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**RICHMOND  
COMMUNITY  
COLLEGE**

LINDSEY-PETRIS  
CAFETERIA / DINING  
ADDITION VOL.1

BID DOCUMENTS

**ELECTRICAL  
SPECIFICATIONS**

DATE 4-5-2019  
PROJECT NO 16063

NO	DATE	DESCRIPTION:
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SEAL

SHEET NUMBER  
2 OF 11  
OPTIMA # 170017

**E002**

17. SEISMIC. LISTED AS COMPLYING WITH ASTM E-814. INSTALL THE DEVICE(S) OR SYSTEM(S) IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE THE APPROPRIATE DEVICE(S) OR SYSTEM(S) WITH AN "I" RATING EQUAL TO THE HEAVIEST RATED COMPONENTS BEING PROTECTED. SEISMIC PROTECTIVE CONNECTIONS SHALL MEET ALL APPLICABLE STATE AND LOCAL BUILDING CODE REQUIREMENTS AS WELL AS ASCE-7 REQUIREMENTS.

18. ELECTRICAL COORDINATION WITH OTHER TRADES:

- A. THE ELECTRICAL CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING ALL CONDUITS AND TRAYS IN CONFORMANCE WITH THE REQUIREMENTS TO RESIST THE EFFECTS OF EARTHQUAKES ON THE ELECTRICAL SYSTEM AS WELL AS TO PROVIDE SCHEDULED INSPECTIONS BASED ON THE SPECIFIC GEOGRAPHIC LOCATION AS DETAILED IN THE SUBMITTALS. THE ELECTRICAL CONTRACTOR SHALL MEET ALL APPLICABLE STATE AND LOCAL BUILDING CODE REQUIREMENTS AS WELL AS ASCE-7 REQUIREMENTS.

DEMOLITION NOTES:

- A. PARTIAL AND TOTAL DEMOLITION OF PORTIONS SHALL BE PERFORMED ALONG WITH A NECESSARY MODIFICATIONS TO THAT PORTION OF THE EXISTING BUILDING WHICH SHALL REMAIN SO THAT IT CONTINUES TO FUNCTION UNIMPAIRED BY THE DEMOLITION AND ASSOCIATED NEW CONSTRUCTION.

20. COORDINATION DRAWINGS:

- A. THE MECHANICAL CONTRACTOR SHALL ORGANIZE COORDINATION MEETINGS TO DEVELOP A SET OF DRAWINGS WITH ALL CONTRACTORS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE PROTECTION, IT/DATA, SECURITY AND GENERAL). THE MECHANICAL CONTRACTOR WILL HAVE THE LEAD RESPONSIBILITY FOR THE COORDINATION DRAWINGS. THE MECHANICAL CONTRACTOR SHALL PRODUCE THE ORIGINAL DRAWINGS AND FORWARD THE DRAWINGS TO EACH OF THE OTHER CONTRACTORS FOR THEM TO ADD THEIR SYSTEMS TO THIS SET OF COORDINATION DRAWINGS.

- A. ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED WITH TESTED AND APPROVED FIRESTOPPING DEVICES (S) OR SYSTEMS (S) WHICH HAVE BEEN TESTED AND APPROVED FOR THE PENETRATION. PROVIDE THE APPROPRIATE DEVICE(S) OR SYSTEM(S) WITH AN "I" RATING EQUAL TO THE HEAVIEST RATED COMPONENTS BEING PROTECTED. SEISMIC PROTECTIVE CONNECTIONS SHALL MEET ALL APPLICABLE STATE AND LOCAL BUILDING CODE REQUIREMENTS AS WELL AS ASCE-7 REQUIREMENTS.

5. THICK. D. LETTERING HEIGHT SHALL BE 1/2" MINIMUM. E. NAMEPLATES SHALL BE ATTACHED WITH SELF-DRILLING/SELF-TAPPING SCREWS, TAMER-RESISTANT RECEPTACLES SHALL BE PROVIDED IN ALL DWELLING UNITS, GUEST ROOMS/SUITES, CHILD-CARE FACILITIES (INCLUDING SCHOOLS OF AGES 10 OR UNDER), AND STUDENT HOUSING.

13. PANELBOARDS:

- A. PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE THE SAME MANUFACTURER. LOAD CENTER TYPE PANELBOARDS SHALL BE USED WHERE THE PANELBOARD SERVES A DWELLING UNIT.

DRY-TYPE TRANSFORMERS:

- A. TRANSFORMERS SHALL BE FACTORY-ASSEMBLED, ENERGY EFFICIENT TYPE MEETING DEPARTMENT OF ENERGY 10-GR-PART-431 REQUIREMENTS AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL.

15. FIRE ALARM SYSTEM:

- A. NEW DEVICES SHALL BE CONNECTED TO THE EXISTING FIRE ALARM SYSTEM IN COMPLIANCE WITH ALL APPLICABLE STATE AND LOCAL BUILDING CODES AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA). ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN ALARM RATED AND INSTALLED AS AN ALARM RATED DEVICE.

4. K. ALL GFCI RECEPTACLES SHALL HAVE AUTO-MONITORING / SELF-TEST FUNCTION AND REVERSE LINE-LOAD MISFIRE FUNCTION AND MEET ALL REQUIREMENTS OF UL 943 (LATEST EDITION). L. TAMER-RESISTANT RECEPTACLES SHALL BE PROVIDED IN ALL DWELLING UNITS, GUEST ROOMS/SUITES, CHILD-CARE FACILITIES (INCLUDING SCHOOLS OF AGES 10 OR UNDER), AND STUDENT HOUSING.

6. SUPPORTS:

- A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE. B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, OR CAST IN PLACE. C. WALLS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED.

7. PAINTING:

- A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT, PANEL TUBS, COVERS, ETC. SHALL BE PRIMED AND ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL FINISH OR AS DIRECTED BY THE ARCHITECT.

9. LIGHTING FIXTURES:

- A. TYPES AND MANUFACTURERS ARE SCHEDULED ON THE PLANS. EQUIVALENT EQUIPMENT BY OTHERS MAY BE SUBMITTED ONLY AS INDICATED ON THE PLANS AND ARE SUBJECT TO THE APPROVAL OF THE OWNER'S ENGINEER.

10. LIGHTING CONTROLS:

- A. FURNISH AND INSTALL WHERE SHOWN AN ELECTRONIC TIME CONTROLLER AS MANUFACTURED BY TORK (NSI), PARAGON, INTERMATIC, OR APPROVED EQUAL. CONTACTS SHALL BE SPST OR AS INDICATED, RATED 120/277V AT 20A.

11. EQUIPMENT IDENTIFICATION:

- A. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT SUPPLIED FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO, WIRING TROUGHS, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, ETC.

- O. PROVIDE PULL BOXES, SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360°. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDER PAVED AREAS, THEY SHALL BE RGS.

3. OUTLET BOXES:

- A. JUNCTION AND PULL BOXES SHALL BE GUN GALVANIZED STEEL. ACCEPTED MANUFACTURERS SHALL BE STEEL CITY (THOMAS & BETTS), RACO, CROUSE-HINDS, APPLITION (EMERSON), OR APPROVED EQUIVALENT.

4. CONDUCTORS:

- A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SPERSLUK), UNITED COPPER (ULCO), CERRO (SPL), OR APPROVED EQUAL, "PRE-LUBRICATED" BY THE MANUFACTURER.

VOLTAGE	CONDUCTOR LENGTH *	BRANCH CIRCUIT
120	5' - 50'	#12
120	51' - 90'	#10
120	91' - 140'	#8
120	141' - 225'	#6
277	0' - 125'	#12
277	126' - 200'	#10
277	201' - 330'	#8
277	331' - 525'	#6

- \* - THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE WHICH THE CIRCUIT SERVES. WHERE THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

5. WIRING DEVICES:

- A. WIRING DEVICES SHALL BE SPECIFICATION GRADE, MINIMUM EQUAL TO COPPER DUTY INDICATED UNLESS OTHERWISE MANUFACTURED BY HUBBELL, LEGRASS & SEYMOUR, LEVITON, OR APPROVED EQUAL, UNLESS OTHERWISE NOTED.

- SWITCHES (120/277V) SHALL BE AS FOLLOWS:

CONDUCTOR	COOPER
SINGLE-POLE 20 AMP	COOPER I1221
DOUBLE-POLE 20 AMP	COOPER I1222
THREE-WAY 20 AMP	COOPER AH123
FOUR-WAY 20 AMP	COOPER AH124
SINGLE-POLE 20 AMP	COOPER I1221L

2. RACEWAY:

- A. CONDUIT SHALL BE MANUFACTURED BY ALLIED, WHEATLAND, REPUBLIC CONDUIT, WESTERN TUBE, OR APPROVED EQUIVALENT.

1. GENERAL:

- A. THE WORK COVERED BY THESE SPECIFICATIONS CONSISTS OF FURNISHING ALL LABOR, MATERIALS AND NECESSARY TOOLS AND EQUIPMENT FOR THE COMPLETE AND SATISFACTORY OPERATING ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS.