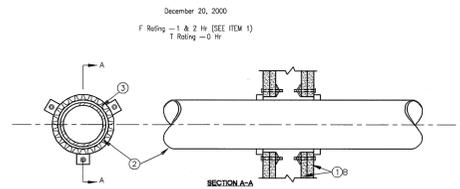


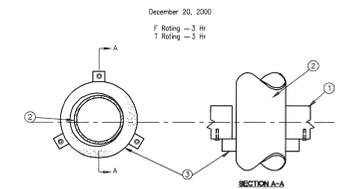
three inches = one foot  
 one and one half inches = one foot  
 one inch = one foot  
 one quarter inch = one foot  
 three quarters inch = one foot  
 one half inch = one foot  
 three eighths inch = one foot  
 one eighth inch = one foot



December 20, 2000  
 F Rating - 1 & 2 Hr (SEE ITEM 1)  
 T Rating - 0 Hr

1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED CYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR L400 SERIES WALL AND PARTITION DESIGNS 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 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.
  - B. CYPSUM BOARD - 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE CYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR L400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIA. OF OPENING IS 5 IN.
2. THROUGH PENETRATION - ONE NONMETALLIC PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 1/2 IN. PIPE TO BE ROBBY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:
  - A. POLYVINYL CHLORIDE (PVC) PIPE - NOM 4 IN. DIA. (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
  - B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOM 4 IN. DIA. (OR SMALLER) SDR 17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
  - C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE - NOM 4 IN. DIA. (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. FIRESTOP DEVICE - GALV STEEL COLLAR LINED WITH AN INTUMESCENT MATERIAL SIZED TO FIT SPECIFIC DIA. OF THE THROUGH PENETRATION DEVICE TO BE INSTALLED AROUND THROUGH PENETRATION IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. DEVICE INCORPORATES ANCHOR PINS FOR SECUREMENT TO BOTH SURFACES OF WALL BY MEANS OF 1-1/2 IN. LONG U-BOLTS SPACED AT 1/8 IN. DIA. BY 2 IN. LONG HOLLOW WALL ANCHORS AT EACH ANCHOR TAIL.

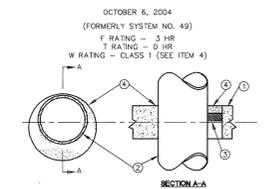
**C1** SYSTEM NO. W-L-2108  
 NOT TO SCALE



December 20, 2000  
 F Rating - 3 Hr  
 T Rating - 3 Hr

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX DIA. OF OPENING IS 30-1/2 IN.
2. THROUGH PENETRATION - ONE NONMETALLIC PIPE TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 1/2 IN. PIPE TO BE ROBBY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF NONMETALLIC PIPES MAY BE USED:
  - A. POLYVINYL CHLORIDE (PVC) PIPE - NOM 4 IN. DIA. (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE PVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
  - B. CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE - NOM 4 IN. DIA. (OR SMALLER) SDR 17 CPVC PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) PIPING SYSTEMS. WHEN PIPE COLLARS ARE PROVIDED ON BOTH SIDES OF A WALL, SDR 17 CPVC PIPE MAY ALSO BE USED IN VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
  - C. ACRYLONITRILE BUTADIENE STYRENE (ABS) PIPE - NOM 4 IN. DIA. (OR SMALLER) SCHEDULE 40 SOLID OR CELLULAR CORE ABS PIPE FOR USE IN CLOSED (PROCESS OR SUPPLY) OR VENTED (DRAIN, WASTE OR VENT) PIPING SYSTEMS.
3. FIRESTOP DEVICE - GALV STEEL COLLAR LINED WITH AN INTUMESCENT MATERIAL SIZED TO FIT SPECIFIC DIA. OF THE THROUGH PENETRATION DEVICE TO BE INSTALLED AROUND THROUGH PENETRATION IN ACCORDANCE WITH ACCOMPANYING INSTALLATION INSTRUCTIONS. DEVICE INCORPORATES ANCHOR PINS FOR SECUREMENT TO BOTH SURFACES OF FLOOR OR BOTH SURFACES OF WALL BY MEANS OF 1/4 IN. BY 1-1/4 IN. U-BOLT CONCRETE ANCHORS.

**C3** SYSTEM NO. C-AJ-2134  
 NOT TO SCALE

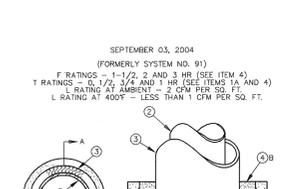


OCTOBER 6, 2004  
 (FORMERLY SYSTEM NO. 49)  
 F RATING - 3 HR  
 T RATING - 0 HR  
 W RATING - CLASS 1 (SEE ITEM 4)

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX DIA. OF OPENING IS 30-1/2 IN.
2. THROUGH PENETRATION - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE 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 ROBBY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
  - A. STEEL PIPE - NOM 30 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - B. IRON PIPE - NOM 30 IN. DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE.
  - C. CONDUIT - NOM 6 IN. DIA. (OR SMALLER) RIGID STEEL CONDUIT.
  - D. CONDUIT - NOM 4 IN. DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL-WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CALK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIA. AND WHEN MAX ANNULAR SPACE IS 1 IN., A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL-WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM OTHER SIDE OF WALL.
4. FILL VOID OR CAVITY MATERIALS\* - CALK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:
 

MAX PIPE OR CONDUIT DIA. IN.	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (S)	MIN CALK THICKNESS IN.
10	1	SRL, CF, OR MM	1/2 (S)
10	1	CF OR MM	1/2 (S)
30	2-1/2	SRL, CF, OR MM	1 (S)

**C6** SYSTEM NO. W-L-1001  
 NOT TO SCALE

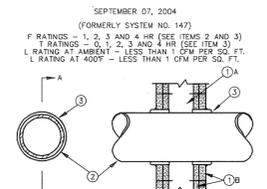


SEPTEMBER 03, 2004  
 (FORMERLY SYSTEM NO. 91)  
 F RATINGS - 1-1/2, 2 AND 3 HR (SEE ITEM 4)  
 T RATINGS - 0, 1, 2, 3 AND 4 HR (SEE ITEM 1A AND 4)  
 L RATING AT AMBIENT - 2 CFM PER SQ. FT.  
 L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX DIA. OF OPENING IS 18 IN.
2. THROUGH PENETRATION - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE 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 ROBBY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
  - A. STEEL PIPE - NOM 30 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - B. IRON PIPE - NOM 30 IN. DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE.
  - C. CONDUIT - NOM 6 IN. DIA. (OR SMALLER) RIGID STEEL CONDUIT.
  - D. CONDUIT - NOM 4 IN. DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL-WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CALK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIA. AND WHEN MAX ANNULAR SPACE IS 1 IN., A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL-WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM OTHER SIDE OF WALL.
4. FILL VOID OR CAVITY MATERIALS\* - CALK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:
 

MIN FLOOR OR WALL THICKNESS IN.	MAX PIPE DIA. IN.	MAX PIPE COVERING THICKNESS IN.	ANNULAR SPACE IN.	F RATING HR.	T RATING HR.	
2-1/2	4	1	OR 1-1/2	1/2 TO 2-3/8	2	1
4-1/2	4	2	OR 3-5/8	2	1-1/2	
2-1/2	12	1	OR 1-1/2	2	1/2	
4-1/2	12	1	OR 2-3/8	3	1	
4-1/2	12	1/2	OR 2-3/8	2	0	

**C9** SYSTEM NO. C-AJ-5001  
 NOT TO SCALE

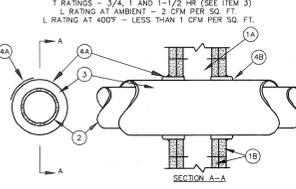


SEPTEMBER 07, 2004  
 (FORMERLY SYSTEM NO. 147)  
 F RATINGS - 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)  
 T RATINGS - 0, 1, 2, 3 AND 4 HR (SEE ITEM 3)  
 L RATING AT AMBIENT - 2 CFM PER SQ. FT.  
 L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.

1. WALL ASSEMBLY - THE 1, 2, 3 OR 4 HR FIRE-RATED CYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR L400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
  - A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 HR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.
  - B. WALLBOARD, CYPSUM - NOM 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE CYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR L400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIA. OF OPENING IS 26 IN.
2. THROUGH PENETRATION - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN 0 TO 10 IN. (POINT CONTACT) TO MAX 2 IN. PIPE, CONDUIT OR TUBING TO BE ROBBY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
  - A. STEEL PIPE - NOM 24 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - B. IRON PIPE - NOM 24 IN. DIA. (OR SMALLER) SERVICE HEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. DIA. (OR SMALLER) OR CAST IRON PRESSURE PIPE.
  - C. CONDUIT - NOM 6 IN. DIA. (OR SMALLER) RIGID STEEL CONDUIT OR NOM 4 IN. DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
  - D. COPPER TUBING - NOM 8 IN. DIA. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
  - E. COPPER PIPE - NOM 8 IN. DIA. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. THROUGH PENETRATION PRODUCT - FIBERGLASS METAL PIPING. THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:
  - A. 1. NOM 2 IN. DIA. (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE PROVIDED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
  - B. 2. NOM 1 IN. DIA. (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE PROVIDED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
  - C. 3. NOM 1 IN. DIA. (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE PROVIDED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
4. FILL VOID OR CAVITY MATERIALS\* - CALK OR SEALANT - MIN 5/8, 1-1/4, 1-7/8 AND 2-1/2 IN. THICKNESS OF CALK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS. FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. DIA. BEAD OF CALK APPLIED TO CYPSUM BOARD/PARTITION INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATING OF THE FIRESTOP 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 F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS INDICATED BELOW:
 

MAX PIPE OR CONDUIT DIA. IN.	F RATING HR.	T RATING HR.
1	3 OR 4	3 OR 4
2	3 OR 4	3 OR 4
3	3 OR 4	3 OR 4
4	3 OR 4	3 OR 4
6	3 OR 4	3 OR 4
8	3 OR 4	3 OR 4
10	3 OR 4	3 OR 4

**F4** SYSTEM NO. C-AJ-0090  
 NOT TO SCALE



SEPTEMBER 07, 2004  
 (FORMERLY SYSTEM NO. 147)  
 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 PER SQ. FT.  
 L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.

1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED CYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR L400 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 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.
  - B. WALLBOARD, CYPSUM - NOM 5/8 IN. (16 MM) THICK, 4 FT. (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE CYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR L400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIA. OF OPENING IS 14-1/2 IN. (368 MM) FOR WOOD STUD WALLS AND 18 IN. (457 MM) FOR STEEL STUD WALLS.
2. THROUGH PENETRATION - ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE ROBBY 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 IN. (305 MM) DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
  - B. COPPER TUBING - NOM 8 IN. (203 MM) DIA. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
  - C. COPPER PIPE - NOM 6 IN. (152 MM) DIA. (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. PIPE COVERING - NOM 1 OR 2 IN. (25 OR 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER LINTS UNACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE CYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/4 IN. (6 MM) TO MAX 3/8 IN. (9 MM) TO MAX 10 MM) WHEN NOM 2 IN. (51 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE CYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/2 IN. TO MAX 3/4 IN. (19 MM) TO MAX 19 MM).
4. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:
  - A. PACKING MATERIAL - MIN 1 IN. THICKNESS OF TIGHTLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CALK FILL MATERIAL (ITEM 5).
  - B. FILL VOID OR CAVITY MATERIALS\* - CALK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN. (51 MM), MIN THICKNESS OF CALK FILL MATERIAL IS 1/2 IN. (13 MM). THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL, AND THE SIZE OF THE ANNULAR SPACE BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING AS SHOWN IN THE FOLLOWING TABLE:
 

MIN FLOOR OR WALL THICKNESS IN.	MAX PIPE DIA. IN.	MAX PIPE COVERING THICKNESS IN.	ANNULAR SPACE IN.	F RATING HR.	T RATING HR.	
2-1/2	4	1	OR 1-1/2	1/2 TO 2-3/8	2	1
4-1/2	4	2	OR 3-5/8	2	1-1/2	
2-1/2	12	1	OR 1-1/2	2	1/2	
4-1/2	12	1	OR 2-3/8	3	1	
4-1/2	12	1/2	OR 2-3/8	2	0	

**F9** SYSTEM NO. W-L-5001  
 NOT TO SCALE

REVISION NO.	REVISION DESCRIPTION	By	Date



Department of Veterans Affairs  
 Medical Center  
 1826 Veterans Blvd.  
 Dublin, Ga. 31021



Architect/Engineer Address  
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 HSI PROJECT # 10004

Recommended Approvals:
1. MEDICAL DIRECTOR
2. ASSOCIATE DIRECTOR
3. CHIEF OF STAFF
4. ASSOC. DIRECTOR
5. SERVICE LINE MGRS.
6. OPERATIONS SERVICE LINE MANAGER
7. INFECTION CONTROL SAFETY MANAGER
8. SAFETY MANAGER
9. GENERAL ENGINEER
10. COTR

Drawing Title	Project Title	Date
PLUMBING UL DETAILS	RENOVATE 13A FOR ENDOSCOPY SUITE	June 10, 2011
FULLY SPRINKLERED	Project Number 557-10-108	DRAWING No. P-503
Checked	Building Number	AutoCAD File Name
Reviewed	Const. Contract No.	

**100% SUBMITTAL**

Architect/Engineer Address  
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 6. OPERATIONS SERVICE LINE MANAGER  
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 8. SAFETY MANAGER  
 9. GENERAL ENGINEER  
 10. COTR

Drawing Title  
 PLUMBING UL DETAILS  
 FULLY SPRINKLERED

Project Title  
 RENOVATE 13A FOR ENDOSCOPY SUITE

Date  
 June 10, 2011  
 Project Number  
 557-10-108  
 DRAWING No.  
 P-503

Checked  
 Building Number  
 Const. Contract No.

Reviewed  
 AutoCAD File Name

100% SUBMITTAL

15  
 10  
 5  
 0

one eighth inch = one foot