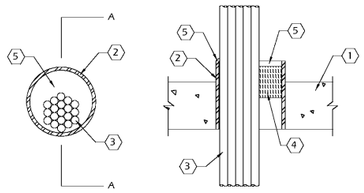


SECTION
A-A

F RATINGS -2, 3 AND 4 HR (SEE ITEM 5)
T RATINGS - 0, 1/2 AND 2-3/4 HR (SEE ITEM 5)

KEY NOTES:

(APPLY TO THIS DETAIL ONLY)

(1) FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) OR 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. FLOOR MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED HOLLOW-CORE PRECAST CONCRETE UNITS*. MAX DIAM OF OPENING IS 6 IN. (152 MM).
SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

(2) SLEEVE - (OPTIONAL) - NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE SLEEVE, NOM 6 IN. (152 MM) DIAM (OR SMALLER) NO. 26 GA (0.022 IN. OR 0.56 MM THICK) SHEET STEEL SLEEVE WITH SQUARE ANCHOR FLANGE SPOT WELDED TO SLEEVE AT APPROX MID-HEIGHT OR NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 POLYVINYL CHLORIDE (PVC) PIPE SLEEVE CAST OR GROUTED INTO FLOOR OR WALL FLUSH WITH FLOOR OR WALL SURFACES. STEEL PIPE SLEEVE MAY BE INSTALLED TO PROJECT A MAX OF 2 IN. (51 MM) BEYOND THE FLOOR OR WALL SURFACES.

(3) CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN SLEEVE TO BE MAX 45 PERCENT OF THE CROSS-SECTIONAL AREA OF THE SLEEVE. SEE ITEM 5 FOR SPECIFIC CABLE FILL REQUIREMENTS. TIGHT BUNDLE OF CABLES TO BE INSTALLED IN THE STEEL SLEEVE. THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE A MIN OF 0 IN. (POINT CONTACT) TO A MAX OF 2 IN. IN 4 HR FIRE RATED ASSEMBLIES, THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE A MIN OF 1/4 IN. (6 MM) TO A MAX OF 1 IN. (25 MM). CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:

A. MAX 400 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
B. MAX 3/C NO. 2/0 AWG (OR SMALLER) ALUMINUM OR COPPER CONDUCTOR SERVICE ENTRANCE CABLE WITH PVC INSULATION AND JACKET.
C. MAX 3/C NO. 2/0 AWG (OR SMALLER) COPPER CONDUCTOR PVC JACKETED ALUMINUM CLAD OR STEEL CLAD TECK 90 CABLE.
D. MAX 3/C NO. 8 AWG (OR SMALLER) NONMETALLIC SHEATHED (ROMEX) CABLE WITH COPPER CONDUCTORS, PVC INSULATION AND JACKET.
E. MAX 1/C 1000 KCMIL (OR SMALLER) COPPER CONDUCTOR POWER CABLE WITH XLPE OR PVC INSULATION AND XLPE OR PVC JACKET.
F. MAX RG59/U (OR SMALLER) COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
G. MAX 62.5/48 FIBER OPTIC CABLE WITH PVC INSULATION AND JACKETING.
H. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH PVC INSULATION AND JACKET.

(3A) THROUGH PENETRATING PRODUCT* - (NOT SHOWN) - MAX 4/C NO. 2/0 AWG (OR SMALLER) STEEL OR ALUMINUM ARMORED CABLE+ OR METAL CLAD CABLE+ WITH COPPER OR ALUMINUM CONDUCTORS. DIAM OF CABLE BUNDLE (ITEM 3) INCLUDING ARMORED CABLE NOT TO EXCEED 4 IN. THROUGH PENETRATING PRODUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF A FLOOR OR WALL ASSEMBLY.

AFC CABLE SYSTEMS INC

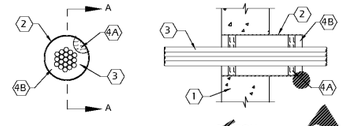
(4) PACKING MATERIAL - MIN 2, 3 OR 4 IN. (51, 76 OR 102 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) DENSITY MINERAL-WOOL BATT INSULATION TIGHTLY PACKED INTO OPENING AS A PERMANENT FORM FOR 2, 3 OR 4 HR FIRE RATED ASSEMBLIES, RESPECTIVELY . PACKING MATERIAL TO BE RECESSED FROM TOP EDGE OF SLEEVE OR FROM TOP SURFACE OF CONCRETE IN CAST CONCRETE FLOOR ASSEMBLIES TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. PACKING MATERIAL TO BE RECESSED FROM BOTH EDGES OF SLEEVE OR FROM BOTH SURFACES OF ASSEMBLY IN WALLS AND IN FLOOR CONSTRUCTED WITH HOLLOW-CORE PRECAST CONCRETE UNITS TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

(5) FILL, VOID OR CAVITY MATERIAL* - SEALANT OR PUTTY - MIN 1/2 IN. (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS FOR 2 AND 3 HR F RATINGS. MIN 3/4 IN. (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITH THE ANNULUS FOR 4 HR F RATING. IN FLOORS, FILL MATERIAL TO BE INSTALLED FLUSH WITH TOP EDGE OF SLEEVE OR TOP SURFACE OF FLOOR. IN WALLS AND IN FLOOR CONSTRUCTED OF HOLLOW-CORE PRECAST CONCRETE UNITS, FILL MATERIAL TO BE INSTALLED FLUSH WITH BOTH ENDS OF SLEEVE OR BOTH SURFACES OF ASSEMBLY. F AND T RATINGS OF FIRESTOP SYSTEM ARE DEPENDENT UPON THE THROUGH OPENING OR THICKNESS OF CONCRETE, SLEEVE TYPE AND PERCENT CABLE FILL, AS SHOWN IN THE FOLLOWING TABLE:

MAX OPENING DIAM	MIN CONCRETE THICKNESS	OPTIONAL SLEEVE TYPE	CABLE TYPE	PERCENT CABLE FILL	F RATING	T RATING
6 IN. (152 MM)	2-1/2 IN. (64 MM)	PVC	A TO H, 3A	37	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	PVC	H	45	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	STEEL	A TO H, 3A	37	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	STEEL	H	45	2 HR	0 HR
6 IN. (152 MM)	4-1/2 IN. (114 MM)	STEEL	A TO H, 3A	34	3 HR	1/2 HR
6 IN. (152 MM)	4-1/2 IN. (114 MM)	STEEL	H	45	3 HR	1/2 HR
2 IN. (52 MM)	4-1/2 IN. (114 MM)	STEEL	H	40	3 HR	2-3/4 HR
2 IN. (52 MM)	4-1/2 IN. (114 MM)	STEEL	H	40	4 HR	2-3/4 HR

SPECIFIED TECHNOLOGIES INC - SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT WHEN MIN FLOOR OR WALL THICKNESS IS 4-1/2 IN. (114 MM) , SPECSEAL PUTTY MAY BE USED.
*BEARING THE UL CLASSIFICATION MARK

DETAIL 1 FIRESTOP SYSTEM - C-AJ-3154
NOT TO SCALE



F RATING - 2 HR
T RATING - 3/4 HR

SECTION
A-A

KEY NOTES:

(APPLY TO THIS DETAIL ONLY)

(1) WALL ASSEMBLY - MIN 4 IN. (127 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 4-1/2 IN. (114 MM).
SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

(2) STEEL SLEEVE - NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBE (EMT), STEEL CONDUIT OR SCHEDULE 5 (OR HEAVIER) STEEL PIPE SLEEVE CAST OR GROUTED INTO WALL ASSEMBLY. SLEEVE MAY BE INSTALLED FLUSH WITH OR EXTEND UP TO 18 IN. (46 CM) BEYOND ONE OR BOTH WALL SURFACES.

(3) CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN STEEL SLEEVE TO BE MAX 48 PERCENT OF THE AGGREGATE CROSS-SECTIONAL AREA OF THE SLEEVE. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTOR CABLE MAY BE USED:

A. MAX 200 PAIR NO. AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
B. MAX 3/C NO. 2/0 AWG (OR SMALLER) ALUMINUM OR COPPER CONDUCTOR SERVICE ENTRANCE CABLE WITH PVC INSULATION AND JACKET.
C. MAX 3/C NO. 8 AWG (OR SMALLER) NONMETALLIC SHEATHED (ROMEX) CABLE WITH COPPER CONDUCTORS, PVC INSULATION AND JACKET.
D. MAX 7/C NO. 2/0 AWG (OR SMALLER) MULTICONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION AND XLPE OR PVC JACKET.
E. MAX RG/U (OR SMALLER) COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
F. MAX 62.5/48 FIBER OPTIC CABLE WITH PVC INSULATION AND JACKETING.
G. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH PVC INSULATION AND JACKET.
H. MAX 4/C NO. 2/0 ALUMINUM OR COPPER CONDUCTOR ALUMINUM OR STEEL METAL-CLAD# OR ARMORED-CLAD# CABLE.

(4) FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL - WHEN REQUIRED (SEE TABLE IN ITEM 3B), MIN 1 IN. (25 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) DENSITY MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO EACH END OF SLEEVE AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM EACH END OF SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
B. FILL, VOID OR CAVITY MATERIAL* - SEALANT OR PUTTY - FILL MATERIAL APPLIED TO APPROPRIATE THICKNESS WITHIN STEEL SLEEVE, FLUSH WITH EDGES OF STEEL SLEEVE ON BOTH SURFACES OF WALL. SEE TABLE BELOW FOR FILL MATERIAL THICKNESS REQUIREMENTS.

SEALANT OR PUTTY TYPE	THICKNESS IN. (MM)	PACKING MATERIAL REQUIRED
SPECSEAL SERIES SSS SEALANT OR LCI SEALANT	1/2 IN. (13)	YES
SPECSEAL SERIES SSS SEALANT OR LCI SEALANT	1 IN. (25)	NO
SPECSEAL PUTTY	1 IN. (25)	NO

SPECIFIED TECHNOLOGIES INC - SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT OR SPECSEAL PUTTY
*BEARING THE UL CLASSIFICATION MARK

DETAIL 2 FIRESTOP SYSTEM - W-J-3090
NOT TO SCALE

Architecture Planning Facilities Design

CGLS ARCHITECTS

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SEAL

DATE	NO.	DESCRIPTION
03/27/18		EDGE PRELIMINARY SUBMITTAL / DESIGN DEVELOPMENT
09/19/18		SDR CONSTRUCTION DOCUMENTS
09/19/18	1	FINAL EDGE SUBMITTAL
10/10/18		FINAL EDGE SUBMITTAL
11/01/18		ISSUED FOR PROPOSALS

CHAPMAN GRIFFIN LANIER SUSSENBAC ARCHITECTS
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DOE FACILITY CODE: 660 3066
RIVERWOOD HIGH SCHOOL - PHASE 3-7
AUDITORIUM/GYMNASIUM ADDITION
5900 RAIDER DRIVE NW SANDY SPRINGS, GA 30328
FULTON COUNTY SCHOOLS RFP NO. XXX-XX

SHEET TITLE
DETAILS

PROJECT NO. 15099
DATE: 06-19-18
DRAWN BY: Author
CHECKED BY: Checker

SHEET NO.
LV-502

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