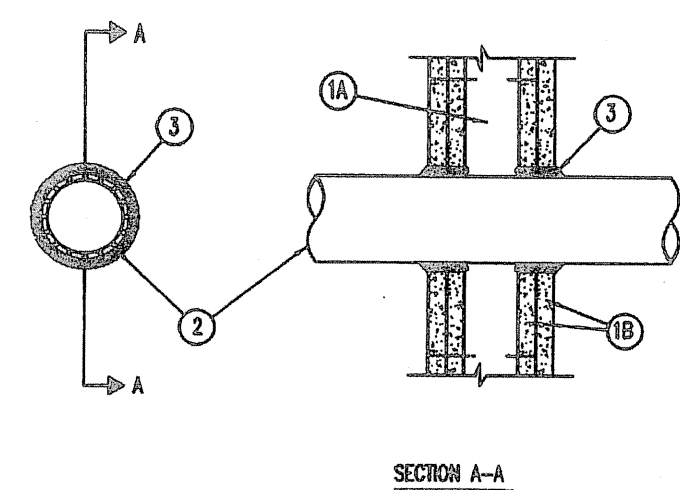


THROUGH-PENETRATION FIRE STOP SYSTEM DETAILS



SECTION A-A  
SYSTEM NO. W-1-1001

- WALL ASSEMBLY - THE 1, 2, 3, OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL OBTAIN THE FOLLOWING CONSTRUCTION FEATURES:
  - STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 HR FIRE RATED ASSEMBLY) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF MAX 2 BY 4 IN LAMBER SPACED 16 IN O.C. WITH HOLES 2 BY 4 IN LAMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MAX 3-5/8 IN WIDE BY 1-3/8 IN DEEP CHANNELS SPACED MAX 24 O.C.
  - GYPSUM BOARD - NOM. 1/2 OR 5/8 IN. THICK 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX. DIM. OF OPENING IS 24 IN.

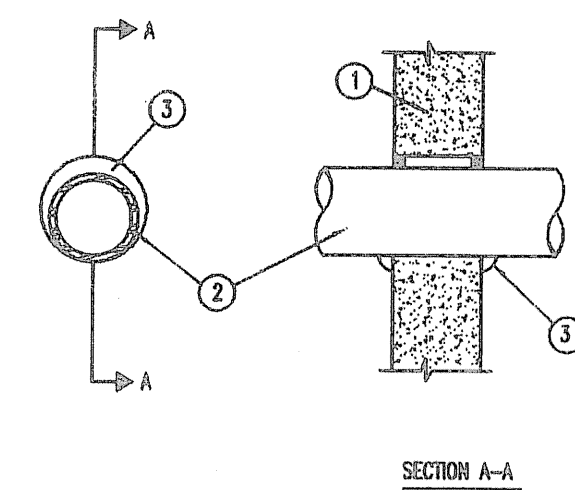
- THROUGH PENETRATION - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRE STOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN. 0 IN. (POINT CONTACT) TO MAX. 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
  - STEEL PIPE - NOM. 2 1/2 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - CONDUIT - NOM. 8 IN. DIA. (OR SMALLER) RIGID STEEL CONDUIT OR NOM. 4 IN. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

- FILL, VOID OR CAVITY MATERIAL - CHALK OR SEALANT - MIN. 5/8, 1-1/4, 1-7/8 AND 2-1/2 IN. THICKNESS OF CHALK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY. APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN. 1/4 IN. DAM BEAD OF CHALK APPLIED TO GYPSUM BOARD/PARTITION SURFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY FIRE RATING OF THE FIRE STOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY FIRE RATING OF THE FIRE STOP SYSTEM IS DEPENDENT UPON THE TYPE OF SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED AS TABULATED BELOW:

MAX PIPE OR CONDUIT DIA. IN.	F RATING HR	T RATING HR
1	1 OR 2	0 1/2, 1 OR 2
1 1/2	3 OR 4	3 OR 4
2	1 OR 2	0
3	3 OR 4	0
4	1 OR 2	0

JM COMPANY - CP 2500+ OR FB-3000 DT.

1 PENETRATION TYPE 1



SECTION A-A  
SYSTEM NO. W-J-1127

F RATING - 2 HR  
T RATING - 1/4 HR

- WALL ASSEMBLY - MIN. 6 IN. (152 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2000 KG/M3) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX DIM OF OPENING IS 10-1/2 INCH (267MM) SEE CONCRETE BLOCK (CBZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR RISES OF UNPARTITIONED.
- THROUGH PENETRATION - ONE METALLIC PIPE, CONDUIT, TUBING OR FLEXIBLE METAL PIPE INSTALLED CONCENTRICALLY OR ECCENTRICALLY WITHIN OPENING. THE ANNULAR SPACE BETWEEN PENETRATION AND PERIPHERY OF OPENING TO BE MIN. 0 IN. (0 MM) (POINT CONTACT) TO MAX. 1-7/8 IN. (48 MM). PENETRATION TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL. THE FOLLOWING TYPES AND SIZES OF PENETRATIONS MAY BE USED:
  - STEEL PIPE - NOM. 8 IN. (203 MM) DIA. (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE.
  - IRON PIPE - NOM. 8 IN. DIA. (203 MM) DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE.
  - CONDUIT - NOM. 4 IN. (102 MM) DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT) OR NOM. 6 IN. (152 MM) DIA. RIGID STEEL CONDUIT.
- FILL, VOID OR CAVITY MATERIAL - CHALK - MIN. 5/8 IN. (16MM) THICKNESS OF CHALK APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN. 1/4 IN. (6 MM) DAM BEAD OF CHALK APPLIED TO PERIPHERY/WALL INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL.

JM COMPANY - CP 1500B OR CP 2300+

2 PENETRATION TYPE 2

NOTE:

"Through Penetration Fire Stop System" details are for reference only. Penetrations through fire-rated floors and walls shall be protected in accordance with CBC Sections 709.6 and 710.2.

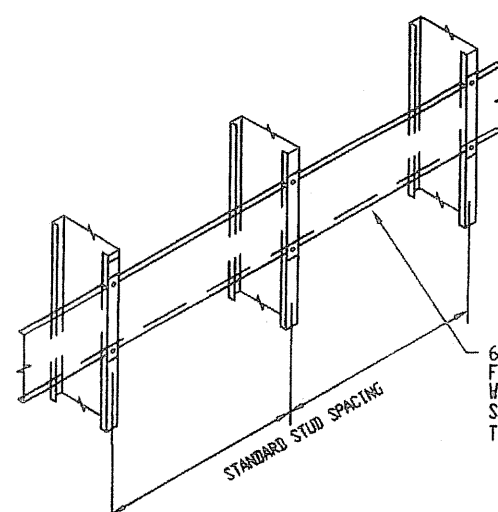
Systems shall be installed in accordance with manufacturer's installation instructions and approved listing. Manufacturer's installation instructions and approved listing shall be provided for review by inspection authorities. Substitutions of or revisions or additions to approved systems shall be submitted to the Inspector of Record and the OSHPD Fire Marshal for field review and approval.

MISCELLANEOUS DETAILS

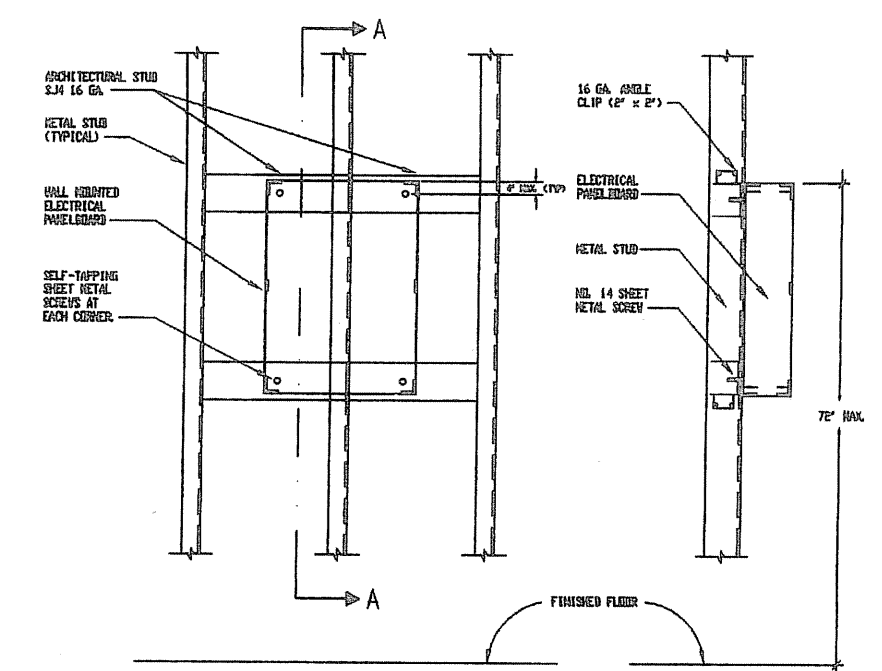
PANEL ANCHORAGE NOTE

ATTACHMENT OF EQUIPMENT WEIGHING LESS THAN 400 LBS. AND SUPPORTED DIRECTLY ON FLOOR OR ROOF STRUCTURE, FURNITURE OR TEMPORARY OR MOVABLE EQUIPMENT AND EQUIPMENT WEIGHING LESS THAN 20 LBS. THAT IS SUPPORTED BY VIBRATION ISOLATION DEVICES SUSPENDED FROM ROOF, WALL OR FLOOR NEED NOT BE DETAILED ON PLANS (CBC TITLE 24, PART 2, SECTION 1630A.1). HOWEVER, SUCH EQUIPMENT MUST BE SUPPORTED AND ANCHORED TO RESIST FORCES PRESCRIBED BY SECTION 1630A.2 AND THE ANCHORAGE SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD AND OSHPD AS PART OF FIELD REVIEWS/INSPECTIONS. THE INSPECTOR OF RECORDS SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

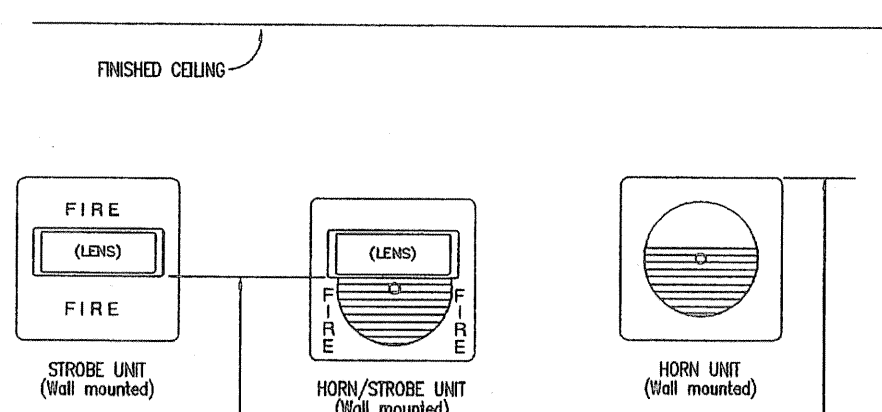
THE PAD-2 POWER SUPPLY/VAC EXTENDER PANELS EACH WEIGH LESS THAN 20 LBS. INCLUDING BATTERIES.



Metal Backing Gypsum Board Wall For Panel Mounting.

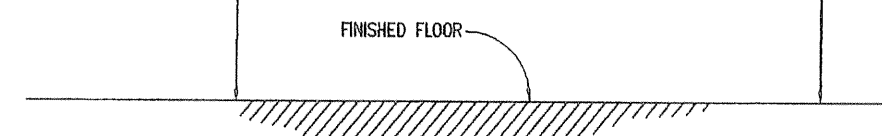


Typical Mounting of Equipment Weighing Over 20 Lbs. (120 Lbs Maximum)

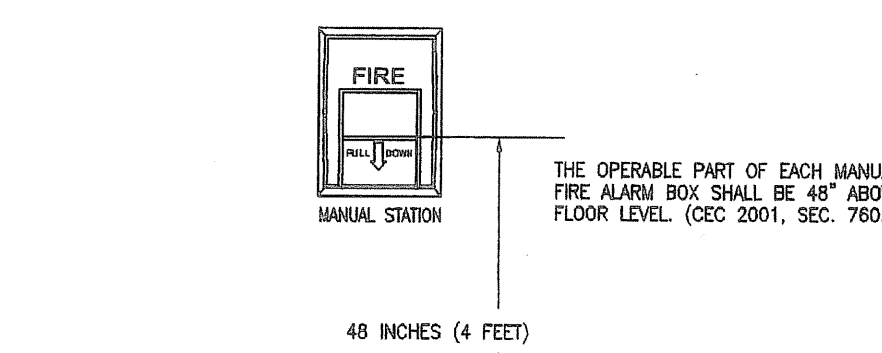


WALL MOUNTED APPLIANCES SHALL BE MOUNTED SUCH THAT THE ENTIRE LEIS IS NOT LESS THAN 80 IN. (2.0 m) AND NOT GREATER THAN 96 IN. (2.4 m) ABOVE THE FINISHED FLOOR (NFPA 72, 2002 EDITION, CHAPTER 7.5.4).

IF CEILING HEIGHTS ALLOW, WALL-MOUNTED APPLIANCES SHALL HAVE THEIR TOPS ABOVE THE FINISHED FLOORS AT HEIGHTS OF NOT LESS THAN 50 IN. (1.3 m) AND BELOW THE FINISHED CEILING AT DISTANCES OF NOT LESS THAN 6 IN. (150 MM). (NFPA 72, 2002 EDITION, CHAPTER 7.4.6.1)



Typical Elevation Detail of Audible & Visual Alarm Device



Typical Elevation Detail of Manual Pull Station

MXL WIRING SCHEDULE

SYMBOL	RECOMMENDED WIRE TYPE	USED ON
A	2-CONDUCTOR, #16 AWG SOLID TWISTED SHIELDED CABLE Cable Part Number: FITP16SRD-FPLR (CONDUIT) FITP16SRD-FPLR (PLENUM)	ADDRESSABLE ALARM INITIATING DEVICES: - FP-SERIES SMOKE DETECTORS - TR-SERIES INTERFACE MODULES - AD-SERIES DUCT DETECTORS - MSI-SERIES PULL STATION
B	2-CONDUCTOR, #12 AWG SOLID OR STRANDED (PER NEC) Cable Part Number: FA-1202C-1-1N-03 (CONDUIT) FA-1202C-1-2N-03 (PLENUM)	NOTIFICATION APPLIANCE CIRCUIT: - STROBE CIRCUIT - HORN/STROBE CIRCUIT
D	2-CONDUCTOR, #12 AWG SOLID OR STRANDED (PER NEC) Cable Part Number: FA-1202C-1-1N-03 (CONDUIT) FA-1202C-1-2N-03 (PLENUM)	24 VDC POWER TO: - FIRE ALARM PANELS - DOOR HOLDERS
G	2-CONDUCTOR, #16 AWG SOLID TWISTED CABLE Cable Part Number: FITP16SRD-FPLR (CONDUIT) FITP16SRD-FPLR (PLENUM)	MISCELLANEOUS FIELD DEVICES: - TR TO MONITORED DEVICES - WATERFLOW SWITCH / TAMPER SWITCH - DIGITAL DIALER TO FACP - TSM-1 TEST SWITCH
P	2-CONDUCTOR, #12 AWG SOLID OR STRANDED (PER NEC) Cable Part Number: FA-1202C-1-1N-03 (CONDUIT) FA-1202C-1-2N-03 (PLENUM)	EXTENDER PANEL ACTIVATION: - WHEELOCK PS-24-8MC EXTENDER PANEL
120 VAC	2-CONDUCTOR WITH GROUND #12 AWG SOLID, THHN COLOR TO MATCH NEC	120 VAC POWER TO CONTROL PANELS - MFL - WHEELOCK PS-24-8MC EXTENDER PANEL - STAND-ALONE GENTEX SMOKE DETECTOR

WIRING NOTE:

- WIRING FOR NOTIFICATION APPLIANCE CIRCUIT IS CLASS B, STYLE Y.
- WIRING FOR INITIATING DEVICES IS CLASS B, STYLE 3.
- CONDUIT FILL < 40%, 3/4" CONDUIT.
- LOCAL FIRE ALARM SYSTEM MONITORED BY A CENTRAL STATION.
- SEE WIRING GUIDELINES FOR CABLE TYPE USE.

EXISTING SEQUENCE OF OPERATION MATRIX  
GENERAL ALARM for LOW RISE BUILDING

INITIATING DEVICES:	FP-SERIES SMOKE DETECTORS	TR-SERIES INTERFACE MODULES	AD-SERIES DUCT DETECTORS	MSI-SERIES PULL STATION	NOTIFICATION APPLIANCE CIRCUIT:	STROBE CIRCUIT	HORN/STROBE CIRCUIT	24 VDC POWER TO:	FIRE ALARM PANELS	DOOR HOLDERS	MISCELLANEOUS FIELD DEVICES:	TR TO MONITORED DEVICES	WATERFLOW SWITCH / TAMPER SWITCH	DIGITAL DIALER TO FACP	TSM-1 TEST SWITCH	EXTENDER PANEL ACTIVATION:	WHEELOCK PS-24-8MC EXTENDER PANEL
INITIAL FULL SIREN	X																
JM FIRE DETECTOR	X				X		X										
JM MFL DETECTOR	X				X		X										
UNDERLAY DETECTOR	X				X		X										
WALL DETECTOR					X		X										
LOSS OF AC POWER					X		X										
WIRING OF STYLE C (CLASS B)					X		X										
OPEN WIRE	X				X		X										
GROUND WIRE	X				X		X										
SHORDED WIRES	X				X		X										
LOSS OF CONDUIT	X				X		X										
INTERFERING WIRE (CLASS B)	X				X		X										
OPEN WIRE	X				X		X										
GROUND WIRE	X				X		X										
SHORDED WIRES	X				X		X										
SHORDED WIRE OF STYLE C (CLASS B)	X				X		X										
OPEN WIRE	X				X		X										
GROUND WIRE	X				X		X										
SHORDED WIRES	X				X		X										
LOSS OF CONDUIT	X				X		X										

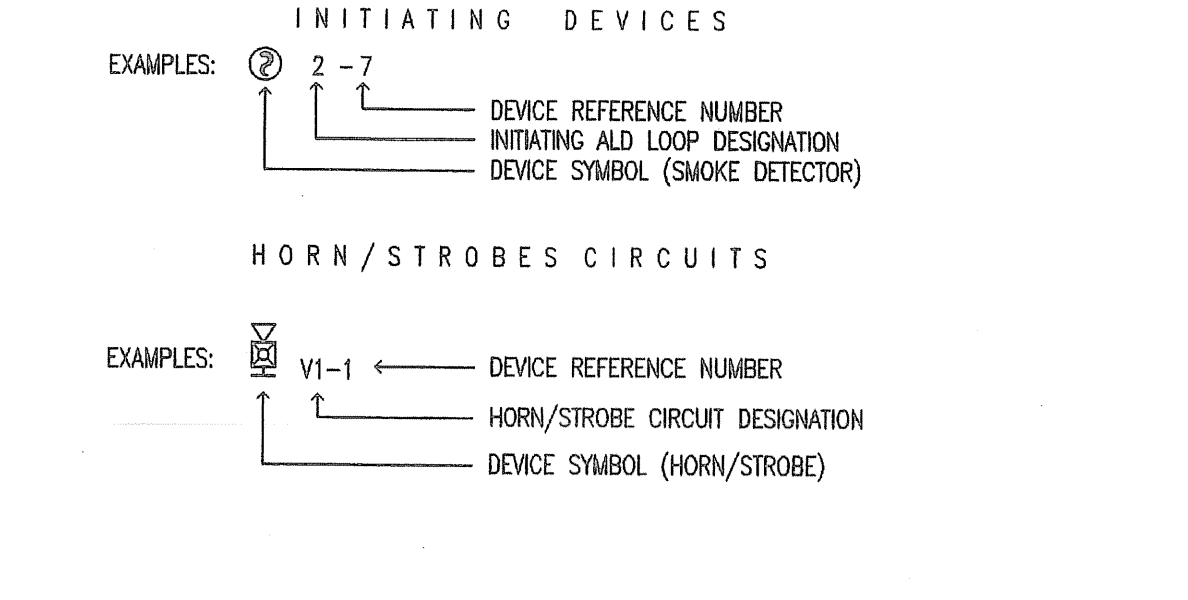
WIRING GUIDELINES

**PLENUM CABLE VS. NON-PLENUM**  
THE NEC RECOGNIZES 3 TYPES OF POWER LIMITED FIRE ALARM CABLING:  
FPL - THIS IS A GENERAL USE POWER LIMITED FIRE ALARM CABLE. IT CANNOT BE USED IN A PLENUM SPACE OR FOR RISERS (CABLING BETWEEN FLOORS). CABLE MUST BE IN CONDUIT.  
FPLR - THIS IS A POWER LIMITED RISER RATED CABLE THAT CAN BE USED FOR GENERAL PURPOSES OR BETWEEN FLOORS. IT CANNOT BE USED IN A PLENUM SPACE, CABLE MUST BE IN CONDUIT.  
FPLP - THIS IS A POWER LIMITED CABLE THAT CAN BE USED IN A PLENUM, RISER, OR FOR GENERAL PURPOSE.  
A PLENUM IS ANY AREA USED TO CONDUCT ENVIRONMENTAL AIR. PLENUM SPACES CAN BE DUCTWORK, THE SPACE ABOVE A DROP CEILING, OR BELOW A RAISED FLOOR. BECAUSE THESE SPACES ARE BEING USED FOR THE AIR HANDLING SYSTEM, THERE ARE STRICT RULES THAT MUST BE FOLLOWED TO REDUCE THE RISK OF INTRODUCING TOXIC FUMES IN THE EVENT OF A FIRE. SINCE FIRE ALARM CABLING IS OFTEN INSTALLED EXPOSED, WITHOUT CONDUIT, ABOVE DROP CEILING THE CABLING MUST BE RATED FOR USE IN A PLENUM SPACE.

WIRING REQUIREMENTS

- THE DRAN SHIELD IS A VERY IMPORTANT PART OF THE SYSTEM INSTALLATION. WE WOULD NOT SPECIFY SHIELDED CABLE IF IT WAS NOT NECESSARY. SHIELDS SHOULD BE KEPT CONTINUOUS THROUGHOUT THE CIRCUIT AND KEPT FREE FROM ANY REFERENCE TO EARTH GROUND.
- SHIELDED CABLE CAN BE FPL, FPLR, OR FPLP. SIEMENS INTELLIGENT ADDRESSABLE DEVICES REQUIRE SHIELDED CABLE.
- NOTIFICATION APPLIANCES (I.E. - SPEAKER/STROBES, HORNS, ETC.) REQUIRE NON-SHIELDED CABLE.
- UNDERGROUND CABLE, WHETHER OR NOT INSTALLED IN CONDUIT, SHALL BE LISTED AS UNDERGROUND BURIAL TYPE.
- WIRING IS TO BE INSTALLED POINT TO POINT WITH NO SPLICING.

DEVICE DESIGNATION LEGEND



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**SAN MATEO COUNTY COMMUNITY COLLEGE DISTRICT ATHLETIC FIELDS PHASE 2**  
COLLEGE OF SAN MATEO  
SOFTBALL FIELD TEAM ROOM & FOOTBALL HALL OF FAME  
San Mateo, Ca. 94402  
1700 W. Hillsdale Blvd.

**MISCELLANEOUS FIRE ALARM DETAILS**

ISSUE:	DATE:	DESCRIPTION:
DSA	04/26/07	DSA SUBMISSION

DRAWN BY: JOVEN MANLUTAC & JERI FABIAN

REVIEWED BY: KELLY ROGERS

APPROVED BY: KELLY ROGERS

SIEMENS JOB NO.: 440P-022170  
IDENTIFICATION STAMP  
DIVISION OF THE STATE ARCHITECT  
APPL #: 01-108848  
FILE #: 41-C1  
DATE: OCT 10 2007

Professional Engineer Seal for Kelly Rogers, State of California, License No. C-26833, expires 12/31/07.

SHEET NO. FA0.01