFACES. REFER TO ARCHITECTURAL DRAWINGS FOR DETERMINATION OF PENETRATION LOCATIONS THROUGH FIRE RATED ASSEMBLIES.
- 3.6. **SUPPORTS AND HANGERS:** PROVIDE 3" HIGH HOUSEKEEPING CONCRETE PAD BENEATH FLOOR MOUNTED EQUIPMENT, EXTENDING 3' BEYOND EQUIPMENT FOOTPRINT. SUPPORT SHALL ALIGN ALL RACEWAYS, BOXES, BACKBOXES, AND EQUIPMENT. PROVIDE SUPPORT FROM STRUCTURE. SECURE ALL SUPPORTING METHODS BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY. EXPANSION BOLTS IN SOLID MASONRY. CONCRETE PRESET INSERTS OR EXPANSION BOLTS IN CONCRETE. MACHINE SCREWS OR BOLTS IN METAL, AND WOOD SCREWS IN WOOD CONSTRUCTION. ALL SUPPORTING SYSTEMS AND COMPONENTS SHALL BE RATED FOR A MINIMUM OF 100 LBS. PER SQUARE FOOT.
- 3.7. **SLEEVES AND PENETRATIONS:** PENETRATIONS OF ALL SURFACES SHALL BE PROVIDED WITH SLEEVES THAT SHALL BE SEALED WITH LIKE MATERIALS AND SHALL BE FINISHED WITH ESCUTCHEON PLATES. PENETRATIONS BELOW GRADE LEVEL SHALL BE WATERTIGHT. PENETRATIONS AT EXTERIOR WALLS SHALL BE WEATHERPROOF. ROOF PENETRATIONS SHALL BE FLASHED AND GUTTER FLASHED.
- 3.8. **EXPANSION AND CONTRACTION:** RACEWAYS PASSING THROUGH BUILDING EXPANSION JOINTS, ON ROOF, AND IN AREAS OF TEMPERATURE VARIATIONS GREATER THAN 30°F SHALL BE INSTALLED WITH EXPANSION FITTINGS.
- 3.10. **IDENTIFICATION:** IDENTIFY ALL EQUIPMENT, SWITCHBOARD CIRCUITS AND ELECTRICALLY-CONNECTED EQUIPMENT. ENGRAVED NAMEPLATES. BOXES SHALL BE MARKED WITH PANEL AND CIRCUIT NUMBERS (PERMANENT PEN ACCEPTABLE ABOVE CEILING). NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED. CONDUCTORS SHALL BE TAGGED WITH CIRCUIT NUMBERS AT SOURCE, JUNCTION BOXES, AND ALL OUTLET BOXES WITH PERMANENT ADHESIVE MARKER STRIP. PANEL DIRECTORIES SHALL BE IDENTIFY WIRING DEVICES WITH SELF ADHESIVE CLEAR SATIN FINISH LABELS WITH SOURCE AND CIRCUIT NUMBER.
- 3.11. **ELECTRIC ROOM CODE COMPLIANCE:** DUE TO THE DIAGRAMMATIC NATURE OF THE DESIGN DOCUMENTS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE SPRINKLER, ETC.), COORDINATE WITH ALL OTHER ELECTRICAL CONTRACTORS AT THE START OF THIS PROJECT TO INFORM AND VERIFY THAT NO FOREIGN TAGS OR EQUIPMENT ARE MOUNTED ABOVE ELECTRICAL EQUIPMENT OR PASS THROUGH THE DESIGNATED ELECTRIC ROOMS, AND THAT A MINIMUM OF 7'-0" IS PROVIDED AS CLEAR HEADROOM ALONG ACCESS PATHS TO ELECTRIC ROOMS. ANY REROUTING OR RELOCATION OF SYSTEMS THAT A SUBCONTRACTOR FEELS WILL COMPROMISE THE DESIGN INTENT SHALL BE DESCRIBED IN DRAWINGS AND FORWARDED TO THE DESIGN ENGINEER FOR FURTHER REVIEW. ALL PIPING TO HVAC UNIT THAT COOL ELECTRIC ROOMS SHALL BE LOCATED ABOVE ENTRY DOOR. THE SPRINKLER PIPING TO PROVIDE PROTECTION FOR THE ELECTRIC ROOM IS PREFERRED TO ENTER THE ROOM ABOVE THE ENTRY DOOR AND RUN DOWN THE AISLE SPACES OF THE ROOM. ALL INSTALLATIONS SHALL BE FULLY IDENTIFIED AND TAGGED WITHIN 10' OF THE ENTRY DOOR.
- 3.12. **ELECTRICALLY-OPERATED EQUIPMENT - VERIFICATION AND SUBSTITUTION:** FEEDERS AND OVER-CURRENT DEVICES (INCLUDING STARTERS, DISCONNECTS, ETC.) HAVE BEEN DESIGNED BASED ON INFORMATION PROVIDED BY THE RESPONSIBLE CONSULTANT AND/OR DESIGNATED SUPPLIER. PRIOR TO ROUGH-IN, COORDINATE WITH THE APPROPRIATE TRADE AND/OR INSTALLER TO DETERMINE IF THE EQUIPMENT OR THE ELECTRICAL DRAWINGS PROVIDE A MATCH THIS DESIGN. ALL ADDITIONAL ELECTRICAL COSTS RELATED TO THE CONNECTION OF EQUIPMENT WHICH VARIES FROM THE ORIGINAL SPECIFICATIONS SHALL BE RESOLVED WITHIN THE CONSTRUCTION TEAM AT NO ADDITIONAL COST TO THE OWNER.
- 3.13. **ADDITIONAL SYSTEMS AND EQUIPMENT CONNECTIONS:** IN ADDITION TO EQUIPMENT POWER FEEDERS AND CONNECTIONS TO EXISTING POWER, COMMUNICATIONS, OR FIRE ALARM SYSTEMS, CONTROL POWER CONNECTIONS TO SMOKE/FIRE DAMPERS, VAV BOXES, TEMPERATURE CONTROL, FIRE ALARM PANELS, DOOR HOLDING/LATCHING DEVICES, ETC. AS INDICATED IN THE PROJECT DRAWINGS AND SPECIFICATIONS AS WELL AS ALL DESIGN-BUILD SYSTEM DRAWING.
- | ITEM | POWER SOURCE | MAX NO. PER 20A CIRCUIT | PROVIDE SMOKE DETECTORS |
|-------------------------------|--------------------|-------------------------|-------------------------|
| FIRE/SMOKE DAMPER | EMERGENCY | 10 | YES |
| VAV TERMINAL (NO FAN) | NORMAL (VERIFY) | 10 | NO |
| TEMPERATURE CONTROL PANEL | EMERGENCY (VERIFY) | 1 | NO |
| FIRE ALARM PANEL | EMERGENCY | 10 | NO |
| DOOR HOLDING/LATCHING DEVICES | EMERGENCY | 10 | NO |
- 3.14. **HOURS OF OPERATION:** CONDUCT WORK TO MINIMIZE DISRUPTION OF OWNER'S ONGOING BUSINESS OPERATIONS. PROVIDE BARRICADES, NOISE ABATEMENT, AND DUST CONTAINMENT MEASURES TO ENSURE THE SAFETY AND COMFORT OF PATRONS, STAFF, AND WORKERS. INTERRUPTIONS OF EXISTING POWER, COMMUNICATIONS, OR FIRE ALARM SYSTEMS SHALL BE PERFORMED ONLY AT SUCH TIMES AS DIRECTED BY OWNER OR RESIDENT ENGINEER. OUTAGES SHALL BE MOMENTARY IN NATURE. EACH SUCH OUTAGE (OR OPERATION WHICH MAY POSE RISK OF AN ACCIDENTAL OUTAGE) SHALL BE SCHEDULED A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE.
- 3.15. **COMMUNICATIONS:** PROVIDE A COMMUNICATIONS CONTRACTOR SHALL PROVIDE OUTLETS AND RACEWAYS FOR COMMUNICATION SYSTEMS AS INDICATED HEREIN, INCLUDING TELEPHONE, DATA, POINT-OF-SALE, SOUND, SECURITY, AUDIO/VISUAL, CCTV, MATV, ETC. CABLEING AND DEVICES SHALL BE INSTALLED AND TERMINATED BY OTHERS.

PART FOUR - SPECIAL SYSTEMS

- 4.1. **THIRD PARTY TESTING:** PROVIDE ALL ASSOCIATED COSTS FOR THIRD PARTY TESTING OF ALL EQUIPMENT, CONDUCTORS, GROUND FAULT, GROUND FAULT COORDINATION STUDY WITH REPORT PREPARATION, ETC. AS REQUIRED BY THE NEC, AHJ, AND ALL OTHER GOVERNING AUTHORITIES.



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REGISTRY NO. 35106

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SPRUCE CREEK ELEMENTARY

PRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER

RUCE CREEK ELEMENTA
EPLACE 60 TON CHILLEF
VCS Project NO. 2648251

SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
642 TAYLOR RD, PORT ORANGE, FL 32127

ARCH/ENGR OF RECORD

JIMMY NGUYEN
PE 91973

DESIGNED BY
JN

DESIGNED BY	DRAWN BY
JN	SRM

ISSUE DATE

ISSUE DATE	AE PROJECT NUMBER
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SHEET TITLE

ELECTRICAL SPECIFICATIONS

DRAWING NO.

E001



E100



- Kimley»Horn**
- 200 S. ORANGE AVENUE
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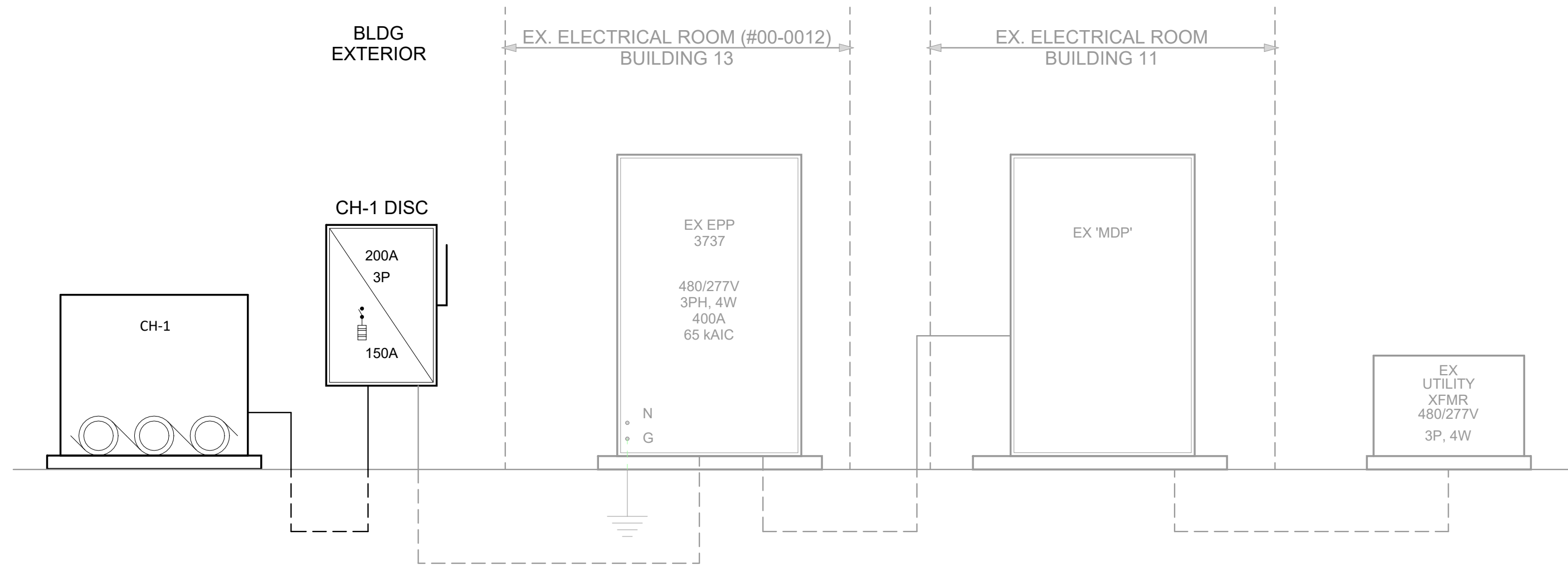
SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
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ARCHENGR OF RECORD	
JIMMY NGUYEN PE 91973	
DESIGNED BY JN	DRAWN BY SRM
ISSUE DATE 11/18/2025	A/E PROJECT NUMBER 145642001
SHEET TITLE POWER PLAN	
DRAWING NO. E101	

ELECTRICAL - MECHANICAL EQUIPMENT SCHEDULE								
MARK	DESCRIPTION	VOLTAGE	PHASE	MCA	HP	DISCONNECTING MEANS	WIRE SIZE	NOTES
CH-1	AIR COOLED CHILLER	460	3	127.5	40	200AF/150AT/HD/3R	3#1 CU, #6G, 1-1/4" C	1

NOTES:

1. ELEC CONTRACTOR SHALL CONFIRM SCCR RATING IS SUFFICIENT TO WITHSTAND AVAILABLE FAULT CURRENT. IF NOT, CONSULT WITH ENGINEER PRIOR TO CONSTRUCTION.



Load Summary 480V-3Ø

Removed Equipment	Amps	KVA
CH-1	114.00	94.78
Total Removed	114.00	94.78

Added Equipment	Amps	KVA
CH-1	127.50	106.00
Total Added	127.50	106.00

As Built Drawings	Amps	KVA
Existing Load	277.00	230.29
Removed :	-114.00	-94.78
Added :	127.50	106.00
New Load Total:	290.50	241.52

PARTIAL RISER DIAGRAM

N.T.S

Kimley»Horn

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REVISIONS

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SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
642 TAYLOR RD, PORT ORANGE, FL 32127

JIMMY NGUYEN
PE 91973

ARCH/ENGR OF RECORD

DESIGNED BY
JN

DRAWN BY
SRM

ISSUE DATE

AE PROJECT NUMBER
145642001

SHEET TITLE

ELECTRICAL RISER DIAGRAMS &
SCHEDULES

DRAWING NO.

E501

STANDARD ANNOTATIONS		
SYMBOL	ABBREVIATION	DESCRIPTION
		DETAIL REFERENCE CALLOUT: TOP-DETAIL NUMBER, BOTTOM- DRAWING NUMBER SHOWN ON
		SECTION VIEW CALLOUT: TOP-DETAIL NUMBER, BOTTOM- DRAWING NUMBER SHOWN ON
	POC	CONNECT TO EXISTING
		DEMOLISH TO POINT INDICATED
		SHEET NOTES
		SHEET KEY NOTES
		REVISION TAG
	AP	ACCESS PANEL
	TSTAT	THERMOSTAT
	HSTAT	HUMIDISTAT
		CARBON MONOXIDE SENSOR
		CARBON DIOXIDE SENSOR
		NITROGEN DIOXIDE SENSOR
		BACKDRAFT DAMPER
		DUCT MOUNTED SMOKE DETECTOR
		TEMPERATURE CONTROL PANEL
		TEMPERATURE SENSOR
		HUMIDITY SENSOR
		DIFFERENTIAL PRESSURE SENSOR
		STATIC PRESSURE SENSOR
		FLOW SWITCH
		EMERGENCY SHUTDOWN SWITCH
		AIRFLOW DOOR UNDERCUT

MECHANICAL ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
AABC	AMERICAN AIR BALANCE COUNCIL
AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
BAS	BUILDING AUTOMATION SYSTEM
BFB	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BHP	BRAKE HORSE POWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU/H	BRITISH THERMAL UNIT PER HOUR
COP	COEFFICIENT OF PERFORMANCE
(D)	DEMOLISHED
DB	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DN	DOWN
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
EWT	ENTERING WATER TEMPERATURE
°F	DEGREES FAHRENHEIT
FA	FROM ABOVE
FB	FROM BELOW
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
GA	GAGE OR GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
HD	HEAD PRESSURE
HP	HORSEPOWER
IE	INVERT ELEVATION BELOW FINISHED FLOOR
KW	KILOWATT
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	ONE THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPS
MIN	MINIMUM
MOCB	MAXIMUM OVER CURRENT PROTECTION
N/A	NOT APPLICABLE
N/C	NORMALLY CLOSED
N/O	NORMALLY OPEN
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NFS	NOT IN SCOPE
NTS	NOT TO SCALE
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
RPM	REVOLUTIONS PER MINUTE
SS	STAINLESS STEEL
TDH	TOTAL DYNAMIC HEAD
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
Typ	TYPICAL
UL	UNDERWRITERS LABORATORIES, INC.
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP

MECHANICAL SYMBOLS AND LEGEND - WATER SIDE		
SYMBOL	ABBREVIATION	DESCRIPTION
—CWS—	CWS	CONDENSER WATER SUPPLY PIPING
—CWR—	CWR	CONDENSER WATER RETURN PIPING
—CHWS—	CHWS	CHILLED WATER SUPPLY PIPING
—CHWR—	CHWR	CHILLED WATER RETURN PIPING
—CD—	CD	CONDENSATE
—CR—	CR	CONDENSATE RETURN
—RL—	RL	REFRIGERANT LIQUID
—RS—	RS	REFRIGERANT SUCTION
—HWS—	HWS	HEATING HOT WATER SUPPLY PIPING
—HWR—	HWR	HEATING HOT WATER RETURN PIPING
	BV	BALL VALVE
	CS	CIRCUIT SETTER OR FLOW CONTROL VALVE
	BFV	BUTTERFLY VALVE
	GV	GATE VALVE
	CHV	CHECK VALVE
	GLV	GLOBE VALVE
	ANV	ANGLE VALVE
	TDV	TRIPLE DUTY VALVE
	HV	3/4" HOSE END DRAIN VALVE
	BP	BACKFLOW PREVENTOR
	STR	STRAINER
	STR	STRAINER WITH 3/4" HOSE END DRAIN VALVE
	PTR	PRESSURE - TEMPERATURE RELIEF VALVE
	RV	PRESSURE RELIEF VALVE
		2-WAY CONTROL VALVE
		3-WAY CONTROL VALVE
		UNION
		REDUCER
	PG	PRESSURE GAGE WITH GAUGE COCK
	TH	THERMOMETER
	FCO/GCO	FLOOR OR GRADE CLEANOUT
	WCO	WALL CLEANOUT
	PD	PIPING TEE DOWN
	PU	PIPING TEE UP
	PU	PIPING ELBOW UP
	PD	PIPING ELBOW DOWN
	COP	CAP ON END OF PIPE
		ARROW INDICATES DIRECTION OF EACH FLOW
		PUMP

MECHANICAL SHEET LIST	
SHEET #	SHEET NAME
M000	MECHANICAL SYMBOLS, ABBREVIATIONS, AND NOTES
M100	SITE PLAN
M101	MECHANICAL DEMO PLAN
M102	MECHANICAL NEW PLAN
M501	MECHANICAL PIPING DIAGRAMS AND DETAILS
M502	MECHANICAL CONTROLS

MECHANICAL GENERAL NOTES

1.	THE INFORMATION INDICATED WITHIN THE DRAWINGS AS EXISTING WAS TAKEN FROM CLIENT PROVIDED INFORMATION SUCH AS AS-BUILT DRAWINGS, SITE PHOTOS, OR OBSERVED BY THE DESIGN TEAM DURING SITE VISITS. THE ACCURACY OF THE DRAWING IS NOT GUARANTEED BUT ONLY FOR INDICATING, TO THE BEST OF OUR KNOWLEDGE, THE EXISTING SYSTEMS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND FIELD VERIFY SYSTEMS SHOWN ON THE DRAWINGS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS TO THE DRAWING INFORMATION AS REQUIRED TO MATCH EXISTING FIELD CONDITIONS.
2.	THE CONTRACTOR SHALL INSTALL NEW SYSTEMS AMONG EXISTING OBSTACLES SUCH AS BUT NOT LIMITED TO DOMESTIC WATER PIPING, WASTE AND VENT PIPING, FIRE SPRINKLER PIPING, GAS PIPING, DUCTING, AND EXISTING HVAC EQUIPMENT. RELOCATION OF EXISTING SYSTEMS MAY BE REQUIRED IF IN CONFLICT WITH NEW SYSTEMS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY RELOCATIONS WITH THE APPROPRIATE SUBCONTRACTOR.
3.	MECHANICAL WORK SHALL CONFORM WITH THE LATEST ADOPTED LOCAL CODES, ORDINANCES, AND DESIGN REQUIREMENTS UNLESS OTHERWISE APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHL).
4.	CONTRACTOR SHALL COORDINATE WITH STRUCTURAL REQUIREMENTS BEFORE DRILLING OR CUTTING ANY CMU WALLS, CEILING JOISTS OR STRUCTURAL ELEMENTS.
5.	CONTRACTOR TO PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, AND INSURANCES TO COMPLETE THE DESIGN PER THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO THE SATISFACTION OF THE ENGINEER/ARCHITECT.
6.	CONTRACTOR TO PROVIDE ALL REQUIRED PERMITS AND FEES TO COMPLETE THE PROJECT.
7.	THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH DRAWINGS PROVIDED BY OTHER DISCIPLINES. CONSTRUCTION CONFLICTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER/ARCHITECT.
8.	DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS NOT FEASIBLE TO SHOW ALL REQUIRED OFFSETS, ELEVATIONS, ETC., IT IS THEREFORE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE REQUIRED ROUTING, ELEVATION, AND PLACEMENT OF EQUIPMENT AND PROVIDE REQUIRED OFFSETS INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND THE SPECIFICATIONS TO MEET THE INTENT OF THE DESIGN. ALL DIMENSIONS AND MEASUREMENTS SHALL BE VERIFIED ON-SITE BEFORE FABRICATION AND/OR INSTALLATION OF THE EQUIPMENT.
9.	ALL INFORMATION SHOWN ON SCHEDULES ARE BASED ON AVAILABLE PRODUCT INFORMATION AT THE TIME OF DESIGN.
10.	THE CONTRACTOR SHALL KEEP INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT ON THIS PROJECT AT THE JOBSITE AND SHALL HAVE THEM ACCESSIBLE FOR THE FIELD INSPECTOR UPON REQUEST.
11.	PROVIDED DRAWINGS BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PROVIDE AN INSTALLATION SUITABLE IN DIMENSION, CONSTRUCTION, FUNCTION AND FINISH FOR THE PURPOSE INTENDED.
12.	ANY DISCREPANCIES DURING BID SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER/ARCHITECT AND RESOLVED PRIOR TO FINALIZATION OF THE CONSTRUCTION CONTRACT.
13.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADE.
14.	EXACT LOCATION OF ACCESS PANELS SHALL BE COORDINATED WITH FINAL PLACEMENT OF ALL VALVES, DAMPERS, AND ANY OTHER COMPONENT IDENTIFIED ON THE DRAWINGS.
15.	FINISH AND COLOR OF EXTERNAL SURFACES FOR EXPOSED UNITS OR PIPING SHALL BE APPROVED BY THE ARCHITECT.
16.	CONTRACTOR SHALL PERFORM TESTING AND ADJUSTING AS REQUIRED FOR ALL EQUIPMENT AND/OR SYSTEMS WITHIN THIS SCOPE OF WORK PER THE SPECIFICATIONS.

GENERAL DEMOLITION NOTES:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER OR OWNER, AS DEFINED IN BID DOCUMENTS, OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. OWNER RETAINS RIGHTS OF SALVAGE FOR EQUIPMENT AND FIXTURES TO BE REMOVED. COORDINATE WITH OWNER THE EQUIPMENT AND FIXTURES TO BE SALVAGED AND THE LOCATION FOR STORAGE. AVOID DAMAGE TO SALVAGED EQUIPMENT, FIXTURES AND DEVICES DURING DEMOLITION WORK AND DURING TRANSPORT TO OWNER'S DESIGNATED STORAGE LOCATION.
3. REMOVE ITEMS SHOWN HEAVY-LINED DASHED, AND/OR NOTED TO BE REMOVED.
4. AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION. REPAIR DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO THE OWNER.
5. SEAL PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE MECHANICAL COMPONENTS ARE REMOVED AND WHERE THE EXISTING PENETRATION IS NOT USED FOR THE NEW INSTALLATION. REPAIR DAMAGED SURFACES TO MATCH ADJACENT AREAS OR AS INDICATED ON THE ARCHITECTURAL DRAWINGS.
6. REMOVE HANGERS AND SUPPORTS WHERE DUCTWORK, PIPING AND/OR EQUIPMENT ARE REMOVED AND THE EXISTING HANGERS AND SUPPORTS ARE NOT USED FOR THE NEW INSTALLATION.
7. INSTALL PERMANENT CAPS WHERE DUCTWORK AND PIPING IS REMOVED AND THE EXISTING TAPS ARE NOT USED FOR THE NEW INSTALLATION. WHERE FLOORS, WALLS AND PIPING ARE REMOVED AND THE EXISTING TAPS WILL BE USED FOR THE NEW INSTALLATION, INSTALL TEMPORARY CAPS TO PROTECT THE INTERIOR SURFACES UNTIL NEW DUCTWORK AND PIPING ARE INSTALLED.
8. INSPECT EXISTING EQUIPMENT TO REMAIN TO VERIFY THAT EQUIPMENT IS OPERATING PROPERLY. NOTIFY OWNER OF DAMAGED AND/OR MALFUNCTIONING COMPONENTS.
9. WHERE SHUTDOWN OF EXISTING SYSTEMS IS REQUIRED DURING DEMOLITION, COORDINATE SHUTDOWN TIME AND DURATION WITH OWNER TO MINIMIZE DOWNTIME. NOTIFY OWNER SEVEN (7) DAYS PRIOR TO INTERRUPTION OF SERVICE.
10. CEASE WORK AND IMMEDIATELY NOTIFY THE OWNER SHOULD ANY HAZARDOUS MATERIALS BE ENCOUNTERED DURING THE PERFORMANCE OF THE WORK.
11. REMOVAL, RECOVERY, RECYCLING, AND DISPOSAL OF REFRIGERANT, CONTAINED IN ANY EQUIPMENT TO BE REMOVED, SHALL BE PERFORMED IN STRICT ACCORDANCE WITH CURRENT EPA GUIDELINES.

MECHANICAL EQUIPMENT TAGS	
DIFFUSER / GRILLE / REGISTER TAG	
EXAMPLE: <u>CD-1</u> 12"Ø / 500	DESCRIPTION: <u>(TYPE)</u> (NECK SIZE) / (CFM)
AHU TAG	
EXAMPLE: <u>AHU-1</u>	DESCRIPTION: AHU - (UNIT NUMBER)
VAV BOX TAG	
EXAMPLE: <u>VAV-1-1</u>	DESCRIPTION: VAV - (AHU NUMBER) - (VAV BOX NUMBER)

APPLICABLE CODES	
1.	2023 FLORIDA BUILDING CODE (8TH EDITION)
2.	2023 FLORIDA MECHANICAL CODE (8TH EDITION)
3.	2023 FLORIDA ENERGY CONSERVATION CODE (8TH EDITION)

AIR COOLED CHILLER SCHEDULE																									
MARK	MANUFACTURER	MODEL	COOLING CAPACITY (TONS)	COMPRESSOR TYPE	COMPRESSOR QTY.	AMBIENT AIR TEMP	WATER DATA					PUMP HP (EACH X 2)	PUMP FLOW GPM (EACH)	PUMP HEAD FT WG	CONDENSER FAN QTY	REFRIGERANT TYPE	EFFICIENCY		ELECTRICAL DATA				WEIGHT (LBS)	NOTES	
CH-1	CARRIER	30RC-06063	56.3	SCROLL	4	95.0	DESIGN GPM	MIN GPM	EWI	LWT	MAX WPD	3	96.0	35.0	4	R-32	KW / TON	IPLV	VOLTAGE	PHASE	MCA	MOCP	3330	ALL	
NOTES:							14. PROVIDE INTEGRAL BUFFER TANK WITH MINIMUM 240 GALLON SIZE																		
1. FURNISH WITH SINGLE-POINT CONNECTION							15. PROVIDE OPTIONAL EXPANSION TANK																		
2. BASIS OF DESIGN: CARRIER							16. CHILLER SHALL COME FACTORY FURNISHED WITH A INTERFACE PANEL TO SHARE ALL UNIT STATUS AND DIAGNOSTICS WITH THE BUILDING EMS SYSTEM.																		
3. PROVIDE BACNET CARD							17. PROVIDE LOW-SOUND ACOUSTICAL PACKAGE.																		
4. PROVIDE EVAPORATOR HEATER							18. PUMPS ARE SIZED AND INTENDED TO OPERATE IN LEAD/LAG ARRANGEMENT.																		
5. PROVIDE DUAL PUMPS WITH 15% OVERCAPACITY							19. CAPACITY RATED AT 95 DEGREES ENTERING THE CONDENSER COILS.																		
6. PROVIDE HOT-GAS BYPASS							20. CHILLER IS CONSTANT VOLUME WATER FLOW.																		
7. 65 KA SCCR RATING																									
8. SUCTION LINE INSULATION																									
9. AL/CU CONDENSER COIL WITH FACTORY DIPPED E-COAT																									
10. PROVIDE NON-FUSED DISCONNECT																									
11. PROVIDE NEOPRENE VIBRATION ISOLATORS ON BOTH COMPRESSORS AND UNIT																									
12. PROVIDE CONDENSER COIL GUARDS																									
13. SINGLE POINT POWER CONNECTION																									

BUFFER TANK (BID ALTERNATE)								
MARK	MANUFACTURER	MODEL	TANK VOLUME GALLONS	TANK DIAMETER INCHES	TANK HEIGHT INCHES	INLET / OUTLET SIZE INCHES	TANK WEIGHT LBS DRY	NOTES
BF-1	JOHN WOOD COMPANY	JBTR-24-300	300	36	71.5	4 / 4	710	ALL

1. CONTRACTOR SHALL PROVIDE A BUFFER TANK IF PROPOSED CHILLER DOES NOT INCORPORATE AN INTEGRAL BUFFER TANK OF A MINIMUM SIZE OF 240 GALLONS.
2. 125 PSIG RATED CONSTRUCTION.
3. FLANGED CONNECTIONS.
4. PROVIDE MINIMUM 2" INSULATION. CAN BE FACTORY OR FIELD APPLIED.
5. TOTAL HEIGHT OF UNIT IS 14" (UNIT STAND) PLUS TANK HEIGHT LISTED ABOVE.

14. PROVIDE INTEGRAL BUFFER TANK WITH MINIMUM 240 GALLON SIZE
15. PROVIDE OPTIONAL EXPANSION TANK
16. CHILLER SHALL COME FACTORY FURNISHED WITH A INTERFACE PANEL TO SHARE ALL UNIT STATUS AND DIAGNOSTICS WITH THE BUILDING EMS SYSTEM.
17. PROVIDE LOW-SOUND ACOUSTICAL PACKAGE.
18. PUMP SHALL BE DESIGNED TO OPERATE IN LEAD/LAG ARRANGEMENT. REFER TO CONTROLS FOR MORE INFORMATION.
19. CAPACITY RATED AT 95 DEGREES ENTERING THE CONDENSER COILS.
20. CHILLER IS CONSTANT VOLUME WATER FLOW.

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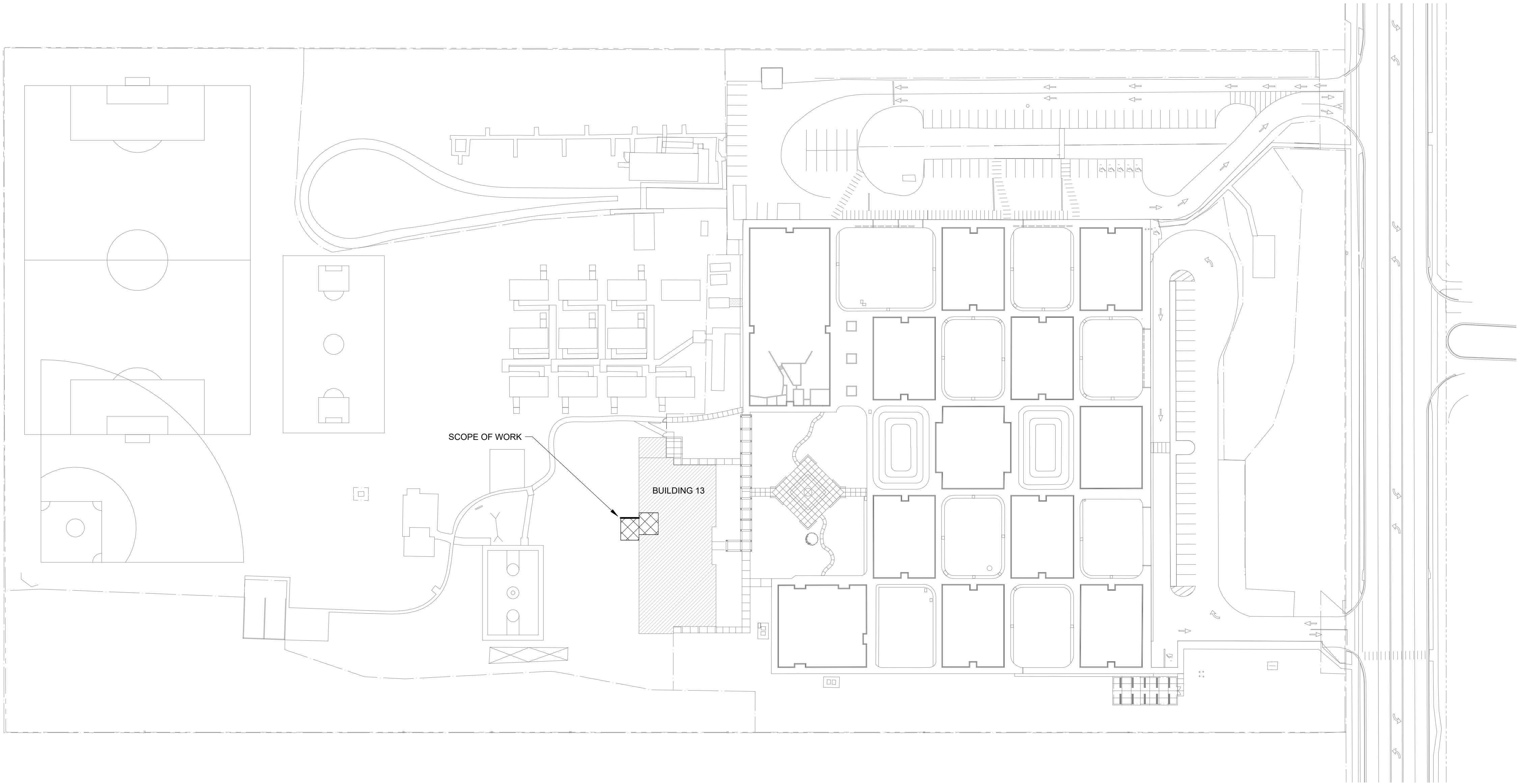
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SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
TAYLOR RD, PORT ORANGE, FL 32127

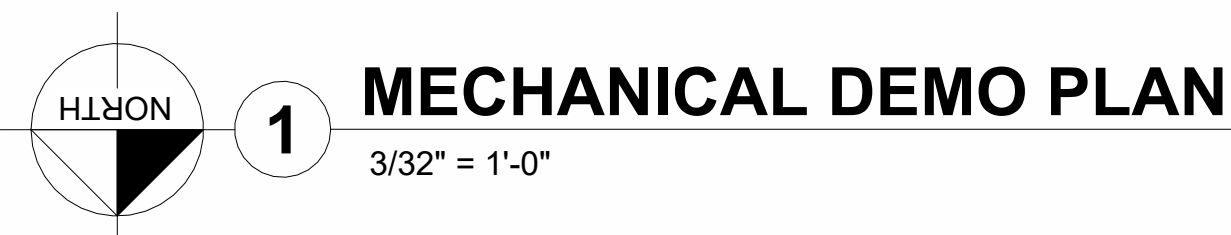
642 TAYLOR RD, PORT ORANGE, FL 32127

JEREMY DEMBOSKI PE 94304		ARCHENOR OF RECORD
DESIGNED BY KJP	DRAWN BY SRM	
ISSUE DATE 11/18/2025	AE PROJECT NUMBER 145642001	
SHEET TITLE MECHANICAL SYMBOLS, ABBREVIATIONS, AND NOTES		
DRAWING NO.		

M000



M100



1. PIPING SHALL BE SUPPORTED AT DISTANCES NOT EXCEEDING THE SPACING SPECIFIED IN FBC-MECHANICAL TABLE 305.4, OR IN ACCORDANCE WITH MSS SP-69.
2. PIPING SHOWN IS FOR ROUTING PURPOSES ONLY. CONTRACTOR SHALL REFER TO PIPING RISER DIAGRAMS FOR SIZING OF ALL CHILLED WATER PIPING. ALL EXTERIOR CHILLED WATER PIPING SHALL BE PROVIDED WITH ALUMINUM SACKET.
4. EXISTING CONDITIONS ARE BASED ON EXISTING DRAWING BY MATERN PROFESSIONAL ENGINEERING DATED MAY, 27, 2005 AND SITE VISIT BY KIMLEY-HORN PERSONNEL.

KEYNOTES

- ## # KEYNOTES

 1. REMOVE EXISTING 3" CHWS&R PIPING FROM CHILLER CONNECTION TO AND INCLUDING ISOLATION VALVE.
 2. REMOVE EXISTING CHILLER AND CHILLED WATER PIPING, PIPING SPECIALTIES, AND CONTROLS COMPONENTS TO THE EXTENT INDICATED.
 3. EXISTING CHILLED WATER AIR HANDLER TO REMAIN.
 4. EXISTING AIR SEPARATOR TO REMAIN. EXISTING MAKE-UP WATER PIPING AND COMPONENTS TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 5. EXISTING CHEMICAL SHOT FEEDER AND SHOT FEEDER PIPING TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 6. EXISTING VENTURI FLOW/READING DEVICE TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 7. REMOVE 3" CHW PIPING FROM CHILLER INTERNAL STORAGE TANK TO CHWR INLET.
 8. 3" CHWS&R PIPING FLANGED CONNECTIONS TO EMERGENCY CHILLER TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 9. EXISTING ELECTRICAL DISCONNECT. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. SHOWN FOR INFORMATION/COORDINATION ONLY.
 10. EXISTING KMC BAS PANEL TO REMAIN. BAS CONTRACTOR TO MODIFY CONTROLS AND COMPONENTS REQUIRED. SHOWN FOR INFORMATION/COORDINATION ONLY.

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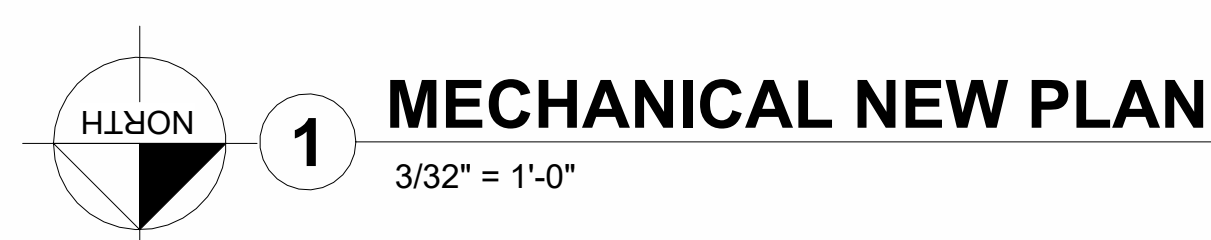
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SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
642 TAYLOR RD, PORT ORANGE, FL 32127

JEREMY DEMBOSKI PE 94304		ARCHENGR OF RECORD
DESIGNED BY KJP	DRAWN BY SRM	
ISSUE DATE 11/18/2025	AE PROJECT NUMBER 145642001	
SHEET TITLE MECHANICAL DEMO PLAN		
DRAWING NO.		

DRAWING NO. **M101**



1. PIPING SHALL BE SUPPORTED AT DISTANCES NOT EXCEEDING THE SPACING SPECIFIED IN FBC MECHANICAL TABLE 305.4, OR IN ACCORDANCE WITH MSS SP-69.
2. PIPING SHOWN IS FOR ROUTING PURPOSES ONLY. CONTRACTOR SHALL REFER TO PIPING RISER DIAGRAMS FOR SIZING OF ALL CHILLED WATER PIPING.
3. ALL EXTERIOR CHILLED WATER PIPING SHALL BE PROVIDED WITH ALUMINUM JACKET.
4. EXISTING CONDITIONS SHALL BE SHOWN ON EXISTING DRAWING BY HORN PROFESSIONAL ENGINEERING DATED MAY, 27, 2005 AND SITE VISIT BY KIMLEY-HORN PERSONNEL.

KEYNOTES

- # KEYNOTES
1. CONNECT NEW 3" CHILLED WATER PIPING FROM NEW CHILLER TO EXISTING CHILLED WATER PIPING AT THIS LOCATION. INSTALL NEW LUG TYPE 3" ISOLATION VALVES ON EXISTING FLANGES. RE-INSULATE AS REQUIRED WHERE EXISTING INSULATION IS DAMAGED WHEN INSULATING NEW PIPING.
 2. INSTALL NEW CHILLER ON NEOPRENE VIBRATION ISOLATION PADS. CONNECT PIPING, PIPING SPECIALTIES AND CONTROLS ACCORDING TO CONSTRUCTION DOCUMENTS AND MANUFACTURERS INSTALLATION AND OPERATION MANUAL.
 3. TEST AND BALANCE CONTRACTOR SHALL BALANCE THE EXISTING 3-WAY VALVES AS FOLLOWS. THE OA SECTION OF AHU-1 TO 53.0 GPM AND THE RA SECTION TO 43.0 GPM.
 4. EXISTING AIR SEPARATOR TO REMAIN. EXISTING MAKE-UP WATER PIPING AND COMPONENTS TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 5. EXISTING CHEMICAL SHOT FEEDER AND SHOT FEEDER PIPING TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 6. EXISTING KMC BAS PANEL TO REMAIN. BAS CONTRACTOR TO MODIFY CONTROLLERS AND COMPONENTS AS REQUIRED. SHOWN FOR INFORMATION/COORDINATION ONLY.
 7. EXISTING ELECTRICAL DISCONNECT. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. SHOWN FOR INFORMATION/COORDINATION ONLY.
 8. VENTURI FLOW MEASURING DEVICE TO BE UTILIZED BY TEST AND BALANCE CONTRACTOR FOR SYSTEM BALANCING. SHOWN FOR INFORMATION/COORDINATION ONLY.
 9. 3" CHWS&R PIPING FLANGED CONNECTIONS TO EMERGENCY CHILLER TO REMAIN. SHOWN FOR INFORMATION/COORDINATION ONLY.
 10. BASIS OF DESIGN CHILLER HAS A CHW SHUTTER/STORAGE TANK WITH 240 GALLONS. IF THE CHILLER OR CONTRACTOR INSTALLS A CHILLER MODEL THAT DOES NOT INCLUDE A BUFFER TANK OF AT LEAST 240 GALLONS, A STAND ALONE BUFFER TANK OF 240 GALLONS OR GREATER SHALL NEED TO BE INSTALLED IN THIS LOCATION INTERCEPTING THE 3"CHWR PIPING. CONTRACTOR SHALL INSTALL 3" ISOLATION VALVES ON EACH SIDE OF BUFFER TANK PIPING CONNECTION.
 11. NEW 3"CHWR PIPING ROUTED FROM INTERNAL BUFFER TANK TO CHILLER INLET CONNECTION.

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Kimley»Horn

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SPRUCE CREEK ELEMENTARY
REPLACE 60 TON CHILLER
VCS Project NO. 2648251
642 TAYLOR RD, PORT ORANGE, FL 32127

VCS Flight NO: Z040Z31
6642 TAYLOR RD, PORT ORANGE, FL 32127

ARCHENGR OF RECORDS
JEREMY DEMBOSKI
PE 94304

DESIGNED BY
KJP

DRAWN BY
SRM

ISSUE DATE

AE PROJECT NUMBER
145642001

SHEET TITLE

MECHANICAL NEW PLAN

DRAWING M

M102



M501

REVISIONS

[illegible]

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VCS Project NO. 2648251
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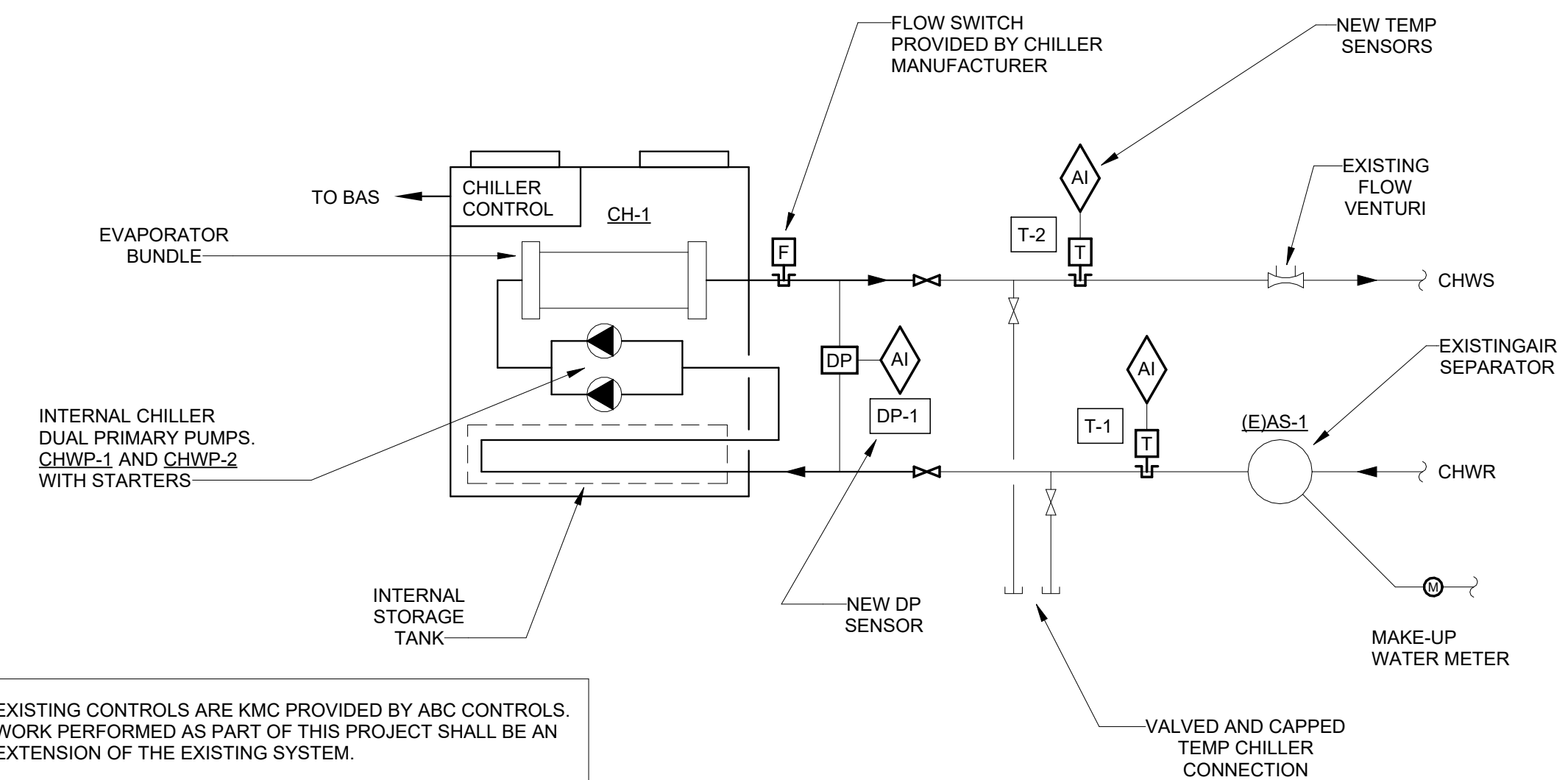
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CHENGR OF RECORD

PROJECT NUMBER

MECHANICAL CONTROLS

M502



AIR COOLED CHILLED WATER - SINGLE CHILLER, CONSTANT VOLUME PUMPING

N.T.S