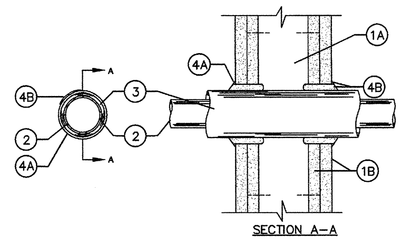
SYSTEM NO. W-L-5001



SECTION A-A

F RATINGS- 1 AND 2 HR (SEE ITEM 1)
T RATINGS- 3/4, 1 AND 1 1/2 HR (SEE ITEM 3)
L RATING AT AMBIENT- 2 CFM/SQ FT
L RATING AT 400F- LESS THAN 1 CFM/SQ FT

1. WALL ASSEMBLY- THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 INCH (51 BY 102 MM) LUMBER SPACED 16 INCH (406 MM) OC WITH NOM 2 BY 4 INCH (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3 5/8 INCH (92 MM) WIDE BY 1 3/8 INCH (35 MM) DEEP CHANNELS SPACED MAX 24 INCH (610 MM) OC.
   B. GYPSUM BOARD*- NOM 5/8 INCH (16 MM) THICK, 4 FT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE, AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14 1/2 INCH (368 MM) INCH FOR WOOD STUD WALLS AND 18 INCH (457N MM) FOR STEEL STUD WALLS. THE HOURLY F RATING OF THE FIRE STOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.
2. THROUGH PENETRANTS- ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
   A. STEEL PIPE- NOM 12 INCH (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. COPPER TUBING- NOM 16 INCH (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   C. COPPER PIPING- NOM 6 INCH (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. PIPE COVERING*- NOM 1 OR 2 INCH (25 OR 51 MM) THICK HOLLOW CYLINDERICAL HEAVY DENSITY (MIN 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1 INCH (25 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/4 INCH (6 MM) TO MAX 3/8 INCH (10 MM) WHEN NOM 2 INCH (51 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM BOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/2 INCH (13 MM) TO MAX 3/4 INCH (19 MM). SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATAGORY IN BUILDING MATERIAL DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 INCH (25 MM) THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1 1/2 HR WHEN NOM 2 INCH (52 MM) THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.
4. FIRESTOP SYSTEM- INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
   A. FILL, VOID OR CAVITY MATERIALS*- WRAP STRIP- NOM 1/4 INCH (6 MM) THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 INCH (51 MM) WIDE STRIPS. NOM 2 INCH (51 MM) WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX 1 1/4 INCH (32 MM) SUCH THE APPROX 3/4 INCH (19 MM) OF THE WRAP STRIP WITH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP IS REQUIRED WHEN NOM 1 INCH (25 MM) THICK PIPE COVERING IS USED. TWO LAYER OF WRAP STRIP ARE REQUIRED WHEN NOM 2 INCH (51 MM) THICK PIPE COVERING IS USED.

     3M COMPANY-FS-195+
   B. FILL, VOID OR CAVITY MATERIALS*- CAULK OR SEALANT- MIN 1/4 IN (6 MM) DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX 3/4 IN (19 MM) FROM THE WALL SURFACE.

     3M COMPANY-CP 25WB+, IC 15WB+, FIRE DAM 150+ CAULK OR FB-3000 WT SEALANT

*BEARING THE UL CLASSIFICATION MARK

FIRE WALL PENETRATION DETAIL (INSULATED PIPE THROUGH STUD WALL)

NTS | 4

MS — MAGNETIC STARTER WITH H.O.A. SWITCH, INTEGRAL 24V CONTROL POWER TRANSFORMER, 24V HOLDING COIL AND AUXILIARY CONTACTS FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR (DIVISION 16)

EQUIPMENT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR (DIVISION 16).

EQUIPMENT FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR (DIVISION 15).

LINE VOLTAGE WIRING AND CONDUIT FURNISHED BY ELECTRICAL CONTRACTOR.

LOW VOLTAGE CONTROL WIRING AND CONDUIT FURNISHED AND INSTALLED UNDER DIVISION 15. SEE SPECIFICATION SECTIONS 260519 AND 260533 FOR CONDUIT & WIRING REQUIREMENTS. (ALL LOW VOLTAGE WIRING TO BE IN CONDUIT)

DISC. — DISCONNECT SWITCH

C.B. — CIRCUIT BREAKER

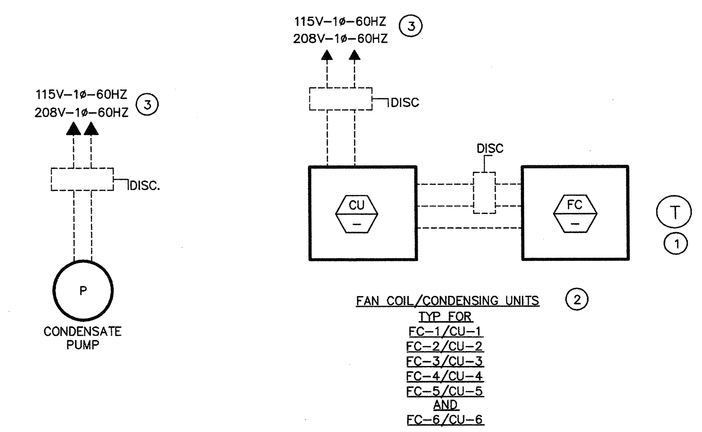
T — THERMOSTAT

DD — DUCT SMOKE DETECTOR FURNISHED UNDER DIVISION 16 AND INSTALLED UNDER DIVISION 15.

S — TEMPERATURE SENSOR

CONTROL WIRING LEGEND

NTS | 1

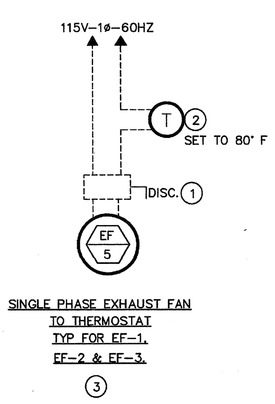


DETAIL NOTES:

1. REMOTE THERMOSTAT FURNISHED BY MAUFACTURER AND INSTALLED BY MECHANICAL CONTRACTOR
2. SEE CONTROL WIRING LEGEND #1 THIS SHEET.
3. SEE EQUIPMENT SCHEDULE FOR VOLTAGE.

FAN COIL UNIT CONTROL DIAGRAM

NTS | 2



DETAIL NOTES:

1. ALL WIRING AND EQUIPMENT SHOWN DASHED SHALL BE FURNISHED AND INSTALLED BY DIVISION 16000 - ELECTRICAL. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR COMPLETE DETAILS.
2. LINE VOLTAGE THERMOSTAT BY MECHANICAL CONTRACTOR.
3. SEE CONTROL WIRING LEGEND #1 THIS SHEET.

EXHAUST FAN CONTROL WIRING DIAGRAM

NTS | 3

-

NTS | 9

-

NTS | 7

-

NTS | 5

-

NTS | 10

-

NTS | 8

-

NTS | 6

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NO. C13165
REN.: MAY. 2011
STATE OF CALIFORNIA

Consultant and Seal

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REGISTERED PROFESSIONAL ENGINEER
CHRIS E. RADTKE
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Exp. 9/30/10
MECHANICAL
STATE OF CALIFORNIA

Agency Approval

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPL. 04-110031
AC ___ FLS ___ SS RH
DATE NOV 2 4 2009

No.	Date	Revision/Issue
	12/08/08	DSA SUBMITTAL
	02/11/09	DSA SUBMITTAL
	5/11/09	DSA BACKCHECK
	12/15/2011	BID SET

Project Name

MUIR
FUNDAMENTAL
SCHOOL MODERNIZATION

1951 MABURY ST.
SANTA ANA, CA 92707

Checked By: VR
Drawn By: PR

Sheet Title

WIRING DIAGRAMS

Sheet Number

M3.1

Project Number: 10021-010-00
Scale: NONE

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