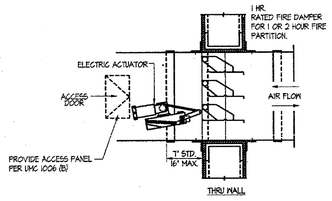
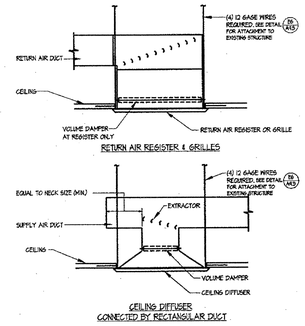


COMBINATION FIRE/SMOKE DAMPER SPECIFICATIONS:

DAMPER MUST BE LABELED AND LISTED BY CALIFORNIA STATE FIRE MARSHAL AND/OR UNDERWRITERS LABORATORIES AS A FIRE DAMPER, MUST ALSO BE LEAKAGE RATED AND LABELED UNDER UNDERWRITERS LABORATORIES STD. 555S. METAL TO METAL NON-DEGRADABLE SEALS ALLOWING NO MORE THAN 15 CFM/FT SQ. AT 1" W.G. TO 350 °F FOR A FULL 90 MINUTES RATING. CAN BE MOTOR OPERATED. TORQUE REQUIRED TO MAINTAIN LEAKAGE RATE NOT TO EXCEED 0 LBS TORQUE. DAMPERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND/OR STATE FIRE MARSHAL LISTING NO. 3225. POTTORFF CO. INC. (LISTING NO. 3225-0366-110) OR APPROVED EQUAL.

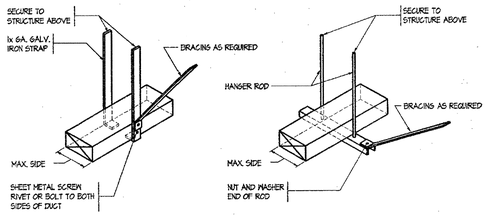
COMBINATION FIRE & SMOKE DAMPER DETAIL (2)

SCALE: NTS



REGISTER AND DIFFUSER CONNECTION (1)

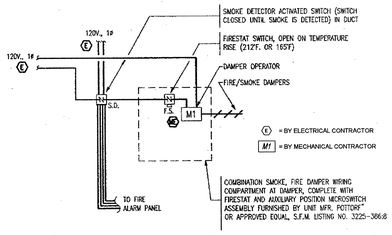
SCALE: NTS



NOTE:
ANCHORAGE OF DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL AND PLUMBING SYSTEMS, LATEST EDITION

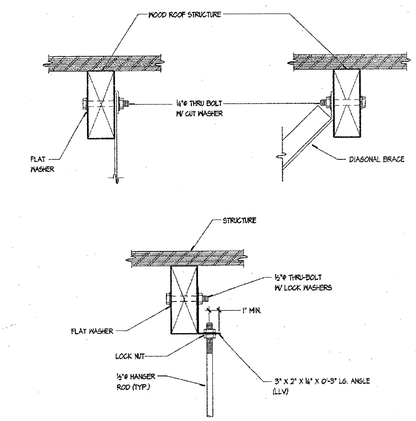
DUCT HANGERS (4)

SCALE: NTS



COMBINATION FIRE & SMOKE DAMPER CONTROL (3)

SCALE: NTS



DUCT BRACING (5)

SCALE: NTS

DIFFUSER/REGISTER SCHEDULE

CFM	DIFFUSER (NECK SIZE)	REGISTERS (NECK SIZE) CEILING	REGISTERS (NECK SIZE) WALL
50–225	8x8	8x8	12x6
230–325	10x10	10x10	14x8
330–450	12x12	12x12	18x8
455–675	14x14	14x14	22x10
680–875	16x16	16x16	26x10
880–1075	18x18	18x18	32x10
1080–1375	20x20	20x20	34x12
1380–1675	22x22	22x22	36x14
1680–2000	24x24	24x24	36x18

AIR CONDITIONING NOTES:

1. CONTRACTOR SHALL COORDINATE ALL DUCT LOCATIONS WITH ELECTRICAL, STRUCTURAL AND OTHER TRADES.
2. ALL DUCT DIMENSIONS ARE NET CLEAR DIMENSIONS WHERE SOUND INSULATION IS SPECIFIED ON THE INSIDE OF DUCTS. SPECIFIED DIMENSIONS ARE CLEAR DIMENSIONS AFTER INSULATION HAS BEEN INSTALLED.
3. ALL LOUVERED OPENINGS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SECTION OF THE SPECIFICATIONS.
4. ALL CONCEALED SPACES USED TO CONVEY CIRCULATING AIR SHALL BE OF INCOMBUSTIBLE MATERIALS AND CONTAIN NO COMBUSTIBLES.
5. ALL DUCTS AND PLENUMS USED TO CONVEY CONDITIONED AIR OR VENTILATION AIR SHALL BE MADE OF CONTINUOUS SHEET METAL.
6. TRANSVERSE JOINTS FOR ALL AIR SUPPLY DUCTS INSTALLED WHERE AIR LEAKAGE WOULD BE NON-BENEFICIAL TO THE OCCUPIED AREA TEMPERATURE REQUIREMENTS SHALL BE SEALED PER THE SPECIFICATIONS.
7. AUTOMATIC TEMPERATURE CONTROL DEVICE FOR REGULATION OF SPACE TEMPERATURE SHALL BE CAPABLE OF BEING SET FROM 55°F TO 85°F AND HAVE THE ABILITY TO OPERATE THE HEATING AND COOLING IN SEQUENCE, IF BOTH ARE PROVIDED. PROVIDE A RANGE OF UP TO 10°F BETWEEN FULL HEATING AND TO P CONTROL SHALL BE ADJUSTED COOLING AND HAVE A CAPABILITY OF TERMINATING ALL HEATING FULL TEMPERATURE NO MORE THAN 70°F AND COOLING AT A TEMPERATURE AT LEASTS THAN 78°F.
8. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF REGARDING ANY AND ALL PECULIARITIES AND LIMITATIONS OF THE SPACE AVAILABLE FOR THE INSTALLATION OF ALL WORK AND MATERIALS HEREAFTER SPECIFIED. NOT CONTRACTOR SHALL NOT FABRICATE ANY DUCTWORK UNTIL HE HAS VERIFIED IN THE FIELD THAT THE SHOWN DUCTWORK CAN BE INSTALLED IN ABRACING OF MECH. EQUIPMENT, PIPING, DUCTS PER SMACNA LOCATED SPACE.
9. REQUIREMENTS. SEISMIC HANGERS AND LEVEL AA.
10. CONTRACTOR SHALL COORDINATE ALL CEILING DIFFUSERS, GRILLES AND REGISTER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
11. CONTRACTOR SHALL NOT NOTCH, OR NOT SPECIFICALLY DETAILED ON THE APPROVED MEMBERS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT, STRUCTURAL ENGINEER AND DSA.
12. CONTRACTOR SHALL NOT CUT OR BORE ANY STRUCTURAL
13. ALL RECTANGULAR DUCT ELBOWS SHALL BE EQUIPPED WITH TURNING VANES.
14. ALL BALANCING VOLUME DAMPERS SHALL HAVE ACCESS FOR ADJUSTING AND SERVICING.
15. ALL SUPPLY AND RETURN AIR DUCTWORK INSULATION SHALL HAVE MINIMUM R VALUE OF R-8 PER TITLE 24 IN UNCONDITIONED SPACE AND R-4.2 IN INDIRECTLY CONDITIONED SPACE.

ANCHORAGE/BRACING

ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE IN ANY DIRECTION USING THE FOLLOWING CRITERIA: PER SECTION 1632A AND PER TABLE 16A OF THE VOLUME 2, TITLE 24, 2001 CBC.

WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL ENGINEER AND THE FIELD ENGINEER OF THE OFFICE OF THE STATE ARCHITECT.

MECHANICAL LEGEND

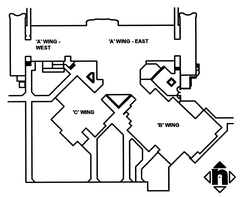
SYMBOLS	DESCRIPTION
	DUCTWORK
	DUCT SECTION – SUPPLY
	DUCT SECTION – EXHAUST
	DUCT SECTION – RETURN
S	SMOKE SENSOR
M	MOTORIZED DAMPER
C	COMBINATION SMOKE AND FIRE DAMPER
	MANUAL VOLUME DAMPER (MVD)
	FUSIBLE LINK FIRE DAMPER (FLFD)
	CONCEALED DAMPER REGULATOR
	EXIST. DUCT, REGISTER TO BE REMOVED
C.D.	CONDENSATE DRAIN
S.A.	SUPPLY AIR DUCT SINGLE LINE
R.A.	RETURN AIR DUCT (SINGLE LINE)
E.A.	EXHAUST AIR DUCT (SINGLE LINE)
	ELBOWS WITH TURNING VANES
D	DUCT DROP
R	DUCT RISE
	DUCT WITH SOUND INSULATION
	BRANCH DUCT WITH EXTRACTOR
E	FURNISHED, INSTALLED AND WIRED BY ELECTRICAL
ME	FURNISHED AND INSTALLED BY MECHANICAL, WIRED BY ELECTRICAL
A.P.	ACCESS PANEL
C.D.	CEILING DIFFUSER
E.A.R.	EXHAUST AIR REGISTER
E.A.	EXHAUST AIR
NK.	NECK
O.A.	OUTSIDE AIR
R.A.R.	RETURN AIR REGISTER
R.A.	RETURN AIR
S.A.R.	SUPPLY AIR REGISTER
S.A.	SUPPLY AIR
S.I.	SOUND INSULATION
T.A.G.	TRANSFER AIR GRILLE
T	THERMOSTAT – 0'48"A.F.F. (46"A.F.F. IF ABOVE CASEWORK OR OTHER OBSTRUCTION)
A.F.F.	ABOVE FINISHED FLOOR

TO

HMC ARCHITECTS
3546 CONCOURS STREET
ONTARIO, CALIFORNIA 91764
TELEPHONE: 909.989.9979
FAX: 909.483.1400
WWW.HMCARCHITECTS.COM
Architecture . Planning . Interior Design

275 W. Hospitality Lane, Suite #100
San Bernardino, CA 92408
Phone: 909.890.3700
Fax: 909.890.3770
Email: caddd@designwesteng.com
DESIGN WEST ENGINEERING
MECHANICAL • ELECTRICAL • ENERGY CONSULTANTS

KEY PLAN



AGENCY APPROVAL

FILE NO. -

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
04-106133
AC FLS SS
DATE

CONSTRUCTION DOCUMENTS

Owner

SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT
777 NORTH F STREET
SAN BERNARDINO,CA. 92410

HMC ARCHITECTS 2007

No	Revisions/Submissions	Date
1	DSA ADDENDUM # 1	02/10/10

Consultant Seal

REGISTERED PROFESSIONAL ENGINEER STEVEN M. VERONA No. 23209 EXP. 9-30-2011 MECHANICAL STATE OF CALIFORNIA

Consultant
DESIGN WEST ENGINEERING
275 W. Hospitality Lane, Suite # 100
San Bernardino, CA 92408 Phone: 909.890.3700
Email: caddd@designwesteng.com

Project Title
RAMONA-ALESSANDRO ELEMENTARY SCHOOL MODERNIZATION
670 RAMONA AVENUE, SAN BERNARDINO, CA 92411

Drawing Title
MECHANICAL LEGEND
NOTES & SCHEDULES

Architect Seal

LICENSED ARCHITECT TIMOTHY J. PATTERSON No. C-19759 EXP. 2-29-11 STATE OF CALIFORNIA

Designed TRW/VF	Project No 3137118.000
Drawn TRW/VF	Scale AS NOTED
Checked SJ	Drawing No
Reviewed -	M1.0
Date 03/19/04	of 10-014

" BID ISSUANCE SET"