

ALTERATIONS TO THE OFFICE AREA
RIVERSIDE COMMUNITY CENTER
CITY OF RIVERSIDE
2060 UNIVERSITY AVENUE,

& ALTERATIONS and ADDITIONS TO
N.A.A.C.P CHILD CARE CENTER
PARK and RECREATION DEPARTMENT
RIVERSIDE, CALIFORNIA

APPROVALS	
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DISCREET, PARK & RECREATION	DATE
<i>Terry Nelson</i>	2-3-88
SUPERINTENDENT, PARK DIVISION	DATE
<i>Arnold A. Reese</i>	2-3-88
SUPERINTENDENT, RECREATION DIVISION	DATE
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PARK PLANNING COORDINATOR	DATE
SUPERINTENDENT, BUILDING MAINTENANCE DIVISION	DATE
	DATE
	DATE

ELECTRICAL SYMBOL LIST

SYMBOL	DESCRIPTION
	CONDUIT HOMERUN TO PANELBOARD. LETTER AND NUMERALS INDICATE PANEL AND CIRCUIT NUMBER(S).
	CONDUIT RUN, CONCEALED IN CEILING, WALLS OR UNDER FLOOR.
	CONDUIT RUN, UNDERGROUND.
	CROSS LINES ON CONDUIT INDICATE NUMBER OF #12 AWG, 600V. CONTAINED THEREIN. TWO #12'S ARE INDICATED WHEN CROSS LINES ARE NOT SHOWN. NUMERAL AT CROSS LINES INDICATES THE SIZE OF CONDUCTOR(S) IN LIEU OF #12 CODE SIZE CONDUIT. CROSS LINE IN ELLIPSE INDICATES GROUND, #12 UNLESS NOTED OTHERWISE.
	PANEL DESIGNATION: E=EMERGENCY CIRCUITS; FIRST NUMERAL INDICATES FLOOR; SECOND NUMERAL INDICATES VOLTAGE: 1=120/208V. 3Ø, 4W; 2=240V. 3Ø, 3W; 3=120/240V. 1Ø, 3W; 4=277/480V. 3Ø, 4W; 5=120/240V. 3Ø, 4W; LAST LETTER INDICATES PANEL.
	BRANCH CIRCUIT PANEL, SURFACE MOUNTED, MOUNT AT +6'-0" TO TOP.
	BRANCH CIRCUIT PANEL, FLUSH MOUNTED, MOUNT AT +6'-0" TO TOP.
	JUNCTION BOX
	JUNCTION BOX WITH PIGTAIL INDICATING CONNECTION TO EQUIPMENT. SIZES OF CONDUIT AND CONDUCTORS SHALL BE SAME SIZE AS BRANCH CIRCUIT WIRING.
	DUPLEX GROUNDING TYPE RECEPTACLE (+12" ABOVE FLOOR UNLESS NOTED OTHERWISE), D=DEDICATED CIRCUIT.
	DOUBLE DUPLEX GROUNDING TYPE RECEPTACLE (+12" ABOVE FLOOR UNLESS NOTED OTHERWISE), D=DEDICATED CIRCUIT.
	LIGHTING FIXTURE IDENTIFICATION SYMBOL. LETTER IN UPPER HALF OF HEXAGON INDICATES FIXTURE TYPE, NUMERALS IN LOWER HALF OF HEXAGON INDICATE FIXTURE WATTAGE. NUMERAL OUTSIDE TOP OF HEXAGON INDICATES NUMBER OF FIXTURES REQUIRED, NUMBER OUTSIDE BOTTOM OF HEXAGON INDICATES MOUNTING HEIGHT FROM FLOOR TO BOTTOM OF FIXTURE. OMISSION OF MOUNTING HEIGHT INDICATES CEILING MOUNTED.
	FLUORESCENT LIGHT FIXTURE OUTLET, NUMERAL INDICATES CIRCUIT NUMBER, LOWER CASE LETTER INDICATES CONTROLLING SWITCH.
	CEILING MOUNTED INCANDESCENT OR H.I.D. LIGHT FIXTURE OUTLET, NUMERAL INDICATES CIRCUIT NUMBER, LOWER CASE LETTER INDICATES CONTROLLING SWITCH.
	BRACKET MOUNTED INCANDESCENT OR H.I.D. LIGHT FIXTURE OUTLET, NUMERAL INDICATES CIRCUIT NUMBER, LOWER CASE LETTER INDICATES CONTROLLING SWITCH.
	EXIT LIGHT FIXTURE, EACH SHADED QUARTER SEGMENT INDICATES A FACE, WITH DIRECTIONAL ARROWS AS INDICATED.
	SINGLE POLE 20A. SWITCH, LOWER CASE LETTER AT BOTTOM INDICATES OUTLETS CONTROLLED, SYMBOL AT TOP INDICATES TYPE: K=KEY CONTROLLED; P=PILOT LIGHT; 2=TWO POLE; 3=THREE WAY; 4=FOUR WAY, MOUNT AT +48" TO TOP UNLESS NOTED OTHERWISE.
	TELEPHONE CONDUIT RUN, 3/4"C.O.: T1=1"C.O.; T2=1-1/4"C.O.; T3=1-1/2"C.O.; T4=2"C.O.
	TELEPHONE OUTLET, (+12" ABOVE FLOOR UNLESS NOTED OTHERWISE.) LETTER(S) INDICATE TYPE: P=PAY STATION; W=WALL MOUNTED (+54" ABOVE FLOOR UNLESS NOTED OTHERWISE); H=HOUSE PHONE.
	CEILING MOUNTED SMOKE DETECTOR, TELEFIRE #604
	ATTIC MOUNTED SMOKE DETECTOR, TELEFIRE #603
	FIRE ALARM SIGNAL MINI-HORN, TO MATCH EXISTING
	EXISTING EQUIPMENT TO REMAIN.
	NEW LOCATION OF EXISTING EQUIPMENT.
	DISCONNECT SWITCH, F=FUSED, RATING AS NOTED, MOUNT AT +4'-6" TO HANDLE, UNLESS NOTED OTHERWISE.
	THERMOSTAT OUTLET (+60" ABOVE FLOOR UNLESS NOTED OTHERWISE.)

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	FINISH	LAMP(S)	REMARKS	MFR. & NO.
A 72	1' x 4' CEILING MOUNTED FLUORESCENT STRIPLIGHT	WHITE	2-36W. R.S., C.W. ENERGY SAVING	COMPLETE W/ WIREGUARD	LITHONIA #JUN 240 120 ES W69 OR APPROVED EQUAL
B 72	2' x 4' RECESSED MOUNTED FLUORESCENT	WHITE	2-36W. R.S., C.W. ENERGY SAVING		LITHONIA #2GT 240 A12.125 120 ES SLP, OR APPROVED EQUAL.
B-1 144	2' x 4' RECESSED MOUNTED FLUORESCENT	WHITE	4-36W. R.S., C.W. ENERGY SAVING		LITHONIA #2GT 440 A12.125 120 ES SLP, OR APPROVED EQUAL.
C 150	CEILING MOUNTED INCANDESCENT KEYLESS PORCELAIN LAMPHOLDER	WHITE	1-150W. INCANDESCENT	COMPLETE W/ WIREGUARD	LEVITON #9875-2, OR APPROVED EQUAL

ABBREVIATIONS

C.	CONDUIT
C/B	CIRCUIT BREAKER
CKT.	CIRCUIT
C.O.	CONDUIT ONLY
DISC.	DISCONNECT
DIST.	DISTRIBUTION
F.A.	FIRE ALARM
G.F.I.	GROUND FAULT INTERRUPTER
GRD.	GROUND
HP.	HORSEPOWER
H.V.	HIGH VOLTAGE
LOC.	LOCATION
N.I.C.	NOT IN CONTRACT
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
PNL.	PANEL
SW.	SWITCH
U.N.O.	UNLESS NOTED OTHERWISE
V.O.J.	VERIFY ON JOB
WP.	WEATHERPROOF
XFMR.	TRANSFORMER

DEMOLITION NOTES

- IN GENERAL, THE DEMOLITION PLANS MAY NOT SHOW ALL EXISTING ELECTRICAL EQUIPMENT, OUTLETS, LIGHTING, ETC. THAT IS TO BE REMOVED. HOWEVER, ELECTRICAL EQUIPMENT, WHETHER SHOWN ON DRAWING OR NOT, THAT IS LOCATED IN REMOVED WALLS OR CEILING, SHALL BE REMOVED UNLESS NOTED OTHERWISE.
- EXISTING CONDUIT MAY BE REUSED IF ADEQUATELY SIZED, BUT IN NO CASE SHALL ANY EXISTING CONDUCTORS BE REUSED.
- IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS. MAINTAINING CONTINUITY SHALL CONSIST OF PROVIDING CONDUIT AND CONDUCTORS TO AND FROM EXISTING OUTLETS PASSING THROUGH OR LOCATED IN ANY WALL TO BE REMOVED.
- EXISTING CONDUIT FEEDS UP THROUGH FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH FLOOR WHERE EXISTING WALLS, ETC. ARE REMOVED. REMOVE CONDUCTORS FROM THIS POINT BACK TO LAST OUTLET REMAINING IN SERVICE, CONTRACTOR SHALL PROVIDE CONDUIT AND CONDUCTORS TO MAINTAIN CONTINUITY.
- ALL CIRCUIT NUMBERS AND EXISTING CONDUIT HOMERUNS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING AS-BUILT DRAWINGS. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF HOMERUNS AND ADJUST CIRCUIT NUMBERS ACCORDING TO EXISTING CONDITIONS IF REQUIRED.
- EXISTING CIRCUITS THAT ARE TOTALLY REMOVED AND NOT REUSED SHALL BE IDENTIFIED ON PANEL SCHEDULE AS "SPARE".
- ALL ELECTRICAL EQUIPMENT REMOVED SHALL BE TURNED OVER TO OWNER IN "AS-FOUND" CONDITION.

GENERAL NOTES

- IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO INSTALL CONDUIT AND/OR ELECTRICAL EQUIPMENT IN A LOCATION WHICH WILL CAUSE AS LITTLE INTERFERENCE AS POSSIBLE WITH THE INSTALLATION AND MAINTENANCE OF ANY OF THE MECHANICAL AND/OR PLUMBING DUCTS, LINES AND EQUIPMENT.
- ALL FINAL CONNECTIONS TO OWNER-FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY TYPE OF CEILING SYSTEMS AND FURNISH APPROVED LIGHTING FIXTURES OF THE TYPE REQUIRED FOR MOUNTING IN SUBJECT CEILINGS. WHERE FIXTURES ARE RECESSED IN PLASTER CEILINGS, THEY SHALL BE COMPLETE WITH NECESSARY MOUNTING HARDWARE AND PLASTER FRAMES. FIXTURE CATALOG TYPES ARE NOT INTENDED TO INDICATE TYPE OF CEILING.
- EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES AND SPEAKERS SHALL BE AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS.
- ALL RECESSED LIGHT FIXTURES LOCATED IN A SUSPENDED ACOUSTICAL CEILING SHALL BE SUPPORTED DIRECTLY FROM THE FIXTURE HOUSING TO THE STRUCTURE ABOVE WITH A MINIMUM OF TWO 12 GAGE WIRES. LEVELING AND POSITIONING OF FIXTURE MAY BE PROVIDED BY THE CEILING GRID. FIXTURE SUPPORT WIRES MAY BE SLIGHTLY LOOSE TO ALLOW FIXTURE TO SEAT IN GRID SYSTEM.
- ALL RECESSED LIGHTING FIXTURES, SPEAKERS, ETC., MOUNTED IN FIRE RATED CEILINGS SHALL BE ENCLOSED WITH AN APPROVED ENCLOSURE CARRYING THE SAME FIRE RATINGS AS THE CEILING.
- THE NUMERAL(S) SHOWN AT TOP LIGHT FIXTURE IDENTIFICATION SYMBOL WHICH INDICATED NUMBER OF LIGHT FIXTURES REQUIRED SHALL NOT BE USED BY THE CONTRACTOR FOR HIS QUANTITY TAKEOFF AT BIDDING OR FOR DETERMINATION OF HOW MANY FIXTURES WILL BE INSTALLED. THE CONTRACTOR SHALL COUNT ALL LIGHT FIXTURES WHEREVER A FIXTURE OUTLET IS SHOWN ON DRAWINGS.
- ALL FLUORESCENT BALLASTS SHALL BE HIGH POWER FACTOR AND ENERGY SAVING. BALLASTS AND CAPACITORS SHALL BE COMPLETE WITH AUTOMATICALLY RESETTABLE THERMAL PROTECTORS. LAMPS SHALL BE ENERGY SAVING TYPE.
- ALL PLASTIC LENSES FOR FLUORESCENT FIXTURES SHALL BE 100% VIRGIN ACRYLIC. LENSES SHALL BE 0.125" MINIMUM OVERALL THICKNESS, UNLESS NOTED TO BE 0.156" OR 0.187". MAXIMUM PENETRATION SHALL BE 0.080" TYPICAL.
- ALL OUTLET LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS PRIOR TO INSTALLATION. MOUNTING HEIGHTS INDICATED ON ELECTRICAL OUTLETS ARE FROM FINISHED FLOOR TO CENTER OF OUTLETS.
- EXACT ROUTING OF ALL CONDUIT WITHIN EXISTING BUILDINGS SHALL BE DETERMINED BY CONTRACTOR. ANY COST REQUIRED TO ROUTE CONDUIT DIFFERENTLY THAN IS SHOWN ON THESE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUT-OUTS IN TILE OR COUNTER SPLASHES WHERE RECEPTACLES, OUTLETS, ETC. OCCUR. VERIFY EXACT LOCATION AND MOUNTING ORIENTATION WITH ARCHITECT PRIOR TO INSTALLATION.
- ATTENTION IS CALLED TO THE FACT THAT THE CEILING SYSTEMS FOR THE MOST PART ARE CONSIDERED TO BE INACCESSIBLE. THEREFORE, THE CONTRACTOR MUST STRATEGICALLY LOCATE BOXES, ETC. WHICH MUST BE CONSIDERED ACCESSIBLE.
- CONTRACTORS SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND BY THE ACT OF SUBMITTING A BID, ACCEPT THE CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO WORK.
- WHEREVER A DISCREPANCY IN SIZE OF CONDUIT, WIRE OR EQUIPMENT ARISES ON THE DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE LARGEST SIZE OF THE ITEMS IN QUESTION.
- IN SOME INSTANCES, IT MAY BE NECESSARY TO DEFER WORK IN CERTAIN AREAS AND LOCATIONS UNTIL SUCH TIME AS EXISTING OPERATIONS CAN BE RELOCATED OR REARRANGED BY THE OWNER. THEREFORE, WHENEVER IT BECOMES NECESSARY FOR THE CONTRACTOR TO PERFORM WORK UNDER THIS CONTRACT IN AREAS IN WHICH THE OWNER'S WORK IS BEING PERFORMED, THIS CONTRACTOR SHALL ADVISE THE OWNER RELATIVE TO THIS REQUIREMENT AND SHALL FOLLOW CLOSELY THE DIRECTIVE ISSUED BY THE OWNER INsofar AS TIME AND PROCEDURES ARE CONCERNED. ALLOW OWNER FORTY EIGHT (48) HOURS PRIOR NOTICE. WORK SHALL BE ARRANGED TO PROVIDE ABSOLUTE MINIMUM DOWN TIME.
- IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO DO ALL CORING, CUTTING, PATCHING AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY FOR HIM TO PENETRATE FOR HIS WORK. ALL OPENINGS MADE SHALL BE SEALED TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR OR CEILING. COORDINATION WITH STRUCTURAL ENGINEER AND APPROVAL IS NECESSARY PRIOR TO CUTTING INTO THE STRUCTURE.



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ALLOCATION TO THE OFFICE AREA
RIVERSIDE COMMUNITY CENTER
CITY OF RIVERSIDE
2060 UNIVERSITY AVE, RIVERSIDE, CALIFORNIA

NOTES, SCHEDULES,
SYMBOL LIST

REVISIONS
1-25-86
DRAWN BY
RKW

DATE: NOVEMBER 27
JOB NUMBER: 86-11-35
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OF FOUR

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SECTION 16100
ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.01 DESCRIPTION. Division 1 applies to this section. Provide electrical work as indicated, specified and required.

A. Work In This Division. Principal items include:

1. Complete distribution system for lighting, power, feeders, branch circuits, lighting fixtures, power connections, receptacles, communication systems.

1.02 PERMITS AND FEES. Secure and pay for all necessary permits, inspections, examinations and fees or charges necessary for execution and completion of electrical work. Arrange for power and telephone utility services and connections and pay any required fees or charges.

1.03 REGULATIONS AND CODES. All work and materials shall conform to the prevailing edition and amendments thereto of the following codes where specified:

NATIONAL ELECTRICAL CODE
NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)
UNDERWRITERS' LABORATORIES, INC. (UL)
REQUIREMENTS OF THE SERVING UTILITY COMPANIES
REQUIREMENTS OF FEDERAL, STATE OR CITY AGENCIES HAVING JURISDICTION.

1.04 LISTING AND APPROVAL. All materials installed on this project shall be listed or approved by Underwriters' Laboratories, Inc. (UL) and shall bear the label thereof where applicable.

1.05 SHOP DRAWINGS. Within 30 days after award of contract, submit shop drawings for following items:

A. Wiring Devices, Conductors, Conduit, etc.

B. Lighting Fixtures, Lamps and Poles.

C. Panel Boards, Branch Circuit and Distribution.

D. Transformers.

E. Communication Systems

1.06 LOCATIONS AND ACCESSIBILITY. Work specified and not clearly defined by drawings shall be installed and arranged in a manner satisfactory to the Engineer.

1.07 OPERATION AND MAINTENANCE INSTRUCTIONS. Fully instruct and demonstrate to the owner's operating personnel the performance, operation and maintenance of equipment. The time allowed for said instruction shall be included for each contractor as part of these contract documents.

1.08 TESTING AND ADJUSTMENT. Upon completion of electrical work, adjust and test circuits, lights and other electrical items to insure proper operation of electrical equipment. Check service voltages under maximum load. Items, fixtures and parts in need of correction and discovered during such testing shall be immediately repaired or replaced with new equipment and that part of the system shall be retested. Such replacement or repair shall be done at no additional cost to owner.

1.09 FINAL INSPECTION AND ACCEPTANCE. After all requirements of drawings and specifications have been completed, representatives of owner, architect and engineer will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system involved.

1.10 WARRANTY. Contractor shall furnish to owner a written warranty against defects in materials and workmanship for one (1) year.

END OF SECTION

SECTION 16100

GENERAL MATERIALS FOR ELECTRICAL WORK

PART 1 - GENERAL

1.01 DESCRIPTION. Materials specified herein are general in nature only, and are not necessarily complete. All materials specified may not be required.

1.02 APPROVED MANUFACTURERS. Furnish and install only materials indicated and specified.

A. Lamps. Sylvania, Westinghouse and General Electric.

B. Ballasts. Universal, General Electric, Westinghouse, or approved equal.

1.03 WIRE AND CABLE. All conductors shall be copper. Wire sizes #10 and smaller shall be solid conductor. However, control systems may be wired with #14 stranded. Insulation for wiring shall be type "XHHW" or "THWN", 600 Volt.

1.04 LIGHTING FIXTURES. As specified on the drawings.

A. Ballasts shall be high power factor type and rated for operation down to 20° F., on outdoor fixtures.

B. Lamps shall be of first quality.

1.05 PANELBOARDS DISTRIBUTION AND BRANCH CIRCUIT.

A. General Construction. Panels shall have hinged and locked doors. Flush mounted panelboards shall have fronts and doors of concealed construction with no visible hinges or mounting hardware.

B. Panels shall contain thermal-magnetic trip, plug-in type circuit breakers. Ampere rating and number of poles, etc. are shown on panel schedules.

C. Finish. Where panels are mounted flush with wall, the trim and door shall be given a primer coat, to be finish painted by others.

1.06 CONDUIT.

A. Rigid metal conduit: steel, hot-dip galvanized, sherardized or zinc coated.

B. Electrical metallic tubing: steel, galvanized or sherardized. Couplings and connectors, seamless steel construction and of the set screw or watertight compression type equal to Thomas & Betts Company #5123 or #5031 series, Steel City TC 715 or TC 721 series, complete with insulated throats.

C. Flexible conduit: steel, galvanized. Connector shall be equal to Thomas & Betts #3312 and/or #3132 series, complete with insulated throat.

D. Liquid-tight flexible conduit: Scaltite Type U.A. with Appleton series "ST" connectors, for all motor operated equipment and outdoors.

E. Nonmetallic conduit: P.V.C. Schedule 40.

1.07 OUTLET BOXES.

A. Outlet boxes and covers to be pressed steel, knockout type or cast iron with drilled, tapped and plugged holes, hot-dip galvanized or sherardized. Boxes of proper code size for the number of wires or conduits passing through or terminating therein, but in no case shall box be less than 4" square, unless specifically noted otherwise.

1.08 PULL BOXES. Sizes as indicated on the drawings and in no case of less size or material thickness than required by the governing code. Exercise care in locating underground pull boxes to avoid installation in drain water flow areas.

1.09 SWITCHES.

A. Provide circuit switches totally enclosed, bakelite or composition base, toggle type with 277 Volt A.C. rating for full capacity or contacts for incandescent or fluorescent lamp loads. Switch ratings shall be 20 Ampere only, Hubbell #1221-1.

B. Where switches are mounted in multiple gang assembly and are operating at 277 Volts and/or 277 Volts and 120 Volts mounted in same outlet box, there shall be a barrier installed between each switch.

1.10 RECEPTACLES

A. All receptacles in flush type outlet boxes shall be installed with a bonding jumper for ground between the grounded outlet box and the receptacle ground terminal. Grounding through the receptacle mounting straps is not acceptable. The bonding jumper shall be sized in accordance with the branch circuit protective device as tabulated herein under "grounding".

B. Duplex convenience receptacles shall be grounding type, 120 Volt, 20 Ampere and shall have two current carrying contacts and one grounding contact which is internally connected to the frame. Outlet shall accommodate standard parallel blade cap and shall be side wired, Hubbell #8300-1.

C. Ground fault type duplex receptacle shall be 120 Volt, 20 Ampere, Leviton #6398-1.

D. Weatherproof receptacle shall be ground fault type duplex receptacle, mounted in a flush hinged door enclosure with lock and key. Enclosure shall be a Pass & Seymour #4600 with a Leviton #6398-1 receptacle. On exposed conduit runs, weatherproof ground fault type receptacle as hereinbefore specified, installed in "FS" conduit with spring door type covers, Hubbell #5211 or approved equal by Pass & Seymour or Arrow Hart.

1.11 PLATES. Provide plates for every switch, receptacle, telephone outlet, wall speaker outlet. All plates shall be ivory colored plastic plates for all outlets, unless specifically noted otherwise.

1.12 DISCONNECTS. Disconnect switches shall be 250 Volt or 600 Volt A.C., NEMA type HD, quick-make, quick-break, h. p. rated, nonfusible or fusible, Class "R", in NEMA Type I enclosure, lockable with number of poles and amperage as indicated on the drawings. Where enclosure is indicated, W. P. (weatherproof) switches shall be in raintight NEMA Type 3R enclosure, lockable. Maximum voltage, current and horsepower rating clearly marked on the switch enclosure and switches having dual element fuses shall have rating indicated on the metal plate.

1.13 TRANSFORMERS. Self-cooled type with copper conductors, Class H insulation, and a temperature rise of 115° C in 40° C ambient under continuous full load conditions. Kilovolt ampere (KVA) ratings shall be as shown on the drawings. Design, construction and operational characteristics shall be in accordance with ANSI, AIEE and NEMA standards. Insulating materials shall be in accordance with NEMA St 20-1972 standards for a 220° C, UL component recognized insulation system.

Noise level shall be guaranteed by the manufacturer not to exceed 40 decibels for transformers to and including 112-1/2 KVA and 55 decibels for transformers rated above 112-1/2 KVA measured by NEMA standards.

Vibration Control. Transformers shall be provided with vibration dampers consisting of Korfund spring loaded shock mounts and Elastorib sheeting. Size and number of shock mounts shall be in accordance with manufacturer's recommendations for accommodation of weight and damping of critical sound frequencies. Mounting bolts on floor mounted transformers shall extend into pads only and shall not be in direct contact with building structural members.

END OF SECTION

SECTION 16100
GENERAL INSTALLATION FOR ELECTRICAL WORK

PART 1 - GENERAL

1.01 DESCRIPTION. Requirements of Division 1 and Sections 16100 and 16100 apply to this section. Installation requirements specified herein are general in nature and not necessarily complete. All installation requirements listed may not be used.

PART 2 - PRODUCTS (Refer to Section 16100)

PART 3 - EXECUTION

3.01 CONDUIT AND RACEWAYS.

A. Sizes of conduits for the various circuits shall be as indicated on the Drawings and as required by Code for the size and number of conductors to be pulled therein. Code requirements shall prevail where fill is not shown on Drawings. Open ends shall be capped with approved manufactured conduit seals as soon as installed and kept capped until ready to pull in conductors. Where running thread connections are necessary, only approved manufactured conduit unions shall be used.

B. Electrical Metallic Tubing (EMT). Do not embed any electrical metallic tubing or aluminum conduit in concrete construction. Electric metallic tubing (EMT, 2" maximum size, may be used in such dry locations as in stud partitions and furred ceiling spaces, and shall be continuous from outlet to outlet to panel-board. The fittings used shall be of the watertight compression type T&B, Steel City, or equal. EMT shall not be used in mechanical equipment rooms, and shall not be run exposed. EMT connectors shall be provided with insulated throats.

C. Flexible Steel Conduit may be used in runs from adjacent junction boxes to lighting fixtures and in certain locations where, for structural or other reasons, it is impractical to use steel tube, and where specific permission to do so has been granted by the Engineer. Flexible conduit shall be used with screw type conduit fittings and bushings. For all motor connections and in all moist or damp locations the flexible conduit shall be American Brass "Sealtite Flexible" Type "UA", Columbia "Flex-Seal" Type "XL" or approved equal, with Appleton Flexible fittings, Series "ST", T&B 5200 Series, Steel City M111 Series, or equal.

D. Runs. Install conduit as a complete system, continuous from outlet to outlet, cabinet, junction and/or pullbox or fittings. System must be mechanically and electrically connected to ensure adequate electrical continuity from one conduit to another and from conduit to equipment. Conduit shall be run concealed or exposed as noted on the Drawings. Exposed conduit runs shall be parallel with supporting walls, beams or ceilings, and with each other. Right angle turns shall consist of condulets or symmetrical bends. All runs of conduit shall be installed to avoid trapped condensation.

E. Conduit Ends shall be cut square and shall be carefully reamed out to full size with a tapered burring reamer and shall be shouldered in the fittings.

F. Flashing. Where conduit extends through roof to equipment on roof areas, contractor shall provide 24 gage galvanized sheet metal flashing cones with 4" flanges on roof surface. This flashing shall be delivered to the Roofing Contractor for installation. The correct location of all such outlets shall be the responsibility of the Contractor.

G. Rigid Plastic Conduit (PVC Schedule 40). May only be used outside of building, underground. Install a Code gage green wire ground where PVC is used.

H. Bends in conduit 2" or larger shall have a radius of curvature of the inner edge, equal to but not less than 10 times the internal diameter of the conduit, except as otherwise indicated on the Drawings. Any deviations from this radius shall be approved by the Architect. Wire or cable bends in junction and/or pullboxes shall be made with a long radius. Bends for cable shall have a radius of not less than 5 times the diameter of the cable.

I. Nesting of Conduits shall be made when two or more conduits are used in parallel. Conduit runs shall not have more than three 90 degree bends between outlet boxes, pullboxes, junction boxes or terminal cabinets.

J. Clearance. Conduit shall not run closer than 6" to any hot water pipe, steam pipe, heater flue, or vent.

K. Condulets. Provide for exposed runs on conduits where junction, 90 degree bends or offsets are required, whether such condulets are indicated on the Drawings or not. Conduit bends will not be permitted around the corners, beams, walls, or equipment. All condulet covers shall be accessible. Condulets 2" or larger shall be Type "LBD".

L. Control Apparatus, outlet boxes, junction and/or pullboxes, and other similar equipment shall be installed and maintained in accessible positions and locations. The HVAC, Plumbing, and Architectural plans indicate the location of HVAC equipment (dampers, damper motors, etc.) and access panels. Areas adjacent to these openings shall be used as accessible locations for junction.

M. Pullwires or lines, a minimum 5/32" O.D., 400# strength polyethylene line shall be installed in all empty raceways.

3.02 WIRE AND CABLE

A. Splices, Joints and Taps.

1. For wire in sizes #8 AWG and smaller, use Ideal "Wrenuts" or 3M "Scotchlocks".

2. For copper wire in sizes #6 AWG and larger, use Burndy split-bolt type or hi-press connectors.

3. Make splices, joints and taps and connections to equipment with approved solderless lugs sized for the wire or conductor size involved.

B. Tagging. Identify power and lighting feeders with permanent tags at panels, pull boxes and points where conduit run is broken.

C. Branch circuit and feeder wiring for all systems shall be continuous from switch to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes.

D. Installation. Thoroughly clean conduit and wireways and insure all parts are perfectly dry before pulling wires.

3.03 BRANCH CIRCUIT WIRING METHODS

A. Fluorescent fixtures shall not be used as a raceway for branch circuit conductors except where installed end-to-end to form a continuous assembly.

B. Wall outlets shall not be wired back-to-back, boxes on opposite sides of a common wall shall be separated horizontally by a space of at least 6".

3.04 LIGHTING FIXTURES. Provide lighting fixtures as indicated and specified at all lighting outlets. Provide diffusers, fitting, canopies, sockets, reflectors, ballasts, wiring, hangers and accessories necessary for complete installation.

END OF SECTION

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ALTERATIONS & ADDITIONS TO
N.A.A.C.P. CHILD CARE CENTER
CITY OF RIVERSIDE
2060 UNIVERSITY AVE., RIVERSIDE, CALIFORNIA

SPECIFICATIONS

REVISIONS
1-25-85

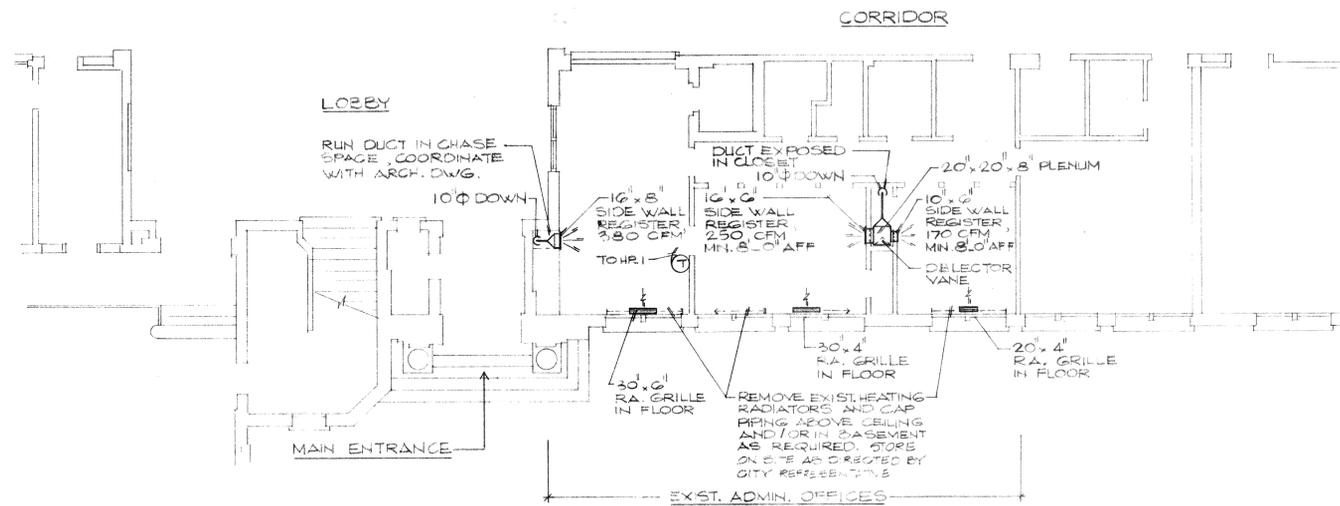
DRAWN BY
RKW

DATE
NOVEMBER 87
JOB NUMBER
86-11-35

SHEET NO. **E 4**
OF **FOUR**

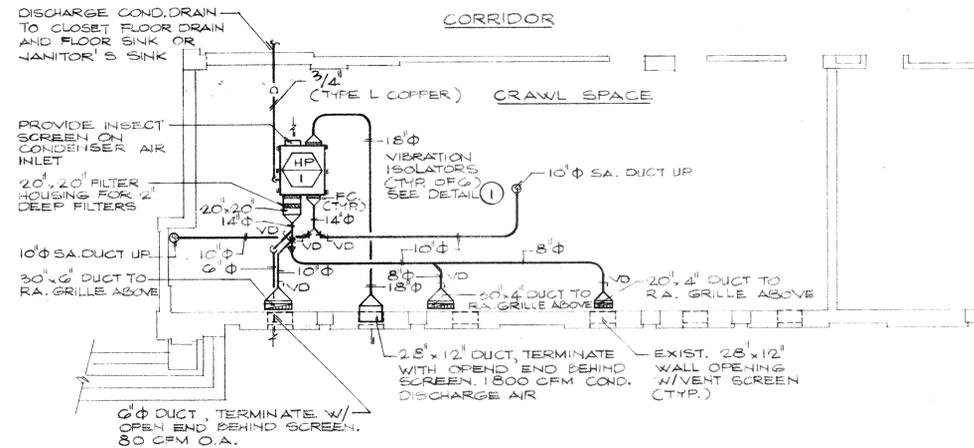
Plan No. 0625

87-135



MECHANICAL FLOOR PLAN

SCALE
1/8" = 1'-0"



MECHANICAL BASEMENT

SCALE
1/8" = 1'-0"

SCHEDULES



450 LBS

PACKAGED INDOOR, CEILING HUNG HEAT PUMP UNIT WITH CENTRIFUGAL BLOWER FOR CONDENSER SIDE DUCTED APPLICATION. 800 CFM SUPPLY AIR; 60 CFM MINIMUM OUTSIDE AIR; 20 MBH TOTAL COOLING CAPACITY; 80°F DB/67°F WB INDOOR AIR; MIN. 16 MBH TOTAL HEATING AT 37°F OUTDOOR TEMP. THE REFRIGERANT CIRCUIT SHALL INCLUDE SUCTION LINE ACCUMULATOR, REVERSING VALVE, CHECK VALVES, THERMAL EXPANSION VALVE WITH EXTERNAL EQUALIZER, SIGHT GLASS, FILTER DRIER AND LIQUID AND SUCTION FITTINGS, COMPLETE FACTORY CHARGED SYSTEM. ELECTRICAL SHALL INCLUDE INHERENT PROTECTION ON ALL MOTORS, MOTOR CONTACTORS, HI-LO PRESSURE SWITCH, CRANKCASE HEATER, DEFROST CONTROLS AND OVERSIZED 24-VOLTS CONTROL TRANSFORMER, AUTOMATIC CHANGE OVER ROOM THERMOSTAT WITH HEAT/COOL, FAN-ON/OFF/AUTO. UNIT ELECTRICAL AT 208/230 VOLTS, 1 PHASE.

UNIT SHALL BE 'SKIL-AIRE' MODEL PAH024H1A-B OR APPROVED EQUAL. (CONTACT DEBBIE FREDERICK @ HALDEMAN INC. 1-800-621-6918)

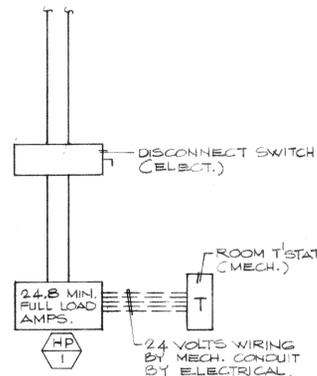
SUPPLY REGISTER

SIDEWALL REGISTER WITH DOUBLE DEFLECTION, OPPOSED BLADE DAMPER, EXTRUDED ALUMINUM CONSTRUCTION. METAL AIRE MODEL H4004D OR APPROVED EQUAL.

RETURN GRILLE

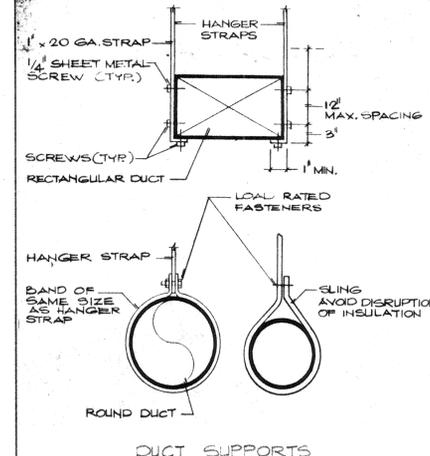
FLOOR, LINEAR RETURN AIR GRILLE, 1/2" BAR SPACING, 0° DEFLECTION. EXTRUDED ALUMINUM CONSTRUCTION. METAL AIRE MODEL 2000F OR APPROVED EQUAL.

ELECTRICAL
208-230V / 1Ø/60HZ



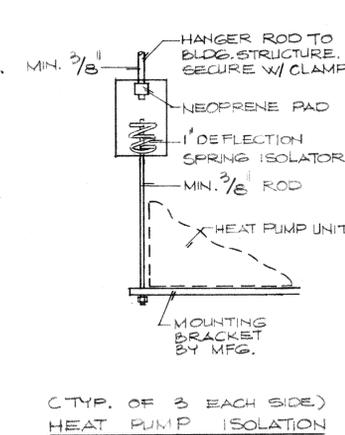
WIRING DIAGRAM

SCALE
NONE



DETAIL 2

SCALE
NONE



DETAIL 1

SCALE
NONE

LEGEND

- DUCTWORK
- O — CONDENSATE DRAIN
- V — VOLUME DAMPER
- HP 1 HEAT PUMP UNIT
- FC FLEXIBLE CONNECTION
- SA SUPPLY AIR
- OA OUTSIDE AIR
- RA RETURN AIR
- Ø ROUND DUCT

SPECIFICATIONS (*ITEMS NOT APPLICABLE TO THIS PROJECT)

- 1.0 GENERAL
 - 1.01 MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL HEATING, VENTILATION AND AIR CONDITIONING AS SHOWN ON DRAWING. CONTRACTOR SHALL PROVIDE ALL NECESSARY DUCTWORK, DUCT INSULATION, HANGERS, SUPPORTS, DIFFUSERS, REGISTERS, GRILLES, DAMPERS, TURNING VANES, MECHANICAL EQUIPMENT, PIPING, PIPE INSULATION, REFRIGERATION CHARGE, CONTROLS AND ALL OTHER DEVICES NECESSARY FOR THE PROPER OPERATION OF THE HEATING, VENTILATION AND AIR CONDITIONING SYSTEM.
 - 1.02 ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE UNIFORM MECHANICAL CODE AND ALL LOCAL CODES OR ORDINANCES. CONTRACTOR SHALL COORDINATE ALL WORK WITH TRADES PRIOR TO INITIATION OF ANY WORK OR INSTALLATION OF MATERIALS. OWNER AND OWNER'S REPRESENTATIVE ASSUME NO RESPONSIBILITY FOR WORK DEVIATING FROM THE DESIGN DOCUMENTS OR NOT SPECIFICALLY APPROVED BY GOVERNING CODES.
 - 1.03 THE CONTRACTOR SHALL OBTAIN ALL PERMITS, INSPECTIONS AND APPROVALS FROM GOVERNING AGENCIES AND ARCHITECTS BEFORE COMMENCING INSTALLATION.
 - 1.04 ALL EQUIPMENT ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THEIR MANUFACTURER.
 - 1.05 THE GENERAL CONTRACTOR SHALL DO ALL FRAMING, CUTTING, PATCHING, ETC. IN WALLS, SUB-FLOORS AND ROOF FOR DUCT, PIPE AND/OR EQUIPMENT PENETRATION.
 - 1.06 THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LINE VOLTAGE WIRING AND CONDUIT FOR ALL LINE AND LOW VOLTAGE WIRING AND MAKE FINAL CONNECTIONS TO THE LINE VOLTAGE EQUIPMENT.
 - *1.07 COORDINATE ALL CEILING DIFFUSERS WITH REFLECTED CEILING PLAN OR AS DIRECTED BY THE ARCHITECT.
 - 1.08 AFFIX A MAINTENANCE LABEL TO MECHANICAL EQUIPMENT AND A MANUAL SHALL BE PROVIDED FOR THE OWNER'S USE.
 - 1.09 THE MECHANICAL SUB-CONTRACTOR SHALL CONFIRM ELECTRICAL CHARACTERISTICS WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT AND CONTROLS.
 - *1.10 ALL CEILING AND WALL ACCESS DOORS OR PANELS (WHERE SHOWN OR REQUIRED FOR INSPECTION AND MAINTENANCE TO FIRE DAMPERS, VALVES, CONTROLS AND EQUIPMENT) TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR.
 - 1.11 WHERE SPECIFIC DETAILS ARE NOT SHOWN OR SPECIFIED, THEY SHALL BE AS RECOMMENDED IN THE LATEST ISSUE OF THE 'ASHRAE GUIDE' OR 'SMACNA LOW VELOCITY DUCT MANUAL'.
 - *1.12 MAXIMUM LENGTH OF FLEXIBLE DUCT CONNECTOR AT DIFFUSERS/REGISTERS TO BE 8-FEET.
 - 1.13 PROVIDE SEISMIC RESTRAINT SUPPORTS FOR ALL DUCTWORK AND PIPING WHERE REQUIRED PER CODE BASED ON THE RECOMMENDATIONS OF THE LATEST ISSUE OF THE 'SMACNA LOW VELOCITY DUCT MANUAL'.
- 2.0 DUCTWORK
 - 2.01 SUPPLY AIR, RETURN AIR AND OUTSIDE AIR DUCTWORK SHALL BE GALVANIZED SHEET STEEL FABRICATED, BRACED INSTALLED AND SUPPORTED IN ACCORDANCE WITH THE LATEST SMACNA DUCT MANUAL FOR LOW VELOCITY DUCTWORK. ALL JOINTS AND B-LOCKS IN SUPPLY AND RETURN SHEET METAL DUCTWORK SHALL BE TAPED AIRTIGHT. MANUAL VOLUME DAMPERS SHALL BE INSTALLED IN MAIN AND BRANCH DUCTWORK WHERE SHOWN ON PLANS. EACH DAMPER SHALL HAVE A LOCKING QUADRANT.
 - *2.02 ALL DUCT CONNECTIONS BETWEEN SUPPLY DIFFUSERS AND SUPPLY BRANCH DUCTS AND BETWEEN RETURN GRILLES AND RETURN BRANCH DUCTS SHALL BE MADE WITH LOW PRESSURE ACOUSTICAL FACTORY PRE-INSULATED FLEXIBLE DUCT UNLESS SHOWN OTHERWISE. FLEXIBLE DUCT SHALL BE LISTED AND LABELED FOR UL-181 CLASS 1 AIR DUCT MATERIAL AND COMPLY WITH NFPA BULLETINS 90A AND 90B. THE FLEXIBLE DUCTWORK SHALL BE 61 INDUSTRIES GLASSFLEX ADL-181 OR APPROVED EQUAL.
 - *2.03 DUCTWORK FOR EXHAUST HOODS SHALL BE CONSTRUCTED OF NOT LESS THAN NO. 24 MANUFACTURERS STANDARD GAGE STEEL.
 - 2.04 VOLUME CONTROL DAMPERS: DAMPERS SHALL BE PROVIDED FOR ALL BRANCH CONNECTIONS OR TAKE-OFFS AND ELSEWHERE AS NECESSARY FOR VOLUME CONTROL AND PROPER AIR BALANCING. DAMPERS SHALL BE OF THE AUTOMATIC, AND MANUAL TYPE WHERE INDICATED ON THE DRAWINGS.
- 3.0 INSULATION
 - 3.01 CONCEALED SHEET METAL S.A. & R.A. DUCTWORK: SHALL BE INSULATED WITH 1" THICK 3/4" DENSITY OWENS-CORNING TYPE III OR APPROVED EQUAL, FIBERGLASS FACED DUCT WRAP. INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - *3.02 SUPPLY AND RETURN AIR DUCTS EXPOSED TO WEATHER SHALL BE LINED WITH 2" DUCT LINING AND DUCTS PAINTED WITH WEATHERPROOF PAINT.
 - 3.03 ACOUSTIC DUCT LINING:
 - A. FURNISH AND INSTALL ACOUSTICAL LINING ON THE INTERIOR OF SHEET METAL DUCTWORK WHERE INDICATED. ACOUSTICAL LINING SHALL BE 1" THICK, OWENS-CORNING 'ACROFLEX' DUCT LINER, TYPE 300, 3 POUNDS PER CUBIC FOOT DENSITY, OF LONG TEXTILE FIBERS, COMPLYING WITH NFPA STANDARD 90-A REQUIREMENTS, JOHNS-MANVILLE, OR CERTAIN-TWEED.
 - B. DUCT LINER SHALL BE APPLIED TO THE FLAT SHEET WITH 100 PERCENT COVERAGE OF BENJAMIN FOSTER 81-99 'SAFETEE DUCT-PAS' FIRE RETARDANT ADHESIVE. DUCT LINER SHALL BE CUT TO ASSURE SNUG CORNER JOINTS. THE NEOPRENE OR THE SURFACE DESIGNED TO BE EXPOSED SHALL FACE THE AIR STREAM. ON TOP OR SIDES OF DUCTS HAVING A WIDTH OR HEIGHT DIMENSION OVER 20 INCHES, THE LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS ON A MAXIMUM OF 15 INCH CENTERS. FASTENERS SHALL BE VIRTUALLY FLUSH WITH THE LINER SURFACE. FASTENERS SHALL START WITHIN 2 INCHES OF ALL LEADING EDGES OF EACH SECTION AND WITHIN 3 INCHES OF THE LEADING EDGE OF CROSS JOINTS WITHIN THE DUCT SECTION. ALL EXPOSED EDGES AND LEADING EDGES OF ALL TRANSVERSE JOINTS OF THE LINER SHALL BE HEAVILY COATED WITH A SUITABLE FIRE RESISTANT ADHESIVE. THE UPSTREAM END MUST BE CONTINUOUSLY ADHERED FOR A 6 INCH WIDTH.
 - C. DUCT SIZE SHOWN ON DRAWINGS ARE NET INSIDE DIMENSIONS, CONSEQUENTLY THE DUCTWORK MUST BE INCREASED IN SIZE TO ACCOMMODATE THE LINING.
 - 3.04 CONDENSATE DRAIN: PROVIDE 3/4" THICK STANDARD ARMAFLEX PIPE INSULATION BY ARNSTRONG.
- 4.0 AIR DISTRIBUTION DEVICES:
 - A. CEILING SUPPLY DIFFUSERS: PERFORATED FACE OR AS SHOWN ON DRAWINGS, ADJUSTABLE AIR PATTERN, OPPOSED BLADE VOLUME CONTROL, WHITE BAKED ENAMEL FINISH, TITUS, BARBER COLMAN OR EQUAL, STYLE AS SCHEDULED ON THE DRAWINGS.
- 5.0 AIR SYSTEM BALANCING
 - 5.01 UPON COMPLETION OF THE INSTALLATION, ADJUST THE SUPPLY, RETURN AND OUTSIDE AIR SYSTEMS. CORRECT ALL AIR DEFICIENCIES. AFTER FINAL BALANCE, MARK LOCATION OF ALL MANUAL DAMPERS. ~~MINIMUM OF 4 COPIES OF CERTIFIED REPORT TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. THE CONTRACTOR SHALL PAY ALL COSTS INCURRED TO REBALANCE THE AIR SYSTEM.~~
- 6.0 SUBMITTALS
 - 6.01 CONTRACTOR SHALL FORWARD A MINIMUM OF 4 COPIES OF SUBMITTAL TO THE OWNER'S REPRESENTATIVE FOR APPROVAL AS FOLLOWS:
 - A. MANUFACTURER'S DATA: FOR EACH MANUFACTURED ITEM, DESCRIPTIVE LITERATURE, CATALOG CUTS, CATALOG MODEL NO., AND ALL OTHER INFORMATION NECESSARY TO ESTABLISH CONTRACT COMPLIANCE.
- 7.0 TESTS:
 - 7.01 GENERAL: UPON COMPLETION OF THIS PORTION OF THE WORK, AND PRIOR TO ITS ACCEPTANCE BY THE OWNER, MAKE ALL REQUIRED TESTS AND SECURE ALL REQUIRED APPROVALS FROM AGENCIES HAVING JURISDICTION.
 - 7.02 TESTS: FURNISH ALL REQUIRED LABOR, MATERIALS AND EQUIPMENT FOR TESTING AND PROVING TIGHT ANY AND ALL WORK AND PIPING, REPAIR OR REPLACE ANY EQUIPMENT, PIPING MATERIALS AND WORKMANSHIP FOUND TO BE DEFECTIVE OR UNSATISFACTORY. TEST ALL PIPING IN AS LARGE A SECTION AS POSSIBLE AND BEFORE COVERING OR CONCEALING.
- 8.0 INSUBSTRUCTIONS:

WHEN ALL REQUIRED APPROVALS OF THIS PORTION OF THE WORK HAVE BEEN OBTAINED, AND AT A TIME DESIGNATED BY THE OWNER, THOROUGHLY DEMONSTRATE TO THE OWNER'S MAINTENANCE PERSONNEL THE OPERATION AND MAINTENANCE OF ALL ITEMS INSTALLED UNDER THE WORK OF THIS SECTION.
- 9.0 CLEANING:

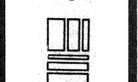
UPON COMPLETION OF THIS PORTION OF THE WORK, PROMPTLY REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM THIS OPERATION, AND CLEAN THE AREA AS REQUIRED.
- 10.0 WARRANTY:

THE CONTRACTOR SHALL WARRANT HIS WORK, BOTH LABOR & MATERIAL, FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF WORK ACCEPTANCE BY THE OWNER.



4195 Chestnut Street
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92501 714/684-4011

MATHIAUDHU ENGINEERING
OFFICE OF 288-206
3903 BROCKTON AVE., SUITE 5, RIVERSIDE, CA 92501



ALTERATIONS TO THE OFFICE AREA
**RIVERSIDE COMMUNITY CENTER
CITY OF RIVERSIDE**
2060 UNIVERSITY AVE. RIVERSIDE, CALIFORNIA

**FLOOR PLAN, NOTES,
SCHEDULE AND
SPECIFICATIONS**

REVISIONS
1-25-88

DRAWN BY
CJ/SM

DATE:
SEP 14, 1987
JOB NUMBER

SHEET NO.
OF **M-1**

Plan No. 0625

