EXHAUST FAN SCHEDULE

MARK	MFR & MODEL	HP	VOLT	PHASE	CFM	S.P	MAX RPM	DRIVE	REMARKS	WT.
EF 1	GREENHECK GB 18-3	1/3	120	1	2600	1/4"	750	BELT	2 SPEED MOTOR COMPLETE WITH BACKDRAFT DAMPER AND BIRDSCREEN. INTERLOCK WITH EMS. PROVIDE GREENHECK "SOUND CURB".	100#
EF 2	GREENHECK SP-17	1.0 FLA	120	1	155	1/8"	1550	DIRECT	COMPLETE WITH BACKDRAFT DAMPER AND FULL SIZE DISCHARGE TO ROOF CAP. INTERLOCK WITH EMS.	20#
EF 3	GREENHECK SP-15	0.75 FLA	120	1	90	1/8"	1050	DIRECT	COMPLETE WITH BACKDRAFT DAMPER AND FULL SIZE DISCHARGE TO ROOF CAP. INTERLOCK WITH EMS.	20#
EF 4	GREENHECK SP-27	2.5 FLA	120	1	340	1/8"	1550	DIRECT	COMPLETE WITH BACKDRAFT DAMPER AND FULL SIZE DISCHARGE TO ROOF CAP. INTERLOCK WITH EMS.	25#
EF 5	GREENHECK GB 10-4	1/4	120	1	630	1/4"	980	BELT	COMPLETE WITH BACKDRAFT DAMPER AND BIRDSCREEN. INTERLOCK W/ EMS.	50#
EF 6	GREENHECK SP-27	2.5 FLA	120	1	340	1/8"	1550	DIRECT	PROVIDE WALL MOUNTED SPEED CONTROL.	25#

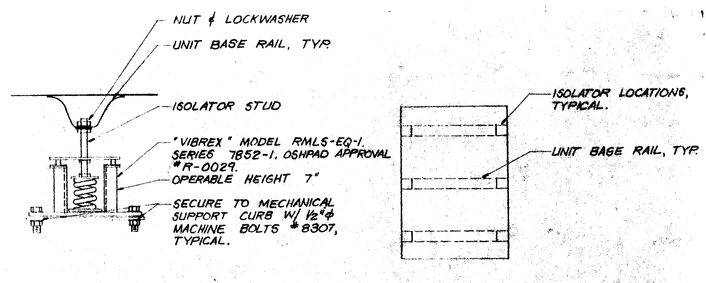
GRILLE SCHEDULE

MARK	DUTY	DESCRIPTION
A	CEILING SUPPLY	BARB-AIRE SFSV LOUVER FACE SURFACE MOUNT DIFFUSER. BLACK INTERIOR OBD, #7 FINISH.
B	CEILING SUPPLY	BARB-AIRE PSLV PERFORATED FACE LAY-IN DIFFUSER. BLACK INTERIOR OBD, #7 FINISH.
C	CEILING SUPPLY	BARB-AIRE PSSV PERFORATED FACE SURFACE MOUNT DIFFUSER. BLACK INTERIOR OBD, #7 FINISH.
D	CEILING RETURN OR EXHAUST	BARB-AIRE TXEV ALUMINUM EGGCRATE SURFACE MOUNT RETURN. BLACK INTERIOR OBD. COUNTERSUNK SCREW HOLES. #7 FINISH.
E	CEILING RETURN OR EXHAUST	BARB-AIRE TXDV ALUMINUM EGGCRATE LAY-IN RETURN. BLACK INTERIOR OBD.
F	CEILING OR WALL RETURN OR EXHAUST	BARB-AIRE GMR SURFACE MOUNT RETURN WITH REMOVABLE CORE AND #7 FINISH. FURNISH WITHOUT INDENTS.
G	OUTDOOR AIR INTAKE LOUVER	WONDER-METAL MODEL L-445-F GALV. STEEL LOUVER WITH EXTERIOR MOUNTING FLANGE AND 1/4" MESH BIRDSCREEN. PROVIDE BAKED ENAMEL FINISH, COLOR TO MATCH BUILDING EXTERIOR. SUBMIT MANUFACTURES COLOR CHART.
H	EXHAUST AIR LOUVER	WONDER-METAL MODEL L-245-F GALV. STEEL LOUVER WITH EXTERIOR MOUNTING FLANGE AND 1/4" MESH BIRDSCREEN. PROVIDE BAKED ENAMEL FINISH, COLOR TO MATCH BUILDING EXTERIOR. PROVIDE SHOP FAB S/M SLEEVE WHEN INCORPORATING WITH BACKDRAFT DAMPER AS SHOWN ON THE DRAWINGS.
J	WALL SUPPLY	BARB-AIRE GMAV WALL MOUNTED SUPPLY GRILLE. OBD, #7 FINISH.

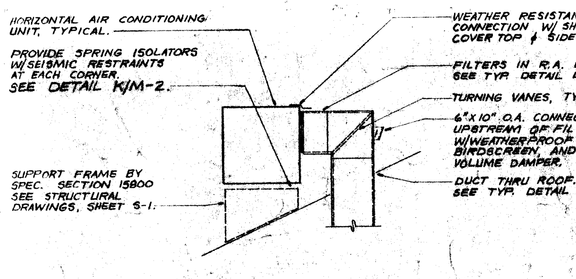
AIR CONDITIONING EQUIPMENT SCHEDULE

MARK	DUTY	ELECTRICAL HP	VOLTS	Ø	DESCRIPTION	WT.
1	AIR COOLED CHILLER	158 RLA 356 LRA	460	3	McQUAY MODEL ALR-060C, COOLING 168 GPM OF WATER (WITH 25% BY WEIGHT OF INHIBITED PROPYLENE GLYCOL) FROM 30.0° TO 24.0° AT 85° AMBIENT, 15.0' MAX. W.P.D. 1.30 KW/TON MAXIMUM POWER CONSUMPTION AT SPECIFIED CONDITIONS. COMPLETE WITH TWO SEMI-HERMETIC COMPRESSORS & DUAL INDEPENDENT REFRIGERATION CIRCUITS W/TOTAL UNLOADING TO 29% OF FULL-LOAD, COMPRESSOR LEAD-LAG SWITCH, CONTROL TRANSFORMER, WATER FLOW SWITCH, COMPRESSOR LOCK-OUT TIMER, CONDENSER COIL GUARD, SINGLE POINT POWER CONNECTION, PART-WINDING START, AND PHASE FAILURE/REVERSAL CUT-OUT. UNIT SHALL BE EQUIPPED FOR ICE BUILDING OPERATION AND HAVE DUAL SETPOINT CAPABILITY -- STANDARD MODE SHALL BE NON-ICE BUILDING WITH THE CONTROL DEENERGIZED. FACTORY START-UP BY CHILLER MANUFACTURER. 10.0 MINIMUM EER AT ARI STANDARD 590 RATING CONDITIONS. SEE SPECIFICATIONS FOR COMPLETE DESCRIPTION.	5000#
2	ICE STORAGE TANK	-	-	-	CALMAC LEVLOAD MODEL 1190, WITH CAPACITY FOR 190 TOTAL TON-HOURS. 12.0 PSI MAXIMUM W.P.D. AT 80 GPM OF 24.0° AVERAGE CHARGING WATER. COMPLETE W/ 2" BOTTOM INSULATION PAD AND ALUMINUM OUTER COVER. SEE SPECS FOR COMPLETE DESCRIPTION. SEE MANUFACTURER'S SPECIFICATIONS FOR "EXPOSED TOP BURIED LEVLOAD TANKS" AND TECHNICAL GUIDE #18-101. TANK CAPACITY SHALL MEET ABOVE SPECIFIED CONDITIONS BUT FLOW SHALL BE ADJUSTED TO 56 GPM AT THIS TIME AND SHALL CHARGE TO 162 LATENT TON-HOURS IN 12 HOURS CHARGING TIME. TANK SHALL BE 100% NON-FERROUS AND CAPABLE OF FREEZING SOLID WITHOUT DAMAGE. PROVIDE ONE LEVEL-LOAD ICE INVENTORY METER FOR ENTIRE SYSTEM WITH 4-20 MA TRANSDUCER FOR OUTPUT.	17000#
3	BOILER	10 FLA	120	1	RAYPAK MODEL W-1083 OUTDOOR BOILER, HEATING 70 GPM OF WATER FROM 140° TO 165°, 7.0' W.P.D. 1,083,000 BTUH INPUT AND 866,000 BTUH OUTPUT HEATING CAPACITY, NATURAL GAS. COMPLETE WITH 5-YEAR LIMITED HEAT EXCHANGER WARRANTY, ECONOMASTER PUMP TIME DELAY, FLOW SWITCH, PRESSURE RELIEF VALVE, CONTROL TRANSFORMER, 2-STAGE GAS VALVE, AND ACCESSORIES PER CALIFORNIA CODE. A.G.A. CLASSIFIED AND ASME STAMPED.	750#
4	SYSTEM PUMP	5	460	3	PACO TYPE L, MODEL 2095-3, CENTRIFUGAL PUMP DELIVERING 125 GPM @ 55' TDH, 65% EFFICIENCY, 1750 RPM. PUMP SHALL BE NON-OVERLOADING THROUGHOUT ENTIRE CURVE. COMPLETE WITH MECHANICAL SEALS, SUCTION AND DISCHARGE GAUGE FITTINGS.	350#
5	CHILLER PUMP	2	460	3	PACO TYPE VL, MODEL 3070-7, CENTRIFUGAL IN-LINE PUMP DELIVERING 168 GPM @ 29' TDH, 70% EFFICIENCY, 1750 RPM. COMPLETE WITH MECHANICAL SEALS, SUCTION AND DISCHARGE GAUGE FITTINGS. UNIT SHALL BE CAPABLE OF HANDLING A WATER/GLYCOL MIXTURE AT 24°.	250#
6	ICE BUILDER PUMP	3	460	3	PACO TYPE L, MODEL 2570-7, CENTRIFUGAL PUMP DELIVERING 168 GPM @ 38' TDH, 72% EFFICIENCY, 1750 RPM. COMPLETE WITH MECHANICAL SEALS, SUCTION AND DISCHARGE GAUGE FITTINGS. UNIT SHALL BE CAPABLE OF HANDLING A WATER/GLYCOL MIXTURE AT 24°.	200#
7	BOILER PUMP	1	460	3	PACO TYPE L, MODEL 1570-5, CENTRIFUGAL PUMP DELIVERING 70 GPM @ 26' TDH, 70% EFFICIENCY, 1750 RPM. PUMP SHALL BE NON-OVERLOADING THROUGHOUT ENTIRE CURVE. COMPLETE WITH MECHANICAL SEALS, SUCTION AND DISCHARGE GAUGE FITTINGS.	125#
8	UNIT VENTILATOR	1/6	120	1	MSI MODEL TBW-51500 FOR 2-PIPE CHILLED/HOT WATER SYSTEM, 1500 CFM, DIRECT DRIVE 3-SPEED MOTOR. 45,400 BTUH TOTAL AND 41,000 BTUH SENSIBLE COOLING CAPACITY AT 80/64 ENTERING AIR WITH A 45° ENTERING WATER/GLYCOL SOLUTION. 8.0' MAXIMUM WATER PRESSURE DROP. 68,000 BTUH HEATING CAPACITY WITH 4.0 GPM OF 140° HOT WATER. UNIT COMPLETE WITH FACTORY MOUNTED ECONOMIZER DAMPERS, SAMPLING TUBE, 5 YEAR UNIT PARTS WARRANTY AND A MINIMUM OF 9.2 SQUARE FEET OF O.A. AND R.A. FILTER AREA. TYPE 'W' CABINET. SEE SPECIFICATIONS.	700#
9	HEATING-COOLING UNIT	15.3 FLA	460	3	McQUAY MODEL EPGD-048, 1750 CFM @ 0.4" E.S.P., 3/4 HP MULTI-SPEED MOTOR, DIRECT DRIVE. 43,500 BTUH TOTAL AND 41,000 BTUH SENSIBLE COOLING CAPACITY AT 80/63 AND 105° AMBIENT. 75,000 BTUH INPUT CAPACITY AND 59,000 BTUH HEATING OUTPUT CAPACITY, NATURAL GAS. COMPLETE WITH CRANKCASE HEATER, 0 - 100% ECONOMIZER CYCLE WITH CONTROLS AND DAMPERS, AND (2) 16" x 25" x 1" 30% EFFICIENT FILTERS LOCATED IN UNIT. 9.0 MINIMUM EER.	750#
10	HEATING-COOLING UNIT	11.0 FLA	460	3	McQUAY MODEL EPGD-036, 1200 CFM @ 0.4" E.S.P., 1/4 HP MULTI-SPEED MOTOR, DIRECT DRIVE. 33,800 BTUH TOTAL AND 32,200 BTUH SENSIBLE COOLING CAPACITY AT 80/63 AND 105° AMBIENT. 50,000 BTUH INPUT CAPACITY AND 36,000 BTUH HEATING OUTPUT CAPACITY, NATURAL GAS. COMPLETE WITH CRANKCASE HEATER, 0 - 100% ECONOMIZER CYCLE WITH CONTROLS AND DAMPERS, AND (2) 16" x 25" x 1" 30% EFFICIENT FILTERS LOCATED IN UNIT. 8.2 MINIMUM EER.	675#
11	HEATING-COOLING UNIT	17.0 FLA	208	1	McQUAY MODEL EPGH-024, 800 CFM @ 0.4" E.S.P., 1/4 HP MULTI-SPEED MOTOR, DIRECT DRIVE. 22,500 BTUH TOTAL AND 19,700 BTUH SENSIBLE COOLING CAPACITY AT 80/63 AND 105° AMBIENT. 50,000 BTUH INPUT CAPACITY AND 36,000 BTUH HEATING OUTPUT CAPACITY, NATURAL GAS. COMPLETE WITH CRANKCASE HEATER, 0 - 25% MANUAL O.A. DAMPER, AND (1) 20" x 25" x 1" 30% EFFICIENT FILTER LOCATED IN UNIT DUCTWORK. 9.0 MINIMUM EER.	400#
12	UNIT VENTILATOR	1/6	120	1	MSI MODEL TBW-41250 FOR 2-PIPE CHILLED/HOT WATER SYSTEM, 1250 CFM, DIRECT DRIVE 3-SPEED MOTOR. 29,500 BTUH TOTAL AND 29,000 BTUH SENSIBLE COOLING CAPACITY AT 80/64 ENTERING AIR WITH 6 GPM OF 45° ENTERING WATER/GLYCOL SOLUTION. 4.0' MAXIMUM WATER PRESSURE DROP. 36,800 BTUH HEATING CAPACITY WITH 3.6 GPM OF 140° HOT WATER. UNIT COMPLETE WITH FACTORY MOUNTED ECONOMIZER DAMPERS, SAMPLING TUBE, 5 YEAR UNIT PARTS WARRANTY AND A MINIMUM OF 8.0 SQUARE FEET OF O.A. AND R.A. FILTER AREA. SEE SPECIFICATIONS.	650#
13	UNIT HEATER	1.0 FLA	120	1	MODINE MODEL PAE 50 SUSPENDED UNIT HEATER, 675 CFM @ 0" E.S.P., 1550 RPM, DIRECT DRIVE. 40,000 BTUH INPUT AND 32,000 BTUH OUTPUT CAPACITIY, NATURAL GAS. COMPLETE WITH ROOM THERMOSTAT, INTERMITTENT DUTY PILOT IGNITION WITH LOCKOUT. INTERLOCK WITH BYPASS TIMER.	75#
14	FAN COIL	1/6	120	1	McQUAY HORIZONTAL HIDE-AWAY TYPE FAN-COIL MODEL SHD-081B, 650 CFM @ .4" ESP, 1/6 HP MOTOR, 3-SPEED, DIRECT DRIVE. 18,400 BTUH TOTAL AND 16,150 BTUH SENSIBLE COOLING CAPACITY AT 80/63 E.A.T. AND 3.7 GPM OF 45° ENTERING WATER, 3 ROW COIL, 1.9' MAXIMUM W.P.D. 39,000 BTUH HEATING CAPACITY WITH 60° E.A.T. AND 3.7 GPM OF 160° ENTERING HOT WATER THRU THE SAME COIL. COMPLETE WITH SUPPLY AND RETURN AIR PLENUMS AND (1) 15" x 18" x 1" 30% EFFICIENT FILTER(S) LOCATED IN FILTER SECTION.	100#

NOTES:
1. ALL ROOF MOUNTED MECHANICAL EQUIPMENT TO BE PROVIDED WITH SPRING ISOLATORS, WITH SEISMIC RESTRAINTS.
2. PROVIDE FIELD FABRICATED CURB FOR ALL ROOF MOUNTED MECHANICAL EQUIPMENT BY SPEC SECTION 15800. SEE STRUCTURAL DETAIL SHEETS & GENERAL NOTE 4 SHEET M-1.



DETAIL (K/M-2)
NO SCALE



DETAIL (J/M-2)
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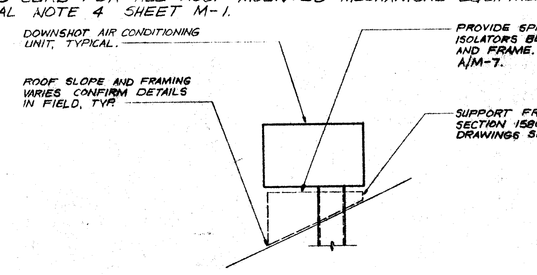
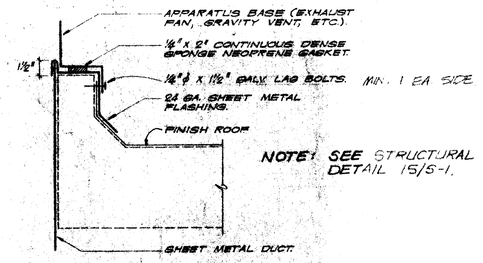
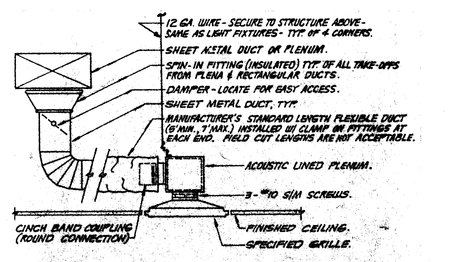


DETAIL (H/M-2)
NO SCALE

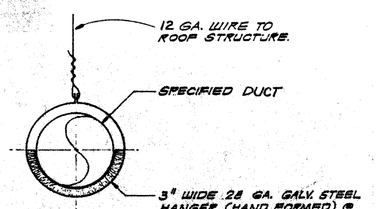


NOTE: SEE STRUCTURAL DETAIL 15/S-1.

DETAIL (G/M-2)
NO SCALE
NOTE: SEE ARCHITECTURAL & STRUCTURAL DRAWINGS FOR TYPICAL CURB & ROOF DETAILS.

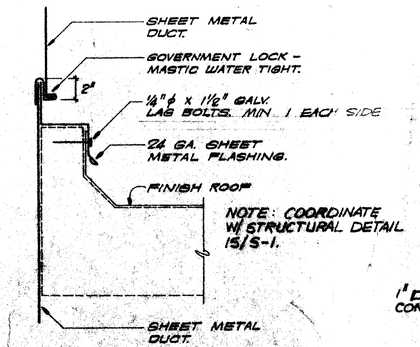


DETAIL (A/M-2)
NO SCALE
NOTE: IF MAIN DUCT DOES NOT PERMIT SPIN-IN FITTING, SEE DETAIL E/M-2.

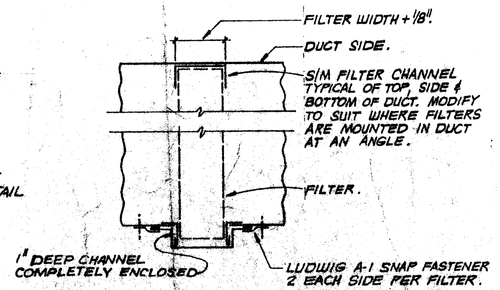


TYPICAL DUCT HANGER

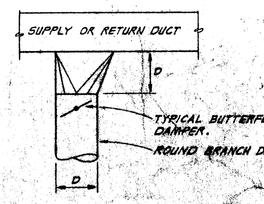
DETAIL (B/M-2)
NO SCALE
INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS LOCATED IN BUILDINGS SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED.



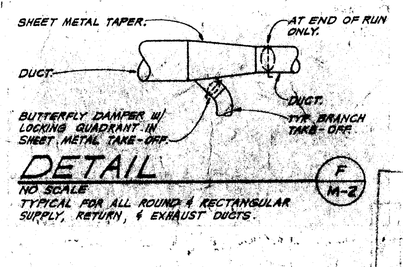
DETAIL (C/M-2)
NO SCALE
NOTE: SEE ARCHITECTURAL & STRUCTURAL DRAWINGS FOR TYPICAL CURB & ROOF DETAILS.



FILTER ACCESS COVER
DETAIL (D/M-2)
NO SCALE



DETAIL (E/M-2)
NO SCALE
NOTE: MINIMUM AREA OF RECTANGULAR TAP-IN SHALL BE 125% OF ROUND BRANCH DUCT. HEIGHT OF TAP-IN SHALL BE THE SAME AS ROUND BRANCH DUCT DIAMETER.



DETAIL (F/M-2)
NO SCALE
TYPICAL FOR ALL ROUND & RECTANGULAR SUPPLY, RETURN, & EXHAUST DUCTS.

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PROJECT

BAKERSFIELD CITY SCHOOL DISTRICT

FRANKLIN ELEMENTARY SCHOOL MODERNIZATION

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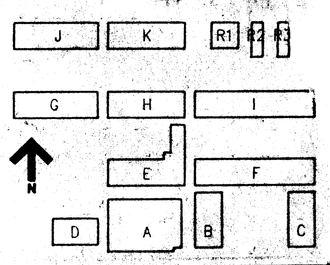
WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSION. CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.

KEY PLAN



BAKERSFIELD CITY SCHOOL DISTRICT
BOARD OF EDUCATION

DATE	APPROVED

DATE	ISSUED FOR
9-3-91	BIDDING

DATE	REVISIONS
	1
	2
	3
	4
	5

SHEET TITLE
SCHEDULES AND DETAILS

APPROVED/ARCHITECT
CHECKED JFM
DRAWN BY MJB
DATE 8-1-89
PROJECT NO. 86-216 FK

SHEET NUMBER
M - 2
OF 7 SHEETS