

AMENDMENT OF SOLICITATION

1. AMENDMENT/MODIFICATION NO. 0004		2. EFFECTIVE DATE MAY 07, 2003	
3. ISSUED BY DEPARTMENT OF THE ARMY, BALTIMORE DISTRICT CORPS OF ENGINEERS P.O. BOX 1715 BALTIMORE, MARYLAND 21203-1715			
4. NAME AND ADDRESS OF CONTRACTOR (Name, street, county, State and ZIP Code)		4A. AMENDMENT OF SOLICITATION NO. DACW31-03-R-0008	
		4B. DATED (SEE ITEM 5) APRIL 03, 2003	
5. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is not extended. DATE OF RECEIPT OF PROPOSAL 4:00 PM, Local Time MAY 15, 2003 Others must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 4 and 8, and returning <u>1</u> copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of the amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.			
6. ACCOUNTING AND APPROPRIATION DATA (If required) LUKE C. MOORE SENIOR HIGH SCHOOL WASHINGTON, D.C.			
7. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) <p style="text-align: center;"><u>SEE THE FOLLOWING PAGES</u></p>			
Except as provided herein, all terms and conditions of the document referenced in Item 4A, as heretofore changed, remains unchanged and in full force.			
8. NAME AND TITLE OF SIGNER (Type or print)		9. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	10. DATE SIGNED

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EFFECTIVE: MAY 07, 2003

AMENDMENTS:

- 1) Amendment 0002, Item 12: On page 51 of revised submittal register, insert submittals for new Section 16720N, as shown on attached submittal register page.
- 2) Amendment 0002, Item 23: In section 13280A-7, Paragraph 1.3, add the following sentence at the end of the paragraph: "All hazardous material abatement shall be performed in accordance with the Specification and Hazardous Material Survey Report by Applied Environmental Inc. dated March 11, 2002.

SOLICITATION:

- 3) Price Schedule: Delete price schedule in its entirety as originally issued and substitute the attached revised price schedule, dated May 05, 2003.

SPECIFICATIONS:

- 4) Page 01050-7, Paragraph 1.11: Delete this paragraph in its entirety.
- 5) Page 05120A-4, Paragraph 3.1: Add the following: "The fabrication plant shall be certified under the AISC FCD for Category "Conventional Building Structures" structural steelwork.
- 6) Page 05500-8, Paragraph 2.17: Add the following at the end of the paragraph:

"Shelving shall comply with the following:

 1. Rolled steel box form of 18 gage or better to provide 800 lb. Safe load per shelf capacity.
 2. Corner posts: 14 gage steel angles, 1-1/8" x 2-1/2inches.
 3. 18 gage shelves.
 4. Rear and side bracing: 12 gage, X-type.
 5. Wall fasteners: Secure shelving to adjacent walls where applicable, with size and type fasteners as recommended by the fastener manufacturer and/or manufacturer for the particular application."
- 7) Page 07810a-4, Paragraph 1.7: Delete the Fire Rating Schedule. Revise the last sentence of paragraph as follows: "See drawings for locations and ratings of spray fireproofing."
- 8) Page 09900-23: Add paragraph 3.13 as follows:

"3.13 RESINOUS FLOOR COATING

Quartz Aggregate Flooring: Decorative-type floor surfacing system consisting of primer, topping including resin, hardener and ceramic color-coated quartz aggregate; slip-resistance aggregate, and finish coat or coats. Provide only factory-packaged materials including aggregate for all components of floor surfacing system.

1. Colors: Custom colors as selected by Contracting Officer from manufacturer's quartz aggregate color samples.
2. Aggregate for Abrasive Resistance: Provide aggregate of particle sizes, shape, and minimum hardness as recommended by the resinous flooring manufacturer. Spread aggregate at rate recommended by manufacturer for substrate and service conditions with maximum abrasive content of 10 percent.

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Physical Properties: Provide flooring system in which physical properties of topping including aggregate, when tested in accordance with standards or procedures referenced below, are as follows:

1. Compressive Strength (ASTM C 579): 6,000 psi.
2. Tensile Strength (ASTM C 307): 1,500 psi.
3. Flexural Modulus of Elasticity Strength (ASTM C 580): 500,000 psi.
 4. Water Absorption (ASTM C 413): 1.0 percent max.
5. Coefficient of Thermal Expansion (ASTM C 531): 0.00004 inch per inch times deg F.
 6. Slip Resistance: (ASTM C 1028): 0.5.
 7. Indentation (MIL-D-3134): 7.0 percent maximum.
8. Flammability (ASTM D 635): Self extinguishing; extent of burning 0.25-inch max.
9. Abrasive Resistance (ASTM D 1044, 1000 Grams, 1000 Cycles): 0.10 grams max.
10. Impact Strength (MIL-D-3134); No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation.
 11. Wear Resistance (ASTM D 1242 method A): 0.150 inch.
 12. Resistance to Elevated Temperature (MIL-D-3134): No slip or flow more than 1/16-inch.

Chemical Resistance: Test specimens of cured resinous flooring to be unaffected in the following reagents when tested according to ASTM C 267 for immersion for not less than 7 days:

1. Acetic acid (5%)
 2. Ammonium hydroxide (10%)
 3. Citric acid (50%)
 4. Cola
 5. Syrup
 6. Fatty acid
 7. Motor oil (20W)
 8. Hydrochloric acid (10%)
 9. Salt water
 10. Sodium hydroxide (10%)
 11. Sulfuric acid (10%)
 12. Trisodium phosphate 5%
 13. Ethyl alcohol (95%)
 14. Mineral spirits
 15. Nitric acid (10%)
 16. Urine"

9) Page 13920-12, Paragraph 2.9.1: Revise second sentence of paragraph as follows: "Controller shall be designed for 30HP or as required by motor size of specified fire pump. Voltage at fire pump shall be at 480 volts and shall be service entrance labeled. Controller shall have a short circuit rating....."

10) Page 16403-5: Add following new paragraphs:

"2.3.5 Solid State Metering

In addition to providing for metering utility company, provide metering for the customer (Owner). Customer metering shall be located in either the utility metering section or the tap section. Customer metering shall be solid state device suitable for two-way communication with remote master control unit. Provide a digital Line Metering and Protection system (SSM) having the features and functions specified below. The contractor shall provide a turn-key installation in respect to the solid state meter

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connections to bring all meters functionally on line. Device shall be UL recognized, CSA certified and also meet IEEE C37.90.

2.3.5.1 Monitoring Functions

The device shall provide direct reading metered or calculated values of the items listed below and shall automatically range among Units, Kilounits, and Mega-units for all metered values. Accuracy indicated below to be of read or calculated values.

AC Amperes in each Phase, 1% accuracy.

AC voltage, Phase-to-Phase, Phase-to-Neutral, 1% accuracy.

Watts, 2% accuracy.

Vars, 2% accuracy.

Power Factor, 4% accuracy.

Frequency, 0.5% accuracy.

Watt Demand (5, 10, 15, 30 minute interval programmable or from utility synchronizing pulse) 2% accuracy.

Watt Hours, 2% accuracy.

2.3.5.2 Inputs

Input ranges of the device shall accommodate external current transformers with ranges from 100/5 through 5000/5 amperes. Provide three external current transformers sized for incoming service. Potential transformers shall be self included and fused up to 600 volts with potential connections suitable for 460/575 volt.

2.3.5.3 Outputs

Provide a separate Form C (NO/NC) contact to provide a kilowatthour pulse output. KW/pulse shall be field programmable.

2.3.5.4 Display Screen

The display face shall be membrane type and rated suitable for Type 3R and Type 12 mounting in accordance with NEMA ICS 6. The device shall have a durable six digit LED display screen.

2.3.5.5 Operating and Construction Features

The device shall have an operating temperature range of 0 degrees C to 70 degrees, and 0 to 95% relative humidity noncondensing.

- a. The device shall allow the user to disable undesired values/functions and to later reactivate them if required. A neutral terminal shall be provided and wired for 4 wire, grounded systems. Three in-line fuses shall protect the device from current overloads.
- b. The device shall have the capability for resetting both watthours and watt demand. The device shall also be capable of being remotely reset via its communication port.
- c. Control power shall be drawn from the monitored incoming AC line terminal connections.

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- d. The device shall have non-volatile memory and not require battery backup; in the event of a power failure, the device shall retain all pre-set parameters, accumulated wathours, watt demand. Data at time of power loss shall be stored.”

“2.3.6 Instrument Transformers

ANSI/IEEE C57.13, as applicable.

2.3.6.1 Current Transformers

Transformers shall be single ratio, 60 hertz, rating as indicated.

2.3.6.2 Potential Transformers

Transformers shall be 60 hertz with voltage rating and ratio coordinated to the rating of the associated switchboard meters and instruments. Potential transformers shall be with one fuse in the primary. Fuses shall be sized as recommended by the potential transformer manufacturer.”

“2.3.7 Ground Fault Protection of Equipment for Switchboards

Provide ground fault protection in accordance with UL 1053 consisting of current transformers and fault protection relays with time delay suitable for protecting circuit components against phase to ground faults. The relay shall be time delay type and have continuously adjustable current pickup settings of 100 to 1200 amperes and continuously adjustable time delay setting from 0.1 to one second. It shall provide two independent output contacts each rated 5 amperes continuous and 30 amperes inrush at 120/208 volts ac. The relay shall include a memory function to recognize and initiate tripping on intermittent ground faults.”

11) Page 16415-11, Paragraph 2.4: Substitute “120/208 volts rms or 277/480 volts rms, as appropriate to the system voltage of switchboard or panelboard, operating voltage;” for “120/208 volts rms, operating voltage;”.

12) Page 16710-14, Paragraph 3.1.3.2: Delete this paragraph entirely, including its subparagraphs.

13) Section 16720N: Add this new section, attached to this Amendment. Add also to Project Table of Contents.

14) Page 16711-2, Paragraph 2.3: Substitute “ROUTERS” for “ROUTER”. Add this sentence to the end of the paragraph: “Cisco 3725 Router (voice over internet protocol access server) capable of connecting the school to an incoming Telephone Company T1 line.”

DRAWINGS:

15) Sheet A-3.8: Delete Note 4 at frame SF-5.

16) Sheet A-3.11: Detail D5 – Revise Note 1 as follows: “Signs shall be provided and installed by the Contractor.”

17) Sheets A-9.1 thru A-9.6: Revise General Furniture and Equip. Note 10 to reference Specification Section 06410A and Note 11 to reference Specification Section 06415.

18) Sheet S-1.1:

- a) In Section T. “Masonry”, add the following note: “All below grade masonry walls to be grouted solid. All collar joints to be grouted solid.” This applies to all foundation sections in the construction set.
- b) In Section G. “Submittals”, add

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11. * MOMENT CONNECTIONS

19) Sheet S-1.2: In Section W. “Structural Steel, in the next to last paragraph, add the following sentence. “A minimum 2 bolt connection, or 18 kip capacity is required at all connections. Design connections for the worst case – the 18 kip minimum or the design end reaction as noted above, unless otherwise noted on the drawings.” Additional end reactions for three beams on S-4.1 and for two beams on S-5.1, which exceed the 18 kip minimum, will be identified in the conformed set.

20) Sheet S-2.2: On detail 4/S-2.2, indicate the following: “Isolation joint with 30# felt paper (typ.)”

21) Sheet S-2.3:

a) On detail 4/S-2.3, delete note reading “Full height pre-formed control joint gasket” and substitute with “Control joint per specifications.”

b) On detail 14/S-2.3, modify note as follows:

“This detail is applicable to all concentrated loads exceeding 50 pounds that are attached to joist(s) whether

c) On detail 9/S-2.3, modify note as follows:

Connections shall have a minimum capacity for the reactions shown (in kips). In no case shall this capacity be less than ½ load tabulated in AISC tables, or 18 kips. Reactions are each end, u.n.o.

22) Sheet ED1.3: Revise this sheet in accordance with the attached Sketch SK-E-1, dated 5/05/03.

23) Sheet E1.3: Revise this sheet in accordance with the attached Sketch SK-E-2, dated 5/05/03.

24) Sheet E2.2: Revise this sheet in accordance with the attached Sketch SK-E-3, dated 5/05/03.

25) Sheet E2.3: Revise this sheet in accordance with the attached Sketch SK-E-4 dated 5/05/03

26) Sheet E2.6: Revise this sheet in accordance with the attached Sketch SK-E-5 dated 5/05/03.

27) Sheet E3.3: Revise this sheet in accordance with the attached Sketch SK-E-6 dated 5/05/03.

28) Sheet E3.6: Revise this sheet in accordance with the attached Sketch SK-E-7 dated 5/05/03.

29) Sheet E4.1: Revise this sheet in accordance with the attached Sketch SK-E-8 dated 5/05/03

30) Sheet E5.4: Revise this sheet as follows.

a) Delete Detail 2, TELEPHONE SYSTEM RISER DIAGRAM.

b) Modify Detail 1, DATA SYSTEM RISER, as follows.

i) Change title to DATA AND TELEPHONE SYSTEMS RISER

ii) Show an RJ-45 voice port adjacent to each RJ-45 data port. The symbols are identical except that the voice port symbol is filled in solid black. Each voice port symbol shall be shown connected to the CAT 5E patch panels with a 4-pair UTP CAT 5E cable, just as the data port symbols are.

iii) Change the word “ROUTER” to “ROUTERS”.

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iv) Show the routers connected to the incoming service from the Telephone Company, consisting of one T1 line for data, one T1 line for voice, and ten analog telephone lines for voice.

v) Add three RJ-45 voice-ports, with a home run tagged with specific note 1. Label the three port symbols "ELEVATOR MACHINE ROOM", "FACP", and "IDS LINE". Locate the port symbols in the Area A half of the diagram, on the lower level, main level, and upper levels respectively.

vi) Show a CAT 5E 25-pair trunk line run from the Head End Room CAT 5E patch panel to the CAT 5E patch panels in each of the three wiring closets: A126, B109, and B234. These three cables will allow any voice port (such as one for a fax machine) to be connected to one of the incoming analog telephone lines without going through the Voice-Over-Internet Protocol system.

c) Delete specific notes 2,3, and 4. Replace specific note 1 with "CAT 5E CABLE TO HEAD END ROOM A305 FOR DIRECT CONNECTION TO DEDICATED ANALOG PHONE LINE".

31) Sheet E5.5: Revise this sheet as follows:

a) In Detail 1, change "DATA RACK" to "PATCH PANEL" in the three places the phrase appears.

b) In Detail 1, change "110 TELEPHONE PUNCH DOWN BLOCK" to "PATCH PANEL" in the two places it appears.

c) In Detail 1, add one more RJ-45 port to the COMBINATION VOICE AND DATA OUTLET with a home run shown and noted as a 4-PAIR CAT 5E TO PATCH PANEL.

d) Change the title of the "Data Outlet" faceplate to "Data Outlet or Telephone Outlet". Add the telephone CNO symbol next to the data CNO symbol.

32) Sheet E5.6: Revise this sheet in accordance with the attached Sketch SK-E-9 dated 5/05/03.

33) Sheet E6.2: Revise this sheet in accordance with the attached Sketches SK-E-10 and SK-E-11 dated 5/05/03.

34) Sheet E7.5: Revise this sheet in accordance with the attached Sketch SK-E-12 dated 5/05/03.

ATTACHMENTS:

1. Revised Price Schedule, dated May 05, 2003.
2. Submittal register for Section 16720N.
3. New Section 16720.
4. Sketches SK-E-1 thru SK-E-12, dated 5/5/03.

PART I – THE SCHEDULE
SECTION 00010 – SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

REVISED MAY 05, 2003

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	PRICE	AMOUNT
BASE BID ITEMS					
0001	All costs in connection with construction of the new addition to and renovation of Luke C. Moore Academy High School including sitework and utilities; complete as shown on drawings and specified, but exclusive of work covered under Base Bid Items 0002 through 0005 and Optional Bid Items 0006 through 0025 below.	---	JOB	LS	\$ _____
0002	Overexcavation / Export (Payment Item No. 02300-1 as specified in Section 02300)	5250	CY	\$ _____	\$ _____
0003	Import Structural Fill (Payment Item No. 02300-2 as specified in Section 02300)	520	CY	\$ _____	\$ _____
0004	Replacement and Repointing of Masonry Jointwork (as specified in Section 04900)	5000	LF	\$ _____	\$ _____
0005	Masonry Repair with patch anchors (as specified in Section 04900)	250	SF	\$ _____	\$ _____
TOTAL ESTIMATED BASE BID AMOUNT					\$ _____

PART I – THE SCHEDULE
SECTION 00010 – SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

REVISED MAY 05, 2003

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	PRICE	AMOUNT
OPTIONAL BID ITEMS					
0006	All costs associated with providing integrated voice and data systems, complete as shown on drawings and specified in Sections 16710, 16711 and 16720N.	---	JOB	LS	\$_____
0007	All costs associated with providing stage lighting, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0008	All costs associated with providing back-up oil system for boilers, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0009	All costs associated with providing site sign, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0010	All costs associated with providing carpet in lieu of VCT, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0011	All costs associated with replacing all existing sidewalk, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0012	All costs associated providing additional landscaping, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0013	All costs associated with providing windows and wells on West Elevation and at Courtyard, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0014	All costs associated with providing ceramic tile to 6'-8" on all toilet room walls and ceramic tile floors at toilet rooms, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0015	All costs associated with providing fuel oil tank for generator, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0016	All costs associated with providing metal shelving, complete as shown on drawings.	---	JOB	LS	\$_____

PART I – THE SCHEDULE
SECTION 00010 – SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

REVISED MAY 05, 2003

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	PRICE	AMOUNT
0017	All costs associated with providing terrazzo tile in lieu of VCT, complete as shown on drawings and specified.	--	JOB	LS	\$_____
0018	All costs associated with providing birch veneer plywood in lieu of gypsum board at detail B1, B2, B4/A-5.7, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0019	All costs associated with providing hinged light poles on exterior light fixtures, complete as indicated on drawings and specified.	---	JOB	LS	\$_____
0020	All costs associated with providing electronic plumbing fixture trim, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0021	All costs associated with providing fountain in LobbyA23, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0022	All costs associated with providing gas fireplace in Lobby A23, complete as shown on drawings and specified.	---	JOB	LS	\$_____
0023	All costs associated with the installation only of theater chairs, as shown on drawings and specified in Section 12600.	---	JOB	LS	\$_____
0024	All costs associated with the installation only of gymnasium bleachers, as shown on drawings and specified in Section 11490.	---	JOB	LS	\$_____
0025	All cost associated with providing additional casework as shown on drawings and specified.	--	JOB	LS	\$_____
TOTAL ESTIMATED BASE AND OPTIONAL BID AMOUNT					\$_____

PART I – THE SCHEDULE
SECTION 00010 – SUPPLIES OR SERVICES AND PRICES

REVISED MAY 05, 2003

NOTES TO OFFERORS

Offerors must quote on all items including Optional Items. Failure to quote on all items may be cause for rejection of the proposal.

Optional Items may be exercised at any time within 540 calendar days after contract award. The Contracting Officer may exercise the Optional Items by written notice to the Contractor, postmarked within the period specified above. The Government may exercise any, all or none of the listed Optional Items in any order.

No additional time for contract completion will be allowed when an Optional Item is exercised.

VARIATION IN ESTIMATED QUANTITIES: If the quantity of a unit-price item in this contract is an estimated quantity and the actual quantity of the unit-price item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgment of the Contracting Officer, is justified. (FAR 52.211-18 APR 1984)

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

Luke C. Moore Academy

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY				REMARKS		
						DATE FWD TO APPR AUTH/	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	DATE OF ACTION	DATE OF ACTION	DATE OF ACTION	DATE OF ACTION				
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
	16720N		SD-02 Shop Drawings														
			Telephone system installation drawings	1.5.2	G AE												
			SD-03 Product Data														
			Digital switching system	2.2	G AE												
			Cables		G AE												
			Connector blocks		G AE												
			Terminal blocks		G AE												
			Instruments		G AE												
			Features	2.6	FIO												
			SD-06 Test Reports														
			Test procedures and reports	3.4.2	FIO												
			Test plan		G AE												
			SD-07 Certificates														
			Installer's qualifications	1.5.1.1	G AE												
			Instructor's qualifications	1.5.1.2	G AE												
			SD-08 Manufacturer's Instructions														
			Installation procedures	1.5.4	G AE												
			SD-10 Operation and Maintenance Data														
			Telephone distribution system operation and maintenance data	1.3	G AE												

SECTION 16720N

ADMINISTRATIVE TELEPHONE EQUIPMENT, INSIDE PLANT

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. FEDERAL COMMUNICATIONS COMMISSION (FCC)

FCC Part 68 (1986) Rules and Regulations: Connection of Terminal Equipment to the Telephone Network

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

1.2 RELATED REQUIREMENTS

Section 16050N, "Basic Electrical Materials and Methods," applies to this section, with the additions and modifications specified herein.

1.3 SYSTEM DESCRIPTION

Telephone distribution system shall consist of voice switching equipment, inside plant cables, voice instruments, power equipment and batteries, telephone management system, and other auxiliary equipment. System shall be directly connected to public switched network in accordance with the rules set forth by FCC Part 68, and other appropriate authorities such as Public Utilities Commission and local telephone company.

1.4 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Telephone system installation drawings; G AE

SD-03 Product Data

Digital switching system; G AE

Cables; G AE

Connector blocks; G AE

Terminal blocks; G AE

Instruments; G AE

Features

SD-06 Test Reports

Test procedures and reports

Test plans; G AE

SD-07 Certificates

Installer's qualifications; G AE

Instructor's qualifications; G AE

SD-08 Manufacturer's Instructions

Installation procedures; G AE

SD-10 Operation and Maintenance Data

Telephone distribution system, Data Package 5; G AE

Submit operation and maintenance data in accordance with Section 01781, "Operation and Maintenance Data."; G AE

1.5 QUALITY ASSURANCE

1.5.1 Evidence of Experience and Qualifications

1.5.1.1 Installer's Qualifications

Show that the installer who will perform the work has a minimum of 2 years experience successfully installing telephone distribution system of the same type and design as specified herein. Include the names, locations, and point of contact of at least two installations of the same type and design as specified herein where the installer has installed such systems. Indicate type of each system and certify that system has performed satisfactorily in the manner intended for a period of not less than 12 months. Submit data of installer's experience and qualifications.

1.5.1.2 Instructor's Qualifications

Show that the instructor, who will train operation and maintenance personnel, has a minimum of 24 hours training from a recognized technical organization, and 2 years experience in installation of telephone distribution system of the type specified. Submit data of the instructor's experience and qualifications.

1.5.2 Telephone System Installation Drawings

Submit shop drawing complete with wiring and schematic diagrams, and other details required to demonstrate that system has been coordinated and will properly function as a unit. Drawings shall show proposed layout and anchorage of equipment and appurtenances, equipment relationship to other parts of the work including clearances for operations and maintenance, and terminal assignment of inside wiring.

1.5.3 Test Plans

Submit for approval at least 30 days prior to commencement of formal operational testing a test plans specified in paragraph entitled "Field Quality Control."

1.5.4 Installation Procedures

Where installation procedures, or any part thereof, are required to be in accordance with manufacturer's instructions, submit these instructions to the Contracting Officer prior to installation of the equipment.

1.6 DELIVERY AND STORAGE

Provide protection from weather, humidity and temperature variations, dirt, dust, and other contaminants for equipment placed in storage.

1.7 SITE CONDITIONS

1.7.1 Environmental Requirements

Install equipment indoors in a protected environment. Electronic equipment designed for office environment shall be rated for continuous operation under ambient environmental conditions of 50 degrees F to 85 degrees F and 35 to 65 percent relative humidity, noncondensing.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Material and equipment shall be the standard products of a manufacturer regularly engaged in manufacture of the products and shall be the manufacturer's latest standard design.

2.2 DIGITAL SWITCHING SYSTEM

Provide equipment consisting of stored program, processor controlled "voice over internet protocol" architecture.

2.2.1 Telephone Equipment

Provide Cisco brand telephone equipment necessary for a complete installation. Equipment shall work with the equipment specified in sections 16710: Telephone and Data Distribution System and 16711: Switches and Routers, to provide the Owner with a complete "voice over internet protocol" system. Equipment to be provided shall include but is not limited to the following:

- one VG248 Analog Phone Gateway
- one MCS 7815-1000 Media Convergence Server
- one 3725 router with ability to connect to an incoming T1 line.
- one Cisco Conference Connection SW-CCC-V12

Provide licenses and software required.

2.2.2 Switching Network

Switch shall be a stored program, processor controlled PCM system utilizing solid state construction. Switching network shall be of modular type construction to allow additions to the network or system without interruptions or down time to the system.

2.2.3 Processor

Switching network and other associated functions of the system shall be under the control of a single central processor utilizing stored program control. Stored system control program shall automatically reprogram and restart the system in the event of power failure. Programs which control functions of the user system shall utilize language which is oriented toward a person-machine interface.

2.2.3.1 Control Programs

Control programs such as trunk routing, digit sending and receiving, and assigning trunk quantities shall be locally or field programmable by means of an interface with a terminal. Programs shall be flexible to the extent that line assignment and class of service type changes can be made in the field by way of this terminal interface.

2.2.3.2 Maintenance Diagnostic Program

Provide system with maintenance diagnostic program for complete system tests. Program shall be in continuous operation and structured so that any fault that is detected is immediately printed out on a maintenance terminal or indicated on a cathode ray tube (CRT). Diagnostic tests that contain no-fault conditions shall be printed out during specified times of day or upon demand. Program shall be integrated into the processor control system so that when faults are registered an automatic transfer of equipment will take place within the system to remedy a fault condition. Automatic transfer of equipment to remedy a fault condition is required only for equipment that would affect a common control portion of the switching system. Diagnostic and maintenance program shall be accessible by way of field located maintenance terminal.

2.3 HARDWARE REQUIREMENTS

2.3.1 Equipment Mounting Cabinets

Provide modular type cabinets to house the processor, lines, trunks, and miscellaneous items. Height of cabinets shall not exceed 8 feet including cable trays. Equip cabinets with front covers which are easily opened or removed.

2.3.2 Numbering Plan

Provide a flexible numbering plan that will allow for numbers to be changed via terminal interface. Numbering plan for the system shall consist of seven-digit numbers.

2.3.2.1 Dialing Plan

Assign Direct Inward Dial (DID) stations with seven-digit numbers for public directory lists. Calls within the system shall be accessed by dialing the last three or four digits of the listed station number. Calls to stations outside the system shall be completed by dialing.

2.3.2.2 Translation Functions

System software shall have the capability to prefix at least three digits or delete at least three digits from the originating and terminating trunk.

2.3.2.3 Subscriber Data Base

Contractor shall gather, develop, and load the subscriber data base. Assignment of class of service and associated features and capabilities shall be subject to approval by the Contracting Officer.

2.4 DIRECT DIGITAL INTERFACE

System shall interface directly with tie trunks on T1 carrier without the use of channel banks. System shall be equipped with a synchronous clock for interfacing with other digital switching equipment on a direct digital basis. Clock shall be stable to no more drift than one bit in 10 to the 8th power per day.

2.5 TELEPHONE MANAGEMENT SYSTEM (TMS)

System shall provide records for later retrieval of the number of the calling line, access code, all digits of the called number, date, starting time and duration of all outward calls to the public switched service network. System shall also provide off-line storage. Provide console printer for exclusive use of the TMS.

2.5.1 Summary and Detail Reports

The following shall be available from internal report generators:

<u>Station</u>	<u>Department</u>	<u>Division</u>
Single station	Single department	Single division
All station	All department	All division
Selectivity for Date, Trunk Groups and Time of Day	Selectivity for Date, Trunk Groups and Time of Day	Selectivity for Date, Trunk Groups and Time of Day

2.5.2 Call Tracing

The TMS shall have specified software requirements that shall allow for the tracing of calls made within the particular EPABX area. All DCO or external call tracing shall be coordinated with responsible personnel at the DCO or local telephone company.

2.6 FEATURES

2.6.1 System Features

Include the following as minimum into the basic system:

- a. Alternative routing providing for automatic selection of alternate trunk group if all trunks in the first-choice group are busy.
- b. Common control switching arrangement (CCSA) providing access for private network services.
- c. Direct inward dialing providing incoming call to directly access a telephone station.

- e. Direct outward dialing providing extension to access trunk groups directly.
- f. Distinctive ringing providing identification of incoming calls as external, intrasystem, or feature by the type of audible signal provided to the station.
- g. Full availability providing all stations, unless restricted, availability to all lines, trunks, and features.
- h. Paging system providing interface via subscriber circuits. Access to paging system shall be by code dialing.
- i. Least cost routing providing outgoing calls to be automatically routed over the trunk groups that provide the least cost service.
- j. Call conferencing providing attendant the capability to establish up to 6 parties (including trunk circuits) per conference, with up to 3 conferences in progress simultaneously.
- k. "Meet me" conference circuit providing a single-digit access code. Any stations dialing that code at a predetermined time, or upon direction by the attendant, shall be connected in conference.
- l. Station Message Detail Recorder port providing capability for printer interface.

2.6.2 Stations

Provide one Cisco 7910G phone for each type T Communications Network Outlet (CNO). Provide one Cisco 7910G phone for each temporary classroom in the gymnasium. Provide one Cisco 7960 phone for each of the following rooms: Recept./Admin. Asst. A212, Principal A208, Business Manager A209, and Main Office Reception B213. Provide one Cisco 7940G phone for each other room containing at least one telephone outlet or type A CNO. For each telephone wall outlet, provide one Cisco 7910G phone with a locking wall mount bracket number CP-LCKNG-WALLMOUNT.

2.6.3 Power Supplies

Provide a power supply for each telephone.

PART 3 EXECUTION

3.1 INSTALLATION

Install system components and appurtenances in accordance with manufacturer's instructions and NFPA 70. Provide necessary interconnections, services, and adjustments required for a complete and operable telephone distribution system.

3.2 INTERIOR WIRING

Install interior electrical work for telephone distribution system as specified in Section 16710, "Telephone and Data Distribution System."

3.3 GROUNDING

Provide copper ground bus for equipment ground. Total ground resistance

shall be 5 ohms or less.

3.4 FIELD QUALITY CONTROL

Furnish test equipment, instrumentation, personnel, and supplies necessary to perform all testing. Contracting Officer shall be given 5 working days notice prior to each test.

3.4.1 Test Plans

Develop a test plans defining all tests required to ensure that system meets technical, operational, and performance specifications. Plans shall define milestones for each test, equipment, personnel, facilities, and supplies required. Plans shall identify the capabilities and functions to be tested.

3.4.2 Test Procedures and Reports

Develop test procedures from the test plan and design documentation. Procedures shall consist of detailed instructions for the best setup, execution, and evaluation of the tests. Procedures shall consist of visual inspection, basic system operation, trunk call-through, station feature operations, attendant console verification, and maintenance and administrative operations. Visual operations can begin at any period during installation and are used to list all newly installed equipment. Submit reports to the Contracting Officer within 7 working days after completion of each test.

3.4.2.1 Basic System Tests

Tests shall verify that basic types calls can be made and to ensure confidence in system operations. Selected lines shall be verified to receive dial tone, receive ringback tone, talk to the called line, receive ringing, and trip ringing as required.

3.4.2.2 Trunk Call-Through Tests

Verify all trunk groups can be accessed as required, and that trunks interface properly with connecting system.

3.4.2.3 Station Feature Tests

Verify that the equipped station and system features function as required. Tests require the use of several telephones with each being assigned classes of service to verify the appropriate feature.

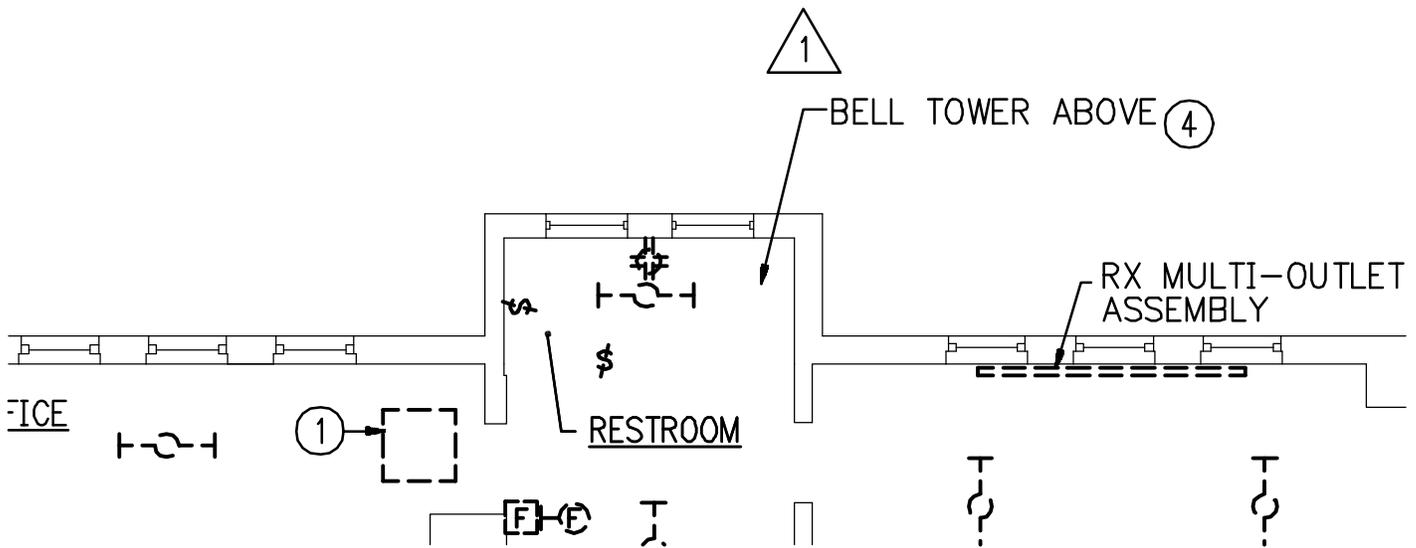
3.4.2.4 Attendant Feature Tests

Verify that all attendant features function as required. Tests require that several calls be placed to and from attendant console from local stations, to attendant console from incoming trunks, and from attendant console to outgoing trunks.

3.4.2.5 Maintenance and Administrative Tests

Verify that all maintenance and administrative operations can be accomplished as specified.

-- End of Section --



SPECIFIC NOTES:

- ① ACCESS TO ATTIC. REMOVE WIRING IN ATTIC UNLESS OTHERWISE NOTED. △ 1
- ② REMOVE EXISTING INTERCOM DEVICES AND WIRING BACK TO SOURCE.
- ③ REMOVE EXISTING BELL TOWER MUSIC SYNTHESIZER. SAVE FOR REUSE. REMOVE SOUND WIRING BACK TO BELL TOWER AND SAVE FOR REUSE. △ 1
- ④ PROTECT BELL TOWER SOUND SYSTEM DURING CONSTRUCTION.

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: ED1.3

SCALE: 1/8" = 1'-0"

DATE

05/05/03

AMENDMENT

SK-E-1



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Fax 703.903.9755

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Fax 901.625.0089

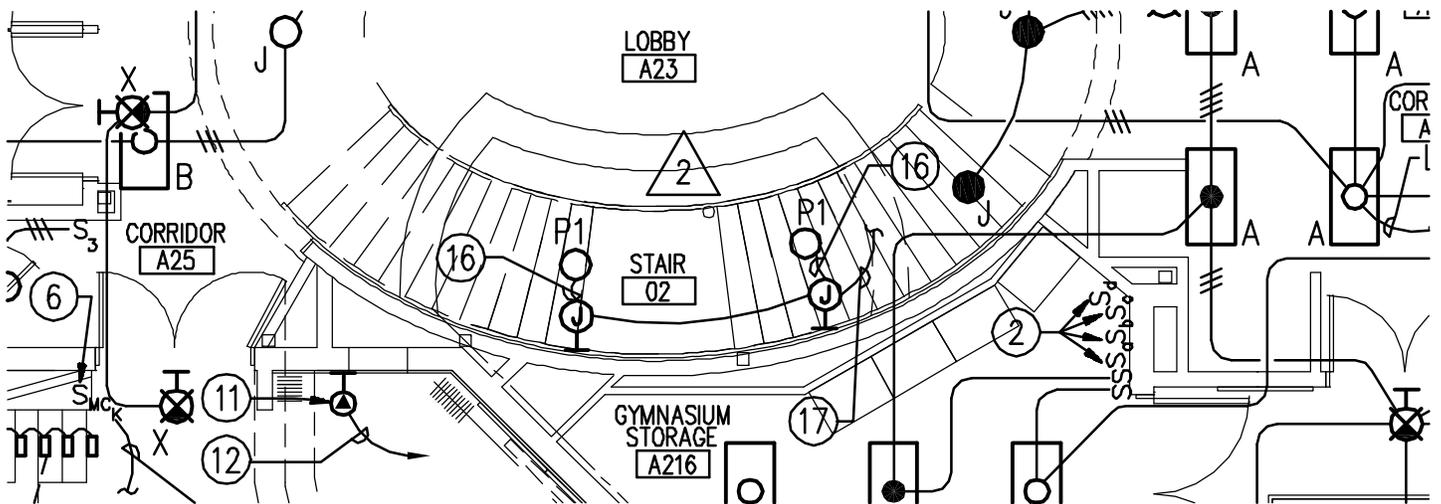
△ 2 B. WORK ASSOCIATED WITH TYPE P1 LIGHT FIXTURES IS INCLUDED IN "FOUNTAIN WITH NATURAL STONE FACING" OPTIONAL BID ITEM.

①6 CONNECT TO JUNCTION BOX VIA SUBMERSIBLE CORD INCLUDED WITH LIGHT FIXTURE. SEE DETAIL

7
E6.2

△ 2

①7 SEE E2.3 FOR CONTINUATION.



LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E1.3

SCALE: 1/8"=1'-0"

DATE

05/5/03

AMENDMENT

SK-E-2

GRIMM+
PARKER
ARCHITECTS

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Suite 1350
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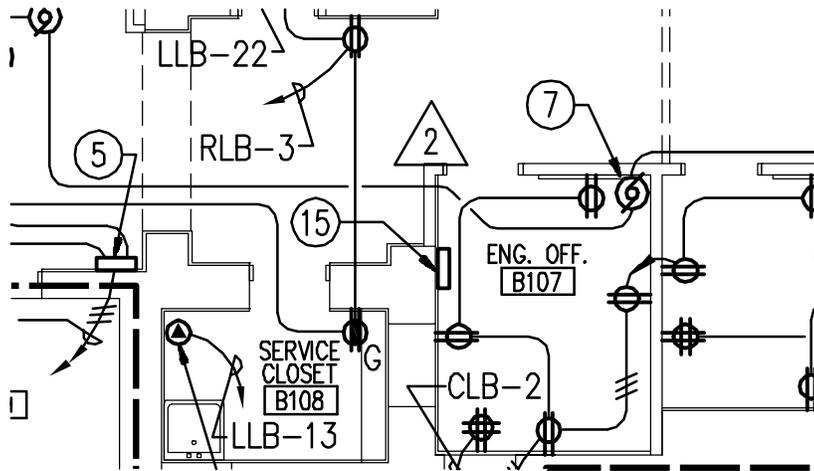
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Tel 301.555.1000
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⑭ COMBINATION NEMA SIZE 1 MOTOR STARTER/30A FUSED DISCONNECT. PROVIDE FUSES PER EQUIPMENT NAMEPLATE.

△ ⑮ GENERATOR REMOTE ALARM PANEL. SURFACE MOUNT 5'-0" ABOVE FLOOR. PROVIDE 1" CONDUIT AND WIRING AS REQUIRED TO ORIGINAL LOCATION OF PANEL, IN ROOM B101. SPLICE CONDUCTORS TO EXISTING CONDUCTORS IN JUNCTION BOX AS REQUIRED FOR PANEL OPERATION.



LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E2.2

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

SK-E-3

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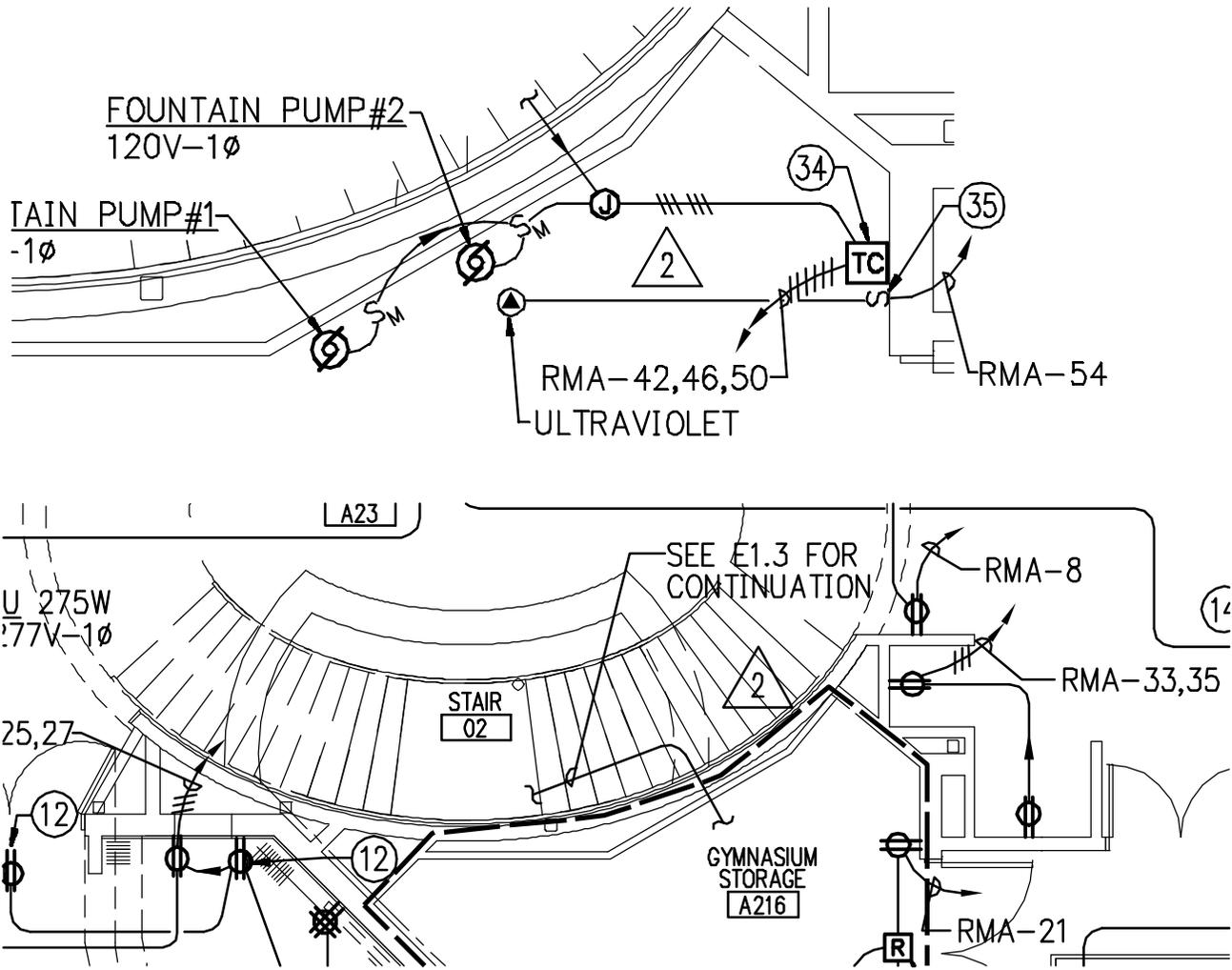
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Tel 301.555.1000
Fax 301.555.0089



③4 PROVIDE 7-DAY TYPE TIME SWITCH, WITH SELF-STARTING SYNCHRONOUS MOTOR, CAPABLE OF BEING SET FOR DIFFERENT ON-OFF TIMES EACH DAY OF THE WEEK. TIME SWITCH CONTACTS SHALL BE CAPABLE OF SWITCHING 40 AMPS CONTINUOUSLY AT 120 VOLTS AND SHALL BE FOUR-POLE SINGLE-THROW. MOUNT 44" ABOVE FLOOR. LABEL "FOUNTAIN TIMER".



LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E2.3

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

SK-E-4

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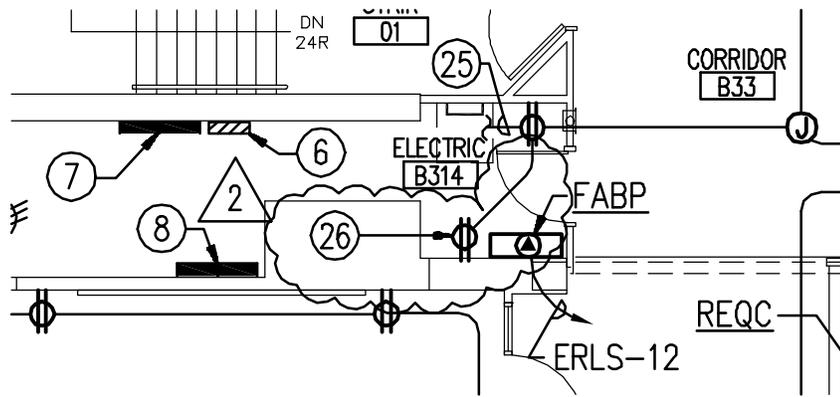
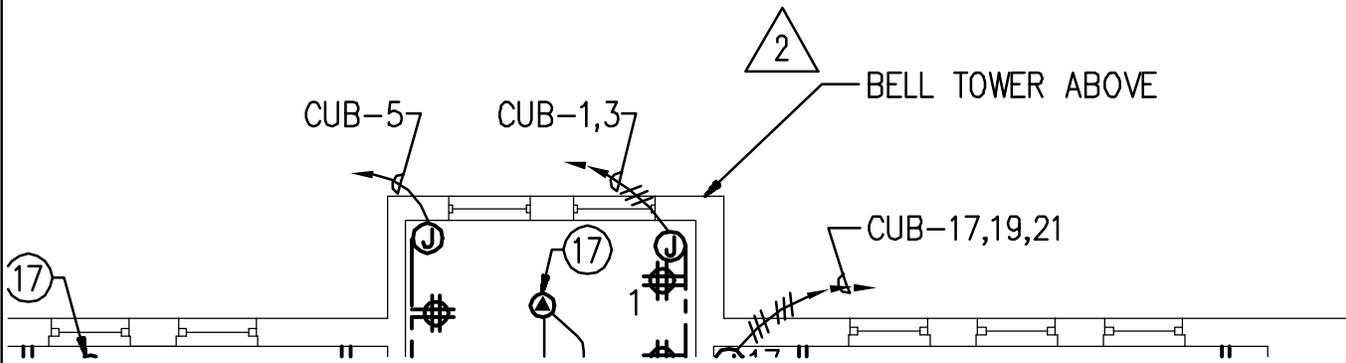
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②④ FASTEN RECEPTACLE SECURELY TO CEILING PIPE GRID. (TYPICAL OF 4)

②⑤ PROVIDE DUPLEX GROUND FAULT CIRCUIT INTERRUPTION RECEPTACLE IN ATTIC ADJACENT TO HATCH. PROVIDE SECOND DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE BY EXISTING TO REMAIN BELL TOWER SOUND SYSTEM.



②⑥ FOR BELL TOWER MUSIC SYNTHESIZER.

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E2.6

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

SK-E-5

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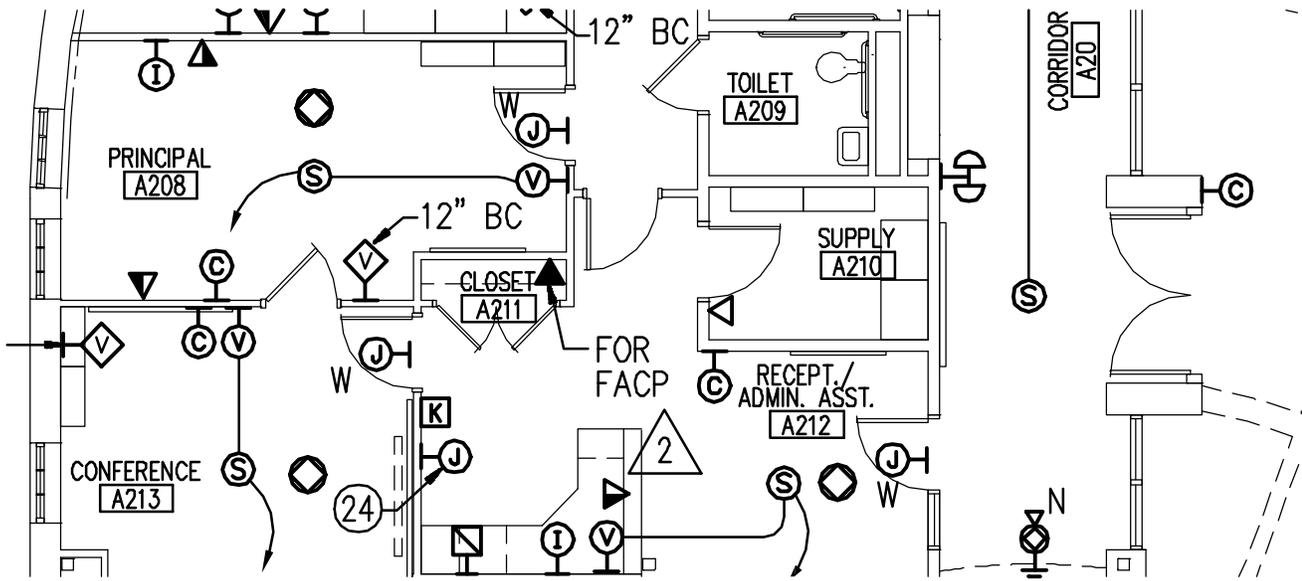
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LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E3.3

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

#

SK-E-6



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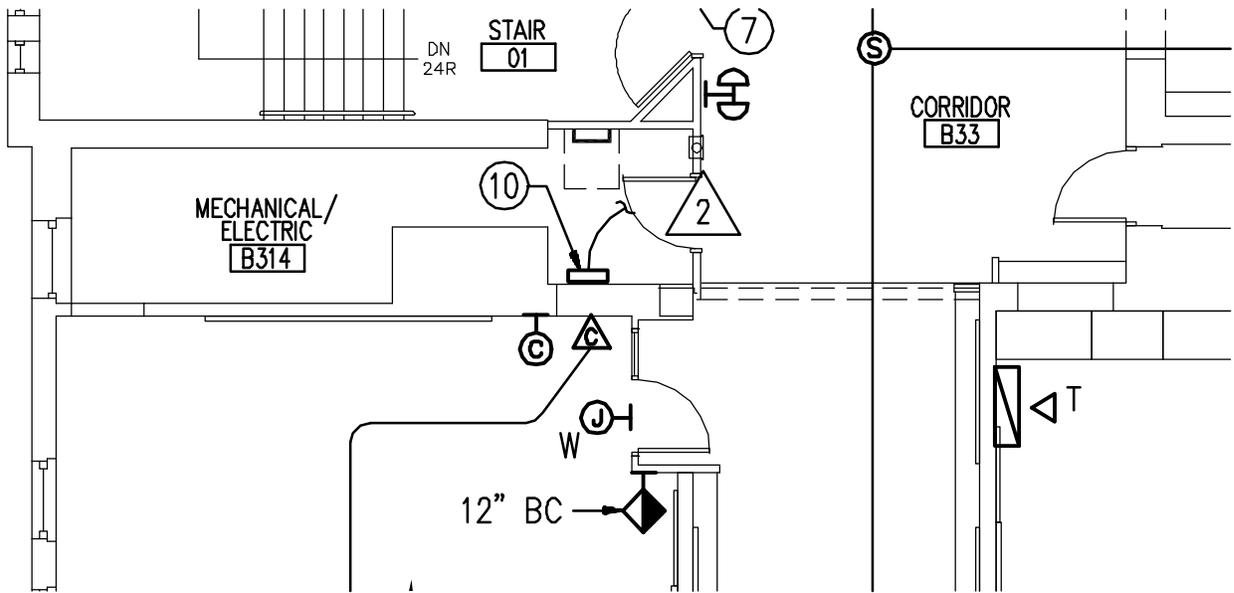
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Fax 301.555.0089



⑨ SET APERTURE TO F2.5



⑩ INSTALL PREVIOUSLY REMOVED BELL TOWER SOUND SYNTHESIZER. PROVIDE SHELF 4'-0" ABOVE FLOOR. REINSTALL CABLE FROM BELL TOWER SOUND SYSTEM TO SYNTHESIZER.

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E3.6

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

SK-E-7

GRIMM+
PARKER
ARCHITECTS

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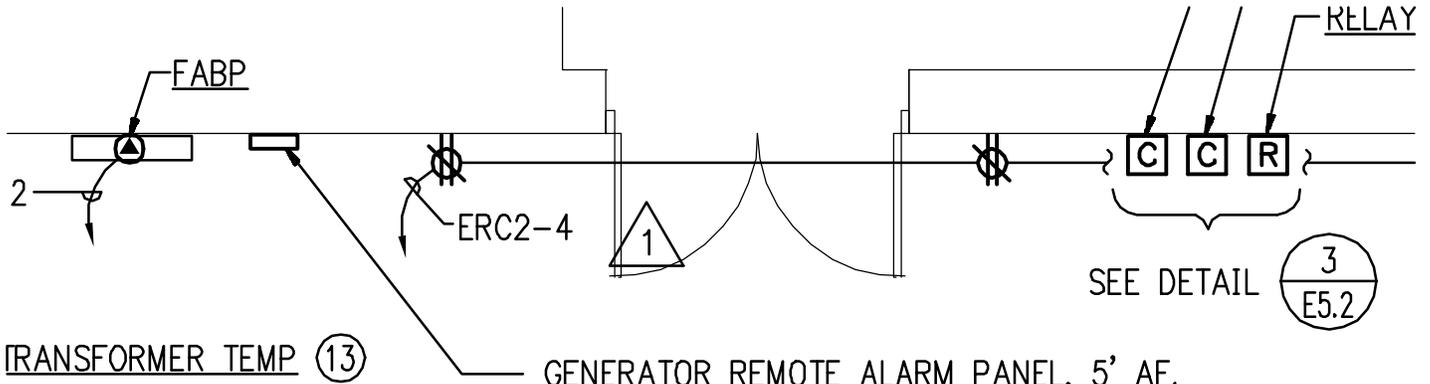
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Tel 301.555.1000
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GENERATOR REMOTE ALARM PANEL, 5' AF.
 INSTALL UNDER PHASE 1 CONSTRUCTION.
 DURING PHASE 2 CONSTRUCTION, REMOVE
 PANEL AND REPLACE WITH JUNCTION BOX.
 REINSTALL PANEL IN ENGINEER OFFICE B107.
 SCHEDULE WORK SO THAT PANEL IS OUT OF
 SERVICE FOR LESS THAN 4 HOURS.

- ③ PROVIDE CAT 5E CABLE TO HEAD END ROOM A305 FOR ELEVATOR CAB PHONE – DEDICATED ANALOG PHONE LINE. △ 1
- ④ LOCKABLE "OFF" BUT NOT "ON".

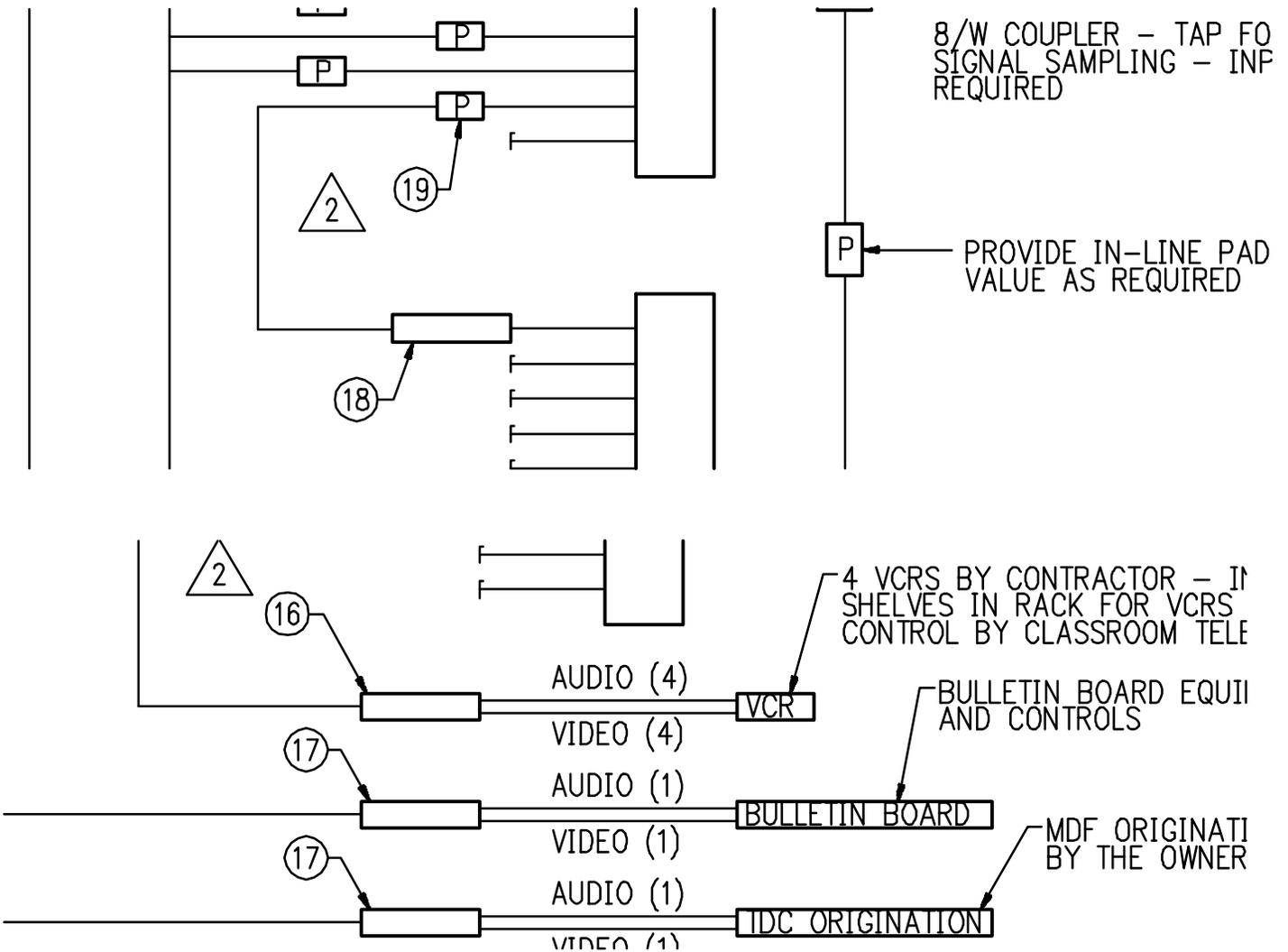
LUKE C. MOORE ACADEMY HIGH SCHOOL	DATE	AMENDMENT
SHEET: E4.1	05/05/03	# SK-E-8
SCALE: 1/8"=1'-0"		



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- ⑩ PROVIDE 4 FREQUENCY AGILE MODULATORS. CORRECT SYSTEM DATA AND ADJUST.
- ⑪ PROVIDE 1 FREQUENCY AGILE MODULATORS. CORRECT SYSTEM DATA AND ADJUST.
- ⑫ PROVIDE CHANNEL 19 – AGILE OUTPUT PROCESSOR. CONNECT INTO SYSTEM AND ADJUST.
- ⑬ PROVIDE IN-LINE PADS AS REQUIRED TO EQUALIZE COMBINER INPUTS – TYPICAL.

2



LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E5.6

SCALE: 1/8"=1'-0"

DATE

05/05/03

AMENDMENT

SK-E-9



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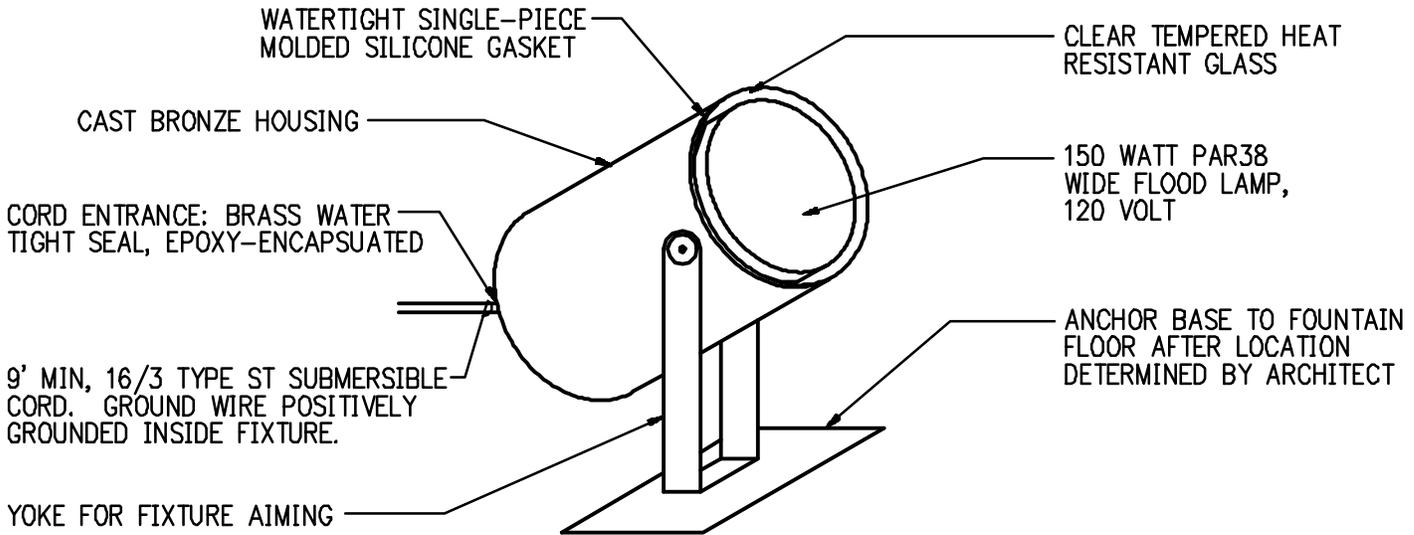
Tel 301.555.1000
Fax 301.555.0089

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	LAMP	VOLT	MOUNTING	NOTES
P	FLUORESCENT JELLY JAR TYPE SF11	(1) 26W	277	SURFACE 78" AF UON	8
P1	INCANDESCENT WET/DRY UNDERWATER FLOODLIGHT	(1) 150W PAR 38	120	SURFACE ON FOUNTAIN FLOOR	16
S	FLUORESCENT SCONCE TYPE WF1	(2) F13 TT/RS	120	WALL	10

15. SEE CONCRETE BASE FOR BOLLARDS AND AUTOMATIC DOOR OPERATOR POST, SHEET E6.1.

16. PROVIDE UNDER OPTIONAL BID ITEM "FOUNTAIN WITH NATURAL STONE FACING".



SOCKET: PORCELAIN MEDIUM BASE WITH NICKEL-PLATED COPPER SHELL, 200°C INSULATED.

PROVIDE TEMPERATURE SENSOR TO DISCONNECT POWER TO LAMP WHEN WATER LEVEL IS TOO LOW TO PROVIDE COOLING.

DETAIL 6
E6.2

UNDERWATER FOUNTAIN FIXTURE
FIXTURE TYPE "Q"
NOT TO SCALE

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E6.2

SCALE: NONE

DATE

05/05/03

AMENDMENT

SK-E-10

GRIMM+
PARKER
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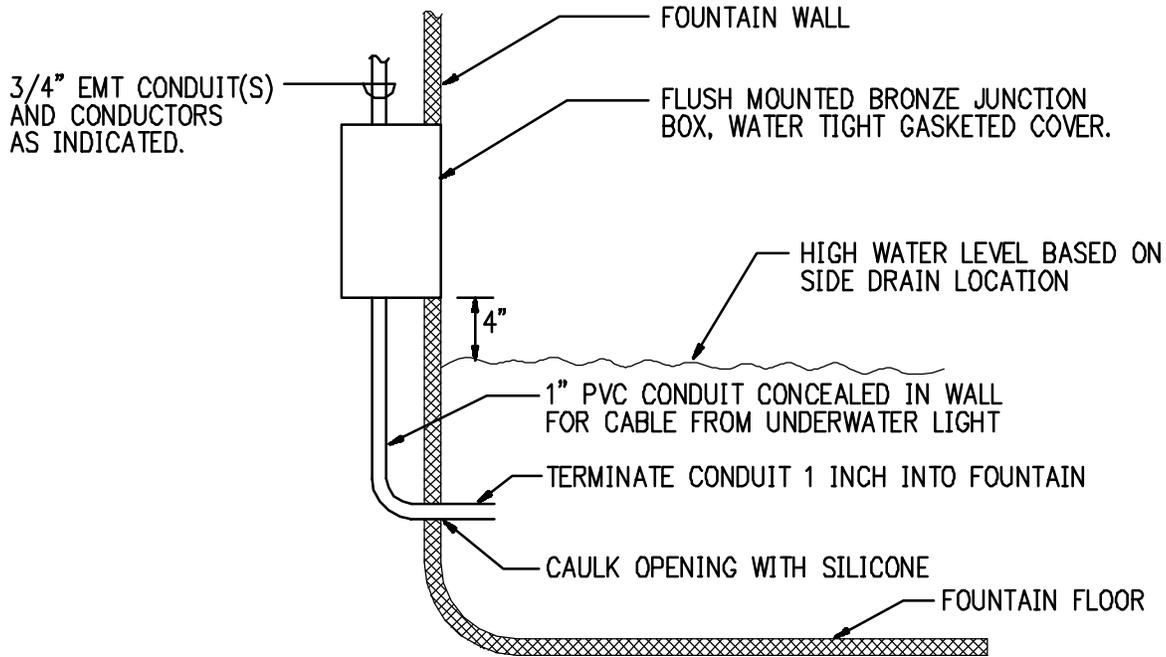
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1 DETAIL 7
E6.2
FOUNTAIN WALL
 NOT TO SCALE

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E6.2

SCALE: NONE

DATE

05/05/03

AMENDMENT

SK-E-11



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Tel 301.595.1000
 Fax 301.595.0089

WIRING PANEL SCHEDULE RMA

120 / 208 VOLTS 3 PHASE 4 WIRE 225 AMP MAINS SURFACE MOUNTED

POLE	DESCRIPTION	WIRE/COND	BREAKER		KVA/Ø			POLE	DESCRIPTION	WIRE/COND	BREAKER		
			POLE	AMP	A Ø	B Ø	C Ø				POLE	AMP	
1	BACKBOARD #1	#10 / 3/4" C	1	20	0.2	0.9		2	CHAIR LIFT	3 #12	3	15	
3	BACKBOARD #2	#10 / 3/4" C	1	20			0.2	0.9	4	-	#12 G	-	-
5	BACKBOARD #3	#10 / 3/4" C	1	20					6	-	3/4" C	-	-
7	BACKBOARD #4	#10 / 3/4" C	1	20	0.2	1.3			8	HALL, CAFETERIA	#12 / 3/4" C	1	20
9	BACKBOARD #5	#10 / 3/4" C	1	20			0.2	0.9	10	CAFETERIA	#12 / 3/4" C	1	20
11	BACKBOARD #6	#10 / 3/4" C	1	20					12	A212, A213	#12 / 3/4" C	1	20
13	GYM		1	20	0.7	1.4			14	A207, A208	#12 / 3/4" C	1	20
15	SCOREBOARD		1	20			1.1	1.3	16	A205, 206, 207	#12 / 3/4" C	1	20
17	SPARE		1	20					18	A202, A204, A209	#12 / 3/4" C	1	20
19	OUTDOOR OUTLETS		1	20	1.3	1.7			20	A203	#12 / 3/4" C	1	20
21	A215, A216		1	20			0.9	1.2	22	WATER COOLER	#12 / 3/4" C	1	20
23	RECEIVING, HALL		1	20					24	WATER COOLER	#12 / 3/4" C	1	20
25	AUDITORIUM TV		1	20	0.7	0.3			26	PROJ SCREEN	#12 / 3/4" C	1	20
27	AUDITORIUM		1	20			1.3	0.6	28	REFRIGERATOR	#12 / 3/4" C	1	20
29	A203		1	20					30	MICROWAVE	#12 / 3/4" C	1	20
31	POWERED DOOR		1	20	0.9	1.4			32	A201	#12 / 3/4" C	1	20
33	VENDING MACHINES		1	20			1.4	0.4	34	AUDITORIUM SOUND	#12 / 3/4" C	1	20
35	VENDING MACHINES		1	20					36	AUDITORIUM SOUND	#12 / 3/4" C	1	20
37	SPARE		1	20	-	0.2			38	SOUND ROOM	#12 / 3/4" C	1	20
39	SPARE		1	20			-	0.4	40	GYM SOUND	#12 / 3/4" C	1	20
41	SPARE		1	20					42	FOUNTAIN (NOTE 1)	#12 / 3/4" C	1	20
43	SPARE		1	20	-	-			44	SPACE FOR GFCI	-	-	-
45	SPARE		1	20			-	-	46	FOUNTAIN (NOTE 1)	#12 / 3/4" C	1	20
47	SPACE AND PROVISION		1	-					48	SPACE FOR GFCI	-	-	-
49	SPACE AND PROVISION		1	-	-	-			50	FOUNTAIN LIGHTS (NOTE 1)	#12 / 3/4" C	1	20
51	SPACE AND PROVISION		1	-			-	-	52	SPACE FOR GFCI	-	1	-
53	SPACE AND PROVISION		1	-					54	UV LAMP	#12 / 3/4" C	1	20
55	SPACE AND PROVISION		1	-	-	-			56	SPACE & PROVISION	-	1	-
57	SPACE AND PROVISION		1	-			-	-	58	SPACE & PROVISION	-	1	-
59	SPACE AND PROVISION		1	-					60	SPACE & PROVISION	-	1	-

4.0	7.2	5.0	5.6	3.6	5.7
11.2		10.7		9.3	

MAIN LUGS ONLY

CONNECTED LOAD = 31.1 KVA

DEMAND LOAD = 22.0 KVA

MINIMUM BREAKER CLASS 10,000 AMPS SYMMETRICAL

NOTE: PROVIDE A GFCI CIRCUIT BREAKER.

2

LUKE C. MOORE ACADEMY HIGH SCHOOL

SHEET: E7.5

SCALE: 1/8"=1'-0"

DATE
05/05/03

AMENDMENT

SK-E-12



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