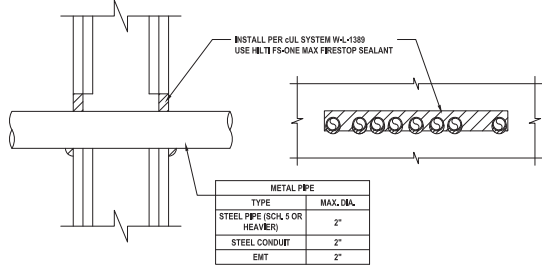


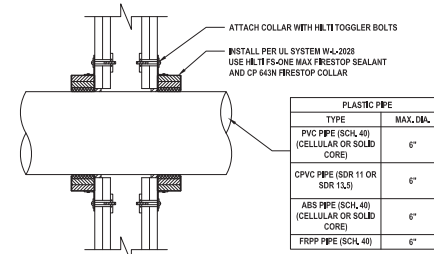
METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 10 OR HEAVIER)	30"
CAST IRON PIPE	30"
COPPER PIPE	6"
STEEL CONDUIT	6"
EMT	4"

1 METAL PIPE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



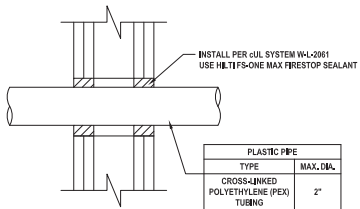
METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 5 OR HEAVIER)	2"
STEEL CONDUIT	2"
EMT	2"

2 MULTIPLE METAL PIPES THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



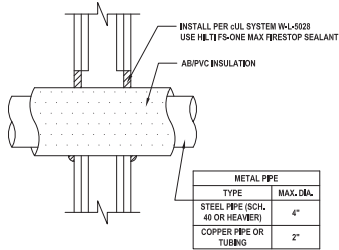
PLASTIC PIPE	
TYPE	MAX. DIA.
PVC PIPE (SCH. 40) (CELLULAR OR SOLID CORE)	6"
CPVC PIPE (SDR 11 OR SDR 13.5)	6"
ABS PIPE (SCH. 40) (CELLULAR OR SOLID CORE)	6"
FRPP PIPE (SCH. 40)	6"

3 PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



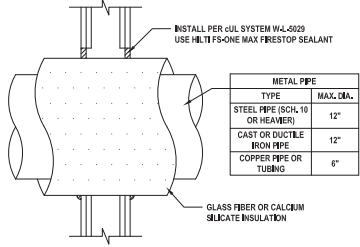
PLASTIC PIPE	
TYPE	MAX. DIA.
CROSS-LINKED POLYETHYLENE (PEX) TUBING	2"

4 CROSS-LINKED POLYETHYLENE (PEX) TUBING THROUGH GYPSUM WALL ASSEMBLY (1-HR.)  
MEP.1.1 NOT TO SCALE



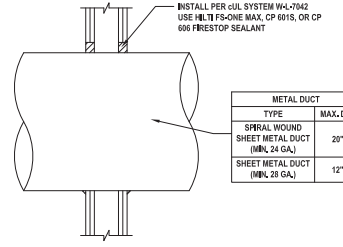
METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 40 OR HEAVIER)	4"
COPPER PIPE OR TUBING	2"

5 PLASTIC PIPE WITH AB/IVC INSULATION THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



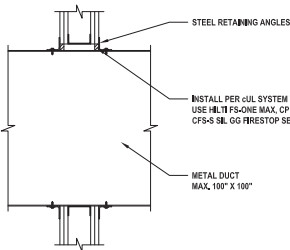
METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 10 OR HEAVIER)	12"
CAST OR DUCTILE IRON PIPE	12"
COPPER PIPE OR TUBING	6"

6 METAL PIPE WITH GLASS FIBER OR CALCIUM SILICATE INSULATION THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE

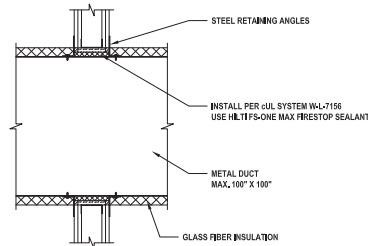


METAL DUCT	
TYPE	MAX. DIA.
SPIRAL WOUND SHEET METAL DUCT (MIN. 24 GA.)	20"
SHEET METAL DUCT (MIN. 28 GA.)	12"

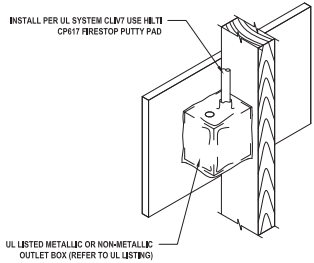
7 METAL DUCT (WITHOUT DAMPER) THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



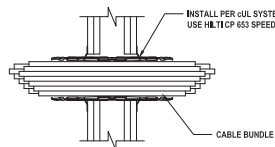
8 METAL DUCT THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



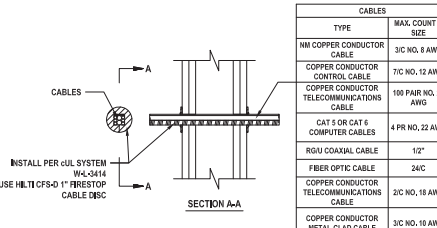
9 METAL DUCT WITH GLASS FIBER INSULATION THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



10 MEMBRANE PENETRATION IN GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



11 CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE



CABLES	
TYPE	MAX. COUNT & SIZE
NH COPPER CONDUCTOR CABLE	3/C NO. 8 AWG
COPPER CONDUCTOR CONTROL CABLE	7/C NO. 12 AWG
COPPER CONDUCTOR TELECOMMUNICATIONS CABLE	100 PAIR NO. 24 AWG
CAT 5 OR CAT 6 COMPUTER CABLE	4 PR NO. 22 AWG
RGV COAXIAL CABLE	12"
FIBER OPTIC CABLE	24/C
COPPER CONDUCTOR TELECOMMUNICATIONS CABLE	2/C NO. 18 AWG
COPPER CONDUCTOR METAL-CLAD CABLE	3/C NO. 10 AWG

12 CABLE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE

Notes:

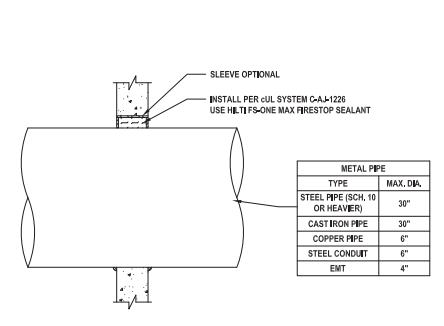
- Refer to the following specifications for firestopping.
  - 07 84 00 Firestopping
  - 07 84 13 Penetration Firestopping
  - 22 00 00 Plumbing
  - 23 00 00 HVAC
  - 26 00 00 Electrical
  - 27 06 37 Communication
- For Quality Control requirements, refer to the Quality Control portion of the specification.
- Details shown are typical details, containing general information only. Always refer to the full cUL system detail for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
  - \* Fire Rating (F-Rating)
  - \* Temperature Rating (T-Rating)
  - \* Leakage Rating (L-Rating)
  - \* Water Rating (W-Rating)
  - \* Annular Space
  - \* Percent Fill
  - \* Movement
  - \* Type and thickness of fire-rated construction.
- If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Contact Hilti Canada Inc. for alternative systems or Engineering Judgment (800-363-4458). Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
- Firestop System installation must meet requirements of CANULC-S115 tested assemblies.
- All rated through-penetration assemblies shall be prominently labeled with a Hilti Firestop Label equipped with a QR code with the following information:
  - \* Warning! - Do Not Disturb
  - \* Through Penetration Firestop System
  - \* cUL System # \* Product(s) used
  - \* Hourly Rating (F-Rating)
  - \* Installation Date
  - \* Contractor's Name
- For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV7 as classified by Underwriter's Laboratories, Fire Resistance Directory (Volume 1).
- For all CPVC pipes systems, compatibility should be verified by the CPVC pipes manufacturer.

<Notes to designer (delete this note after reading and replace with title block information)>  
 1. Any modification to these details could result in an application/system not meeting the cUL or Intertek Classification or the intended temperature or fire ratings.  
 2. Details shown are up to date as of March 2020.  
 3. For additional information on the details, refer to the most current "Underwriter's Laboratories Fire Resistance Directory (Volume 2)."

GYPSUM WALLS		
TYPE OF PENETRANT	RATING (HR)	HILTI BARS OF DESIGNS/UL SYSTEM
METAL PIPES OR CONDUIT	1	WL-1054, WL-1058, WL-1154, WL-1158
	2	WL-1054, WL-1058, WL-1154, WL-1158
	4	WL-1110, WL-1111, WL-1152
	1	WL-2015, WL-2020, WL-2025
NON-METALLIC PIPE OR CONDUIT	2	WL-2020, WL-2025, WL-2034
	1	WL-2025, WL-3111, WL-3112, WL-3334, WL-3414, WL-3338
SINGLE OR BUNDLED CABLES	2	WL-2025, WL-3111, WL-3112, WL-3334, WL-3414, WL-3338
	3	WL-3335, WL-3277
	4	WL-3278, WL-3338
CABLE TRAY	2	WL-4011, WL-4012, WL-4013, WL-4014
	4	WL-3014
INSULATED PIPES	1	WL-6028, WL-6029, WL-6047
	2	WL-6028, WL-6029, WL-6047
	4	WL-6029
NON-ISOLATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	WL-7017, WL-7040, WL-7042, WL-7155
	2	WL-7017, WL-7040, WL-7042, WL-7155
INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	WL-7050, WL-7103, WL-7105, WL-7161
	2	WL-7050, WL-7103, WL-7105, WL-7161
MIXED PENETRANTS	1	WL-1055, WL-4012, WL-4013
	4	WL-4013

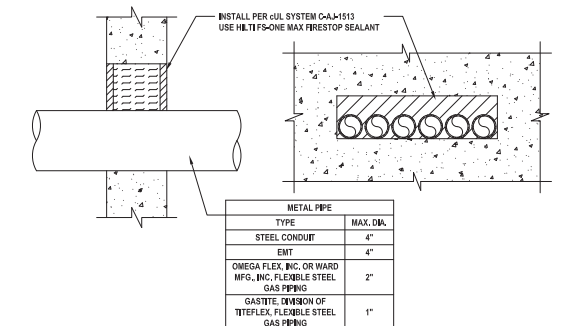
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 DRAWING: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 ISSUE DATE: \_\_\_\_\_  
 REVISIONS: \_\_\_\_\_  
 CONTENTS: \_\_\_\_\_  
 MEP PENETRATIONS GYPSUM WALL 2 HR.  
 SHEET NAME: \_\_\_\_\_  
 SHEET NUMBER: \_\_\_\_\_

MEP.1.1



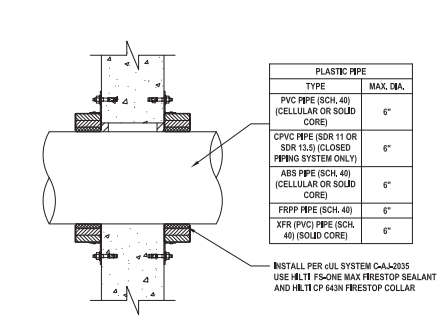
1 METAL PIPE THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 10 OR HEAVIER)	30"
CAST IRON PIPE	30"
COPPER PIPE	6"
STEEL CONDUIT	6"
EMT	4"



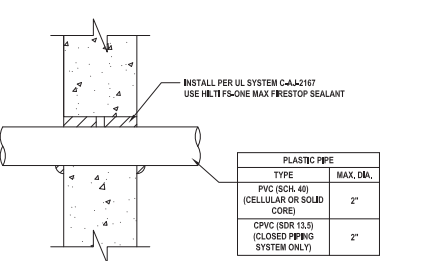
2 MULTIPLE METAL PIPES THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

METAL PIPE	
TYPE	MAX. DIA.
STEEL CONDUIT	4"
EMT	4"
OMEGA FLEX, INC. OR WARD MFG. INC. FLEXIBLE STEEL GAS PIPING	2"
GASTITE DIVISION OF TITEXLEX, FLEXIBLE STEEL GAS PIPING	1"



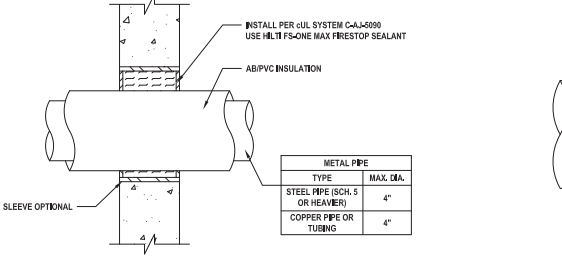
3 PLASTIC PIPE THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

PLASTIC PIPE	
TYPE	MAX. DIA.
PVC PIPE (SCH. 40) (CELLULAR OR SOLID CORE)	6"
CPVC PIPE (SDR 11 OR SDR 13.5) (CLOSED PIPING SYSTEM ONLY)	6"
ABS PIPE (SCH. 40) (CELLULAR OR SOLID CORE)	6"
FRPP PIPE (SCH. 40)	6"
XFR (PVC) PIPE (SCH. 40) (SOLID CORE)	6"



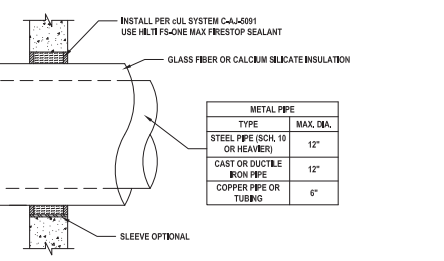
4 PLASTIC PIPE THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

PLASTIC PIPE	
TYPE	MAX. DIA.
PVC (SCH. 40) (CELLULAR OR SOLID CORE)	2"
CPVC (SDR 13.5) (CLOSED PIPING SYSTEM ONLY)	2"



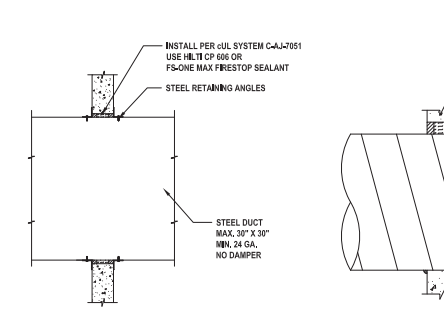
5 METAL PIPE WITH AB/PVC INSULATION THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 5 OR HEAVIER)	4"
COPPER PIPE OR TUBING	4"



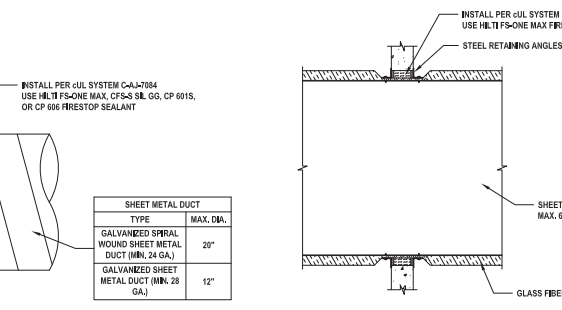
6 METAL PIPE WITH GLASS FIBER OR CALCIUM SILICATE INSULATION THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

METAL PIPE	
TYPE	MAX. DIA.
STEEL PIPE (SCH. 10 OR HEAVIER)	12"
CAST OR DUCTILE IRON PIPE	12"
COPPER PIPE OR TUBING	6"

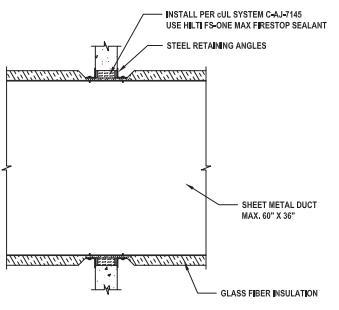


7 METAL DUCT (WITHOUT DAMPER) THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

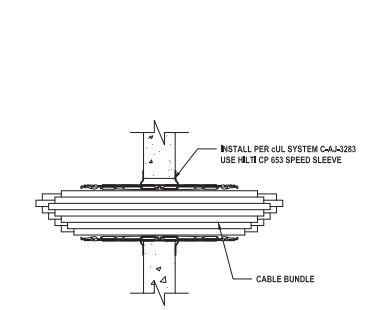
SHEET METAL DUCT	
TYPE	MAX. DIA.
GALVANIZED SPRAL WOUND SHEET METAL DUCT (MIN. 24 GA.)	20"
GALVANIZED SHEET METAL DUCT (MIN. 28 GA.)	12"



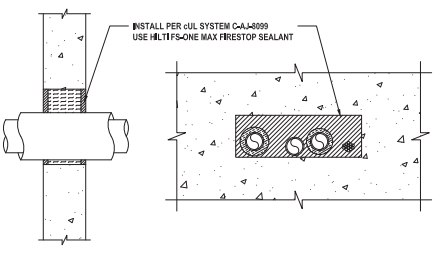
8 ROUND SHEET METAL DUCT THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE



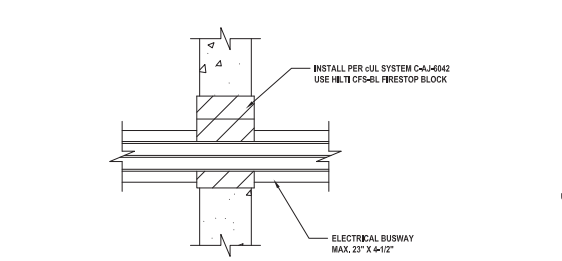
9 SHEET METAL DUCT WITH GLASS FIBER INSULATION THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE



10 CABLE BUNDLE THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

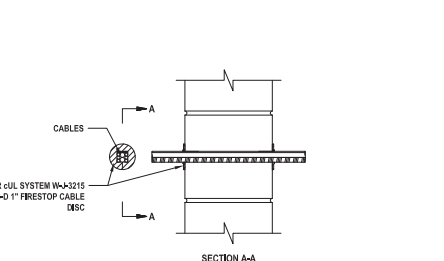


11 MULTIPLE PENETRATIONS THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE



12 ELECTRICAL BUSWAY THROUGH CONCRETE WALL (2-HR.)  
MEP.1.1 NOT TO SCALE

ELECTRICAL BUSWAY  
MAX. 23" X 4-1/2"



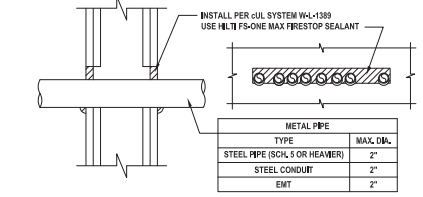
13 CABLES THROUGH CONCRETE OR BLOCK WALL ASSEMBLY (2-HR.)  
MEP.1.1 NOT TO SCALE

- Notes:
- Refer to the following specifications for firestopping:
    - 07 84 00 Firestopping
    - 07 84 13 Penetration Firestopping
    - 22 00 00 Plumbing
    - 23 00 00 HVAC
    - 26 00 00 Electrical
    - 27 06 37 Communication
  - For Quality Control requirements, refer to the Quality Control portion of the specification.
  - Details shown are typical details, containing general information only. Always refer to the full cUL system detail for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
    - \* Fire Rating (F-Rating)
    - \* Temperature Rating (T-Rating)
    - \* Leakage Rating (L-Rating)
    - \* Water Rating (W-Rating)
    - \* Annular Space
    - \* Percent Fill
    - \* Movement
    - \* Type and thickness of fire-rated construction.
  - If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Contact Hilti Canada Inc. for alternative systems or Engineering Judgment (800-363-4458) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
  - Firestop System installation must meet requirements of CAN/ULC-S115 tested assemblies.
  - All rated through-penetration assemblies shall be prominently labeled with a Hilti Firestop Label equipped with a QR code with the following information:
    - \* Warning! - Do Not Disturb
    - \* Through Penetration Firestop System
    - \* cUL System # \* Product(s) used
    - \* Hourly Rating (F-Rating)
    - \* Installation Date
    - \* Contractor's Name
  - For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV7 as classified by Underwriter's Laboratories, Fire Resistance Directory (Volume 1).
  - For all CPVC pipes systems, compatibility should be verified by the CPVC pipes manufacturer.

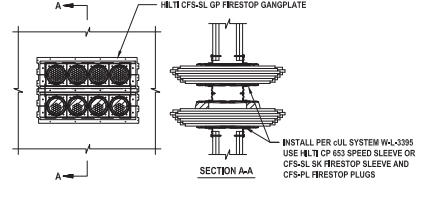
CONCRETE OR BLOCK WALLS		
TYPE OF PENETRANT	FIRING (HR)	HILTIBASE OF DESIGN UL SYSTEM
CIRCULAR BLANK OPENINGS	2	CAJ4055, CAJ4090
	3	CAJ4055, CAJ4090
	1	CAJ4228, W-L-1987, W-L-1020
SINGLE METAL PIPES OR CONDUIT	2	CAJ4228, W-L-1987, W-L-1020, W-L-2148
	3	CAJ4228, W-L-1987, W-L-1020
	4	CEM-103A, CEM-1037, W-L-1981, W-L-1042, W-L-1068
	1	CAJ42035, CAJ42031, CAJ42022, W-L-2012
SINGLE NON-METALLIC PIPE OR CONDUIT (IE, PVC, CPVC, ABS, FRP, ETC)	2	CAJ42035, CAJ42031, CAJ42011, CAJ42032, W-L-2012
	3	CAJ42031, CAJ42035
	1	W-L-3038, CAJ4055, CAJ4189, W-L-3060, W-L-3107
SINGLE CABLE BUNDLES	2	W-L-3038, CAJ4055, CAJ4189, W-L-3060, W-L-3107, W-L-3189
	3	CAJ4055, CAJ4189, W-L-3187
	4	W-L-3060
	1	W-L-4007, CAJ4034, CAJ4035
CABLE TRAY	2	W-L-4007, CAJ4034, CAJ4035
	3	CAJ4034, CAJ4035
	4	W-L-4007
	1	W-L-4007
SINGLE INSULATED PIPES	2	CAJ4030, CAJ4031, CAJ 5061, W-L-4042
	3	CAJ4030, CAJ4031, CAJ4061, W-L-4042
	4	CAJ4030, CAJ4061
	1	CAJ4030, W-L-4028
ELECTRICAL BUSWAY	2	CAJ4030, CAJ4031, CAJ4038
	3	CAJ4030, CAJ4031
	4	CAJ4030, CAJ4031
MECHANICAL DUCTWORK WITHOUT DAMPERS	1	CAJ4206, CAJ4251, W-L-2021, W-L-2022
	2	CAJ4206, CAJ4251, W-L-2021, W-L-2022
	3	CAJ4206, CAJ4251
MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	1	W-L-2020, W-L-2021
	2	W-L-2020, W-L-2112, W-L-2124
	3	CAJ 8099, CAJ 8098, W-L-8007, CAJ 8143
MIXED PENETRANTS	2	CAJ 8099, CAJ 8098, W-L-8007, CAJ 8143
	3	CAJ 8041, CAJ 8056, W-L-8007, CAJ 8099
	4	CAJ 8099, W-L-8007
	1	CAJ 8099, W-L-8007

<Notes to designer (delete this note after reading and replace with title block information)>  
 1. Any modification to these details could result in an application/system not meeting the cUL or Intertek Classification or the intended temperature or fire ratings.  
 2. Details shown are up to date as of March 2020.  
 3. For additional information on the details, refer to the most current "Underwriter's Laboratories Fire Resistance Directory (Volume 2)."

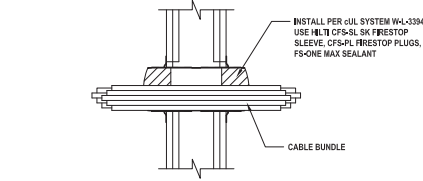
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DRAWN:  
CHECKED:  
ISSUE DATE:  
REVISIONS:  
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MEP PENETRATIONS CONCRETE/BLOCK WALL 2 HR.  
SHEET NAME:  
**MEP.1.1**  
SHEET NUMBER:



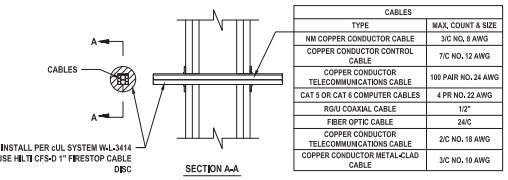
1 MULTIPLE METAL PIPES THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



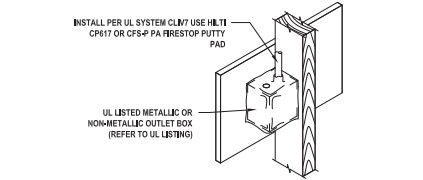
2 MULTIPLE CABLE BUNDLES THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



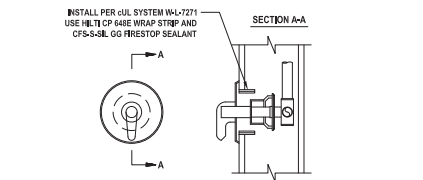
3 CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



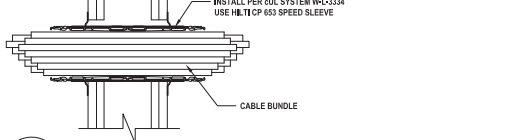
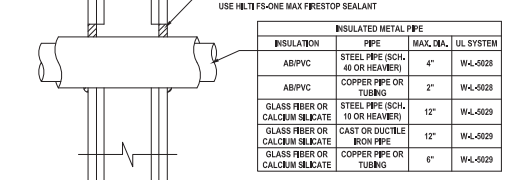
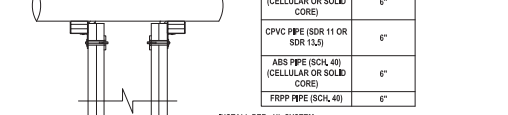
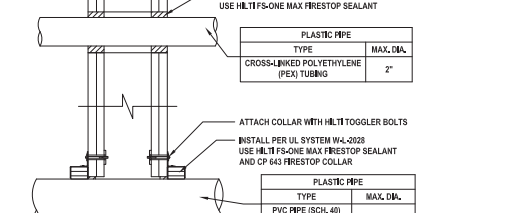
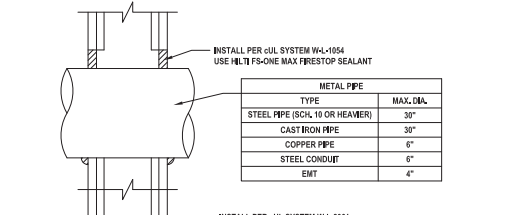
4 CABLE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



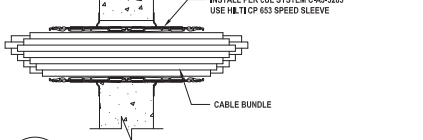
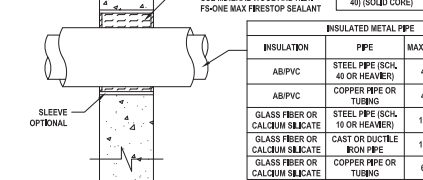
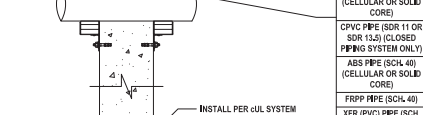
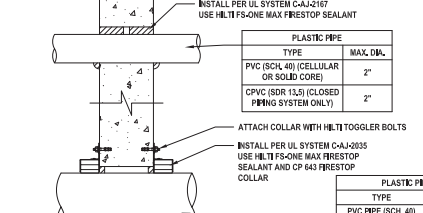
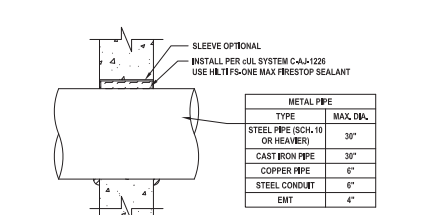
5 MEMBRANE PENETRATION IN GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



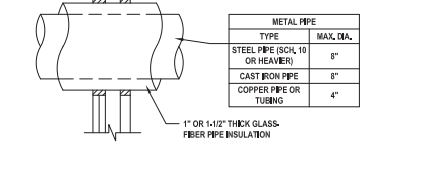
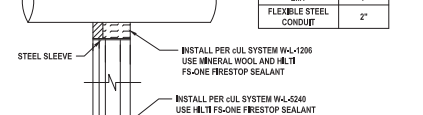
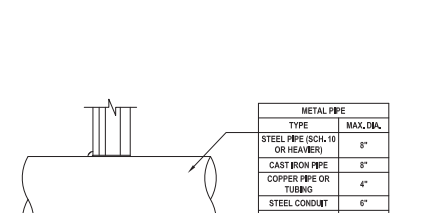
6 SHOWER VALVE THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



7 PENETRANT THROUGH GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



8 PENETRANT THROUGH CONCRETE WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



9 PENETRANT THROUGH GYPSUM SHAFT WALL ASSEMBLY (2-HR.)  
NOT TO SCALE

Notes:

- Refer to the following specifications for firestopping.
  - 07 84 00 Firestopping
  - 07 84 13 Penetration Firestopping
  - 22 00 00 Plumbing
  - 23 00 00 HVAC
  - 26 00 00 Electrical
  - 27 06 37 Communication
- For Quality Control requirements, refer to the Quality Control portion of the specification.
- Details shown are typical details, containing general information only. Always refer to the full cUL System detail for complete system requirements. If field conditions do not match requirements of details, approved alternate details shall be utilized. Design requirements, field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
  - Fire Rating (F-Rating)
  - Temperature Rating (T-Rating)
  - Leakage Rating (L-Rating)
  - Water Rating (W-Rating)
  - Annular Space
  - Percent Fill
  - Movement
  - Type and thickness of fire-rated construction.
- If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Contact Hilti Canada Inc. for alternative systems or Engineering Judgment (800-363-4458) Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
- Firestop System installation must meet requirements of CANULC-S115 tested assemblies
- All rated through-penetration assemblies shall be prominently labeled with a Hilti Firestop Label equipped with a QR code with the following information:
  - Warning! - Do Not Disturb
  - Through Penetration Firestop System
  - cUL System # \* Product(s) used
  - Hourly Rating (F-Rating)
  - Installation Date
  - Contractor's Name
- For outlet boxes requiring protection, use only Wall Opening Protective Materials, category CLIV7 as classified by Underwriter's Laboratories, Fire Resistance Directory (Volume 1).
- For all CPVC pipes systems, compatibility should be verified by the CPVC pipes manufacturer.

TYPE OF PENETRANT	F-RATING (FR)	CONCRETE OR BLOCK WALLS		GYPSUM WALLS	
		HILTI BASE OF DESIGN UL SYSTEM	HILTI BASE OF DESIGN UL SYSTEM	HILTI BASE OF DESIGN UL SYSTEM	HILTI BASE OF DESIGN UL SYSTEM
CIRCULAR BLANK OPENINGS	1	CA-A3055, CA-A3060	-	-	-
	2	CA-A3055, CA-A3060	-	-	-
	3	CA-A3055, CA-A3060	-	-	-
	4	CA-A3055, CA-A3060	-	-	-
SINGLE METAL PIPES OR CONDUIT	1	CA-A1226, WL-1007, WL-1020	WL-1054, WL-1060, WL-1064, WL-1068	WL-1054, WL-1060, WL-1064, WL-1068	-
	2	CA-A1226, WL-1007, WL-1020	WL-1054, WL-1060, WL-1064, WL-1068	WL-1054, WL-1060, WL-1064, WL-1068	-
	3	CA-A1226, WL-1007, WL-1020	WL-1054, WL-1060, WL-1064, WL-1068	WL-1054, WL-1060, WL-1064, WL-1068	-
	4	CA-A1226, WL-1007, WL-1020	WL-1054, WL-1060, WL-1064, WL-1068	WL-1054, WL-1060, WL-1064, WL-1068	-
SINGLE NONMETALLIC PIPE OR CONDUIT (E.G. PVC, CPVC, ABS, FRPP, ENT)	1	CA-A2026, CA-A2031, CA-A2032, WL-2012	WL-2019, WL-2020, WL-2028	WL-2019, WL-2020, WL-2028	-
	2	CA-A2026, CA-A2031, CA-A2032	CA-A2026, WL-2012	CA-A2026, WL-2012	-
	3	CA-A2026, CA-A2035	-	-	-
	4	CA-A2026, CA-A2035	-	-	-
SPACED CABLE BUNDLES	1	WL-3308, CA-A3055, CA-A3180, WL-4350, WL-4367	WL-4365, WL-4311, WL-4312, WL-4334, WL-4344, WL-4356	WL-4365, WL-4311, WL-4312, WL-4334, WL-4344, WL-4356	-
	2	WL-3308, CA-A3055, CA-A3180, WL-4356, WL-4367, WL-4389	WL-4365, WL-4311, WL-4312, WL-4334, WL-4344, WL-4356	WL-4365, WL-4311, WL-4312, WL-4334, WL-4344, WL-4356	-
	3	CA-A3055, CA-A3180, WL-4367	WL-4365, WL-4307	WL-4365, WL-4307	-
	4	WL-3308	WL-4365	WL-4365	-
CABLE TRAY	1	WL-4307, CA-A4034, CA-A4035	WL-4401, WL-4403, WL-4404	WL-4401, WL-4403, WL-4404	-
	2	WL-4307, CA-A4034, CA-A4035	WL-4401, WL-4403, WL-4404	WL-4401, WL-4403, WL-4404	-
	3	CA-A4034, CA-A4035	-	-	-
	4	WL-4307	WL-4401	WL-4401	-
SINGLE INSULATED PIPES	1	CA-A4001, CA-A4003, WL-4404	WL-4401, WL-4403, WL-4404	WL-4401, WL-4403, WL-4404	-
	2	CA-A4001, CA-A4003, WL-4404	WL-4401, WL-4403, WL-4404	WL-4401, WL-4403, WL-4404	-
	3	CA-A4001, CA-A4003	-	-	-
	4	CA-A4001, CA-A4003	-	-	-
ELECTRICAL BUSWAY	1	CA-A4001, CA-A4007, CA-A4008	-	-	-
	2	CA-A4001, CA-A4007, CA-A4008	-	-	-
	3	CA-A4001, CA-A4007	-	-	-
	4	CA-A4001, CA-A4007	-	-	-
MECHANICAL DUCTWORK WITHOUT DAMPERS NON-INSULATED	1	CA-A7086, CA-A7081, WL-7101, WL-7023	WL-7017, WL-7140, WL-7042, WL-7150	WL-7017, WL-7140, WL-7042, WL-7150	-
	2	CA-A7086, CA-A7081, WL-7101, WL-7023	WL-7150, WL-7042, WL-7150	WL-7150, WL-7042, WL-7150	-
	3	CA-A7086, CA-A7081	-	-	-
	4	CA-A7086, WL-47124	WL-4709, WL-4713, WL-4716, WL-4718	WL-4709, WL-4713, WL-4716, WL-4718	-
MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	1	WL-3709, WL-47124	WL-4709, WL-4713, WL-4716, WL-4718	WL-4709, WL-4713, WL-4716, WL-4718	-
	2	WL-3709, WL-4712, WL-4714	WL-4709, WL-4713, WL-4716, WL-4718	WL-4709, WL-4713, WL-4716, WL-4718	-
	3	CA-A1889, CA-A1896, WL-8007, CA-J-8143	WL-1055	WL-1055	-
	4	CA-A1889, CA-A1896, WL-8007, CA-J-8143	WL-1055, WL-4014	WL-1055, WL-4014	-
MIXED PENETRANTS	1	CA-A1881, CA-A1896, WL-8007, CA-J-8143	WL-4014	WL-4014	-
	2	CA-A1881, CA-A1896, WL-8007, CA-J-8143	WL-4014	WL-4014	-
	3	CA-A1881, CA-A1896, WL-8007, CA-J-8143	WL-4014	WL-4014	-

\*Notes to designer (delete this note after reading and replace with file block information)\*  
 1. Any modification to these details could result in an application/system not meeting the cUL or Intertek Classification or the intended temperature or fire ratings.  
 2. Details shown are up to date as of March 2020.  
 3. For additional information on the details, refer to the most current "Underwriter's Laboratories Fire Resistance Directory (Volume 2)."

JOB NUMBER:  
 DRAWN:  
 CHECKED:  
 ISSUE DATE:  
 REVISIONS:  
 CONTENTS:  
 MEP PENETRATIONS  
 HORIZONTAL PENETRATIONS  
 2 HR.  
 SHEET NAME:  
**MEP.1.1**  
 SHEET NUMBER: