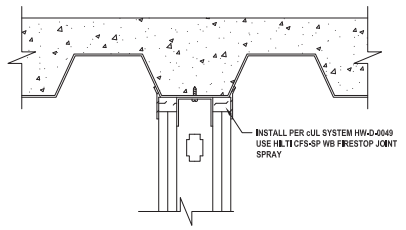
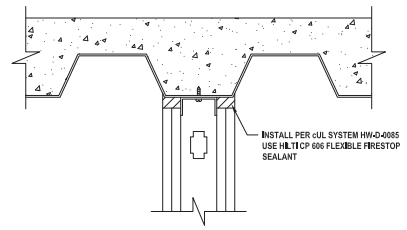


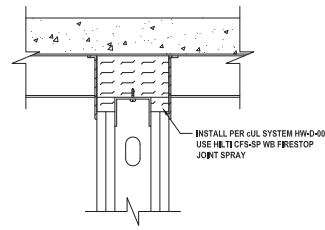
1 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



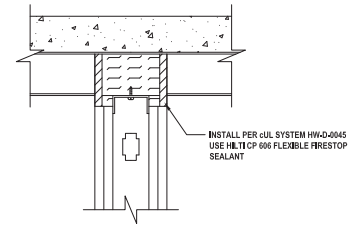
2 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



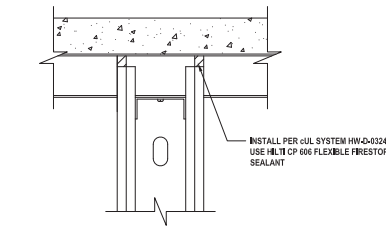
3 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



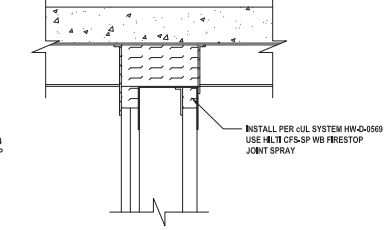
4 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



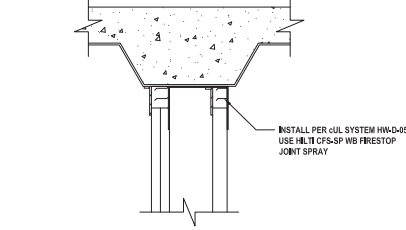
5 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



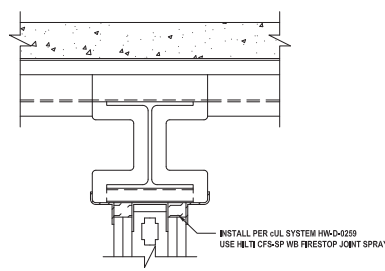
6 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



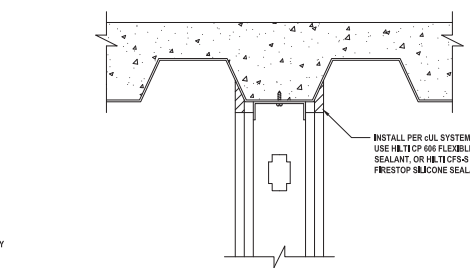
7 TOP OF WALL JOINT : GYPSUM SHAFT WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



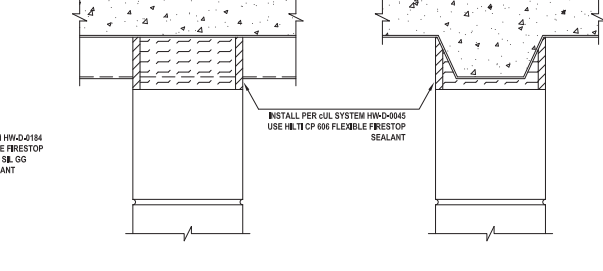
8 TOP OF WALL JOINT : GYPSUM SHAFT WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



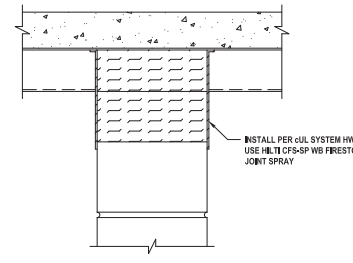
9 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



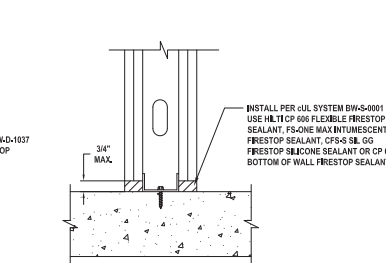
10 TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



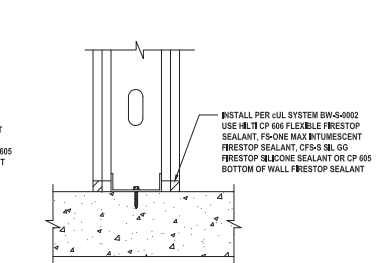
11 TOP OF WALL JOINT : CONCRETE WALL OR CONCRETE BLOCK WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



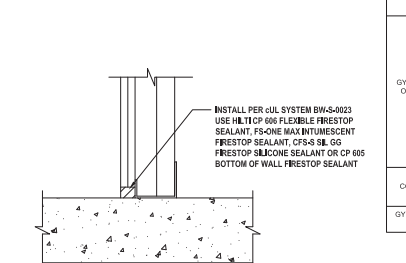
12 TOP OF WALL JOINT : CONCRETE WALL OR BLOCK WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



13 BOTTOM OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



14 BOTTOM OF WALL JOINT : GYPSUM WALL ASSEMBLY (2-HR.)  
NOT TO SCALE



15 BOTTOM OF WALL JOINT : GYPSUM SHAFT WALL ASSEMBLY (2-HR.)  
NOT TO SCALE

Notes:

- Refer to section 07840 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
- Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
  - \* Minimum and maximum Width of Joints
  - \* Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
- If alternate details matching the field conditions are not available, Manufacturer's engineering judgment drawings are acceptable. 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 assemblies shall be prominently labeled with the following information:
  - \* ATTENTION: Fire Rated Assembly
  - \* cUL System #
  - \* Product(s) used
  - \* Hourly Rating (Assembly Rating)
  - \* Installation Date

| JOINT TYPE  | F-RATING (HR) | H.L.T.I. INC. - BASIS OF DESIGN cUL SYSTEM   |   |
|---|---------------|--|---|
|   |               | JOINT WIDTH LESS THAN OR EQUAL TO 2"   | JOINT WIDTH GREATER THAN 2", LESS THAN OR EQUAL TO 4" |
| CONCRETE (FLOOR-TO-FLOOR)   | 1             | FF-D-1012, FF-D-1013 <sup>1</sup>  | FF-D-1012, FF-D-1013                                  |
|   | 2             | FF-D-1012, FF-D-1013 <sup>1</sup>  | FF-D-1012, FF-D-1013                                  |
|   | 3             | FF-D-1011, FF-D-1020 <sup>1</sup>  | FF-D-1011, FF-D-1026                                  |
|   | 4             | FF-D-1047  | FF-D-1125   |
| CONCRETE (EDGE OF FLOOR SLAB-TO-WALL)                                   | 1             | FW-D-1011, FW-D-1012, FW-D-1013  | FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021            |
|   | 2             | FW-D-1011, FW-D-1012, FW-D-1013  | FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021            |
|   | 3             | FW-D-1011  | FW-D-1011, FW-D-1021                                  |
|   | 4             | FW-D-1047  | FW-D-1052   |
| CONCRETE OR BLOCK WALL TO FLAT CONCRETE FLOOR (TOP-OF-WALL)             | 1             | N/A**  | N/A**   |
|   | 2             | HW-D-0087  | HW-D-1059   |
|   | 3             | HW-D-1008; HW-D-1028   | HW-D-1008   |
|   | 4             | HW-D-1042  | HW-D-1103   |
| CONCRETE OR BLOCK WALL TO CONCRETE OVER FLUTED METAL DECK (TOP-OF-WALL) | 1             | HW-D-0088  | N/A**   |
|   | 2             | HW-D-0060, HW-D-0081, HW-D-0088  | HW-D-1037   |
|   | 3             | N/A**  | N/A**   |
|   | 4             | HW-D-0284  | N/A**   |
| GYPSUM WALL TO FLAT CONCRETE FLOOR (TOP-OF-WALL)                        | 1             | HW-D-0787, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119  | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 2             | HW-D-0787, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119  | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 3             | HW-D-0119  | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 4             | HW-D-0942 (FLAT CONCRETE)  | N/A**   |
| GYPSUM SHAFT WALL TO TOP-OF-WALL  | 1             | HW-D-0081, HW-D-0542 (CONCRETE OVER METAL DECK)  | N/A**   |
|   | 2             | N/A**  | N/A**   |
| GYPSUM SHAFT WALL TO CONCRETE FLOOR (BOTTOM-OF-WALL)                    | 1             | BW-S-0023  | N/A**   |
|   | 2             | BW-S-0023  | N/A**   |
| GYPSUM WALL TO CONCRETE FLOOR (BOTTOM-OF-WALL)                          | 1             | BW-S-0001, BW-S-0002   | N/A**   |
|   | 2             | BW-S-0001, BW-S-0002   | N/A**   |
| GYPSUM WALL TO CONCRETE OVER FLUTED METAL DECK (TOP-OF-WALL)            | 1             | HW-D-0042 <sup>1</sup> , HW-D-0049 <sup>1</sup> , HW-D-0077 <sup>1</sup> , HW-D-0086 <sup>1</sup> , HW-D-0085, HW-D-0048 <sup>1</sup> , HW-D-0076 <sup>1</sup> , HW-D-0077 <sup>1</sup> , HW-D-0154, HW-D-0184 <sup>1</sup> , HW-D-0202, HW-D-0295, HW-D-0338 <sup>1</sup> | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 2             | HW-D-0042 <sup>1</sup> , HW-D-0049 <sup>1</sup> , HW-D-0077 <sup>1</sup> , HW-D-0086 <sup>1</sup> , HW-D-0085, HW-D-0048 <sup>1</sup> , HW-D-0076 <sup>1</sup> , HW-D-0077 <sup>1</sup> , HW-D-0154, HW-D-0184 <sup>1</sup> , HW-D-0202, HW-D-0295, HW-D-0338 <sup>1</sup> | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 3             | HW-D-0292, HW-D-0295   | HW-D-1011, HW-D-1012, HW-D-1020                       |
|   | 4             | HW-D-0292, HW-D-0295   | N/A**   |
| CONCRETE (WALL TO WALL)   | 3             | WW-D-1011 <sup>1</sup> , WW-D-0032   | WW-D-1011   |
|   | 4             | WW-D-1047  | WW-D-1128   |
| GYPSUM TO CONCRETE (WALL TO WALL)                                       | 1             | WW-D-0040  | N/A**   |
|   | 2             | WW-D-0040  | N/A**   |

\*\*SEE NOTES  
 \*CONTACT H.L.T.I. FOR CURRENT cUL-CRATED SYSTEM OR ENGINEER JUDGMENT DRAWING. RE-CLASSIFIED NOTES: 1. CLASSIFIED SYSTEMS FOR 2" - 4" WIDE JOINTS CAN BE USED FOR JOINTS 2" WIDE AND LESS. 2. CONFIRM THAT MOVEMENT CAPABILITIES OF THE SELECTED cUL SYSTEM MEETS OR EXCEEDS THE SPECIFIED MOVEMENT RANGE OF THE PARTICULAR JOINT. 3. SYSTEMS MARKED WITH AN ASTERISK (\*) ARE SUITABLE FOR TOP-OF-WALL JOINTS WHERE THE FLUTED METAL DECK HAS SPRAY-ON MONOCOTE (R-4) PREPARED. 4. VERIFY ALLOWABLE JOINT WIDTH ON SPECIFIC cUL SYSTEM DRAWING.

\*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:

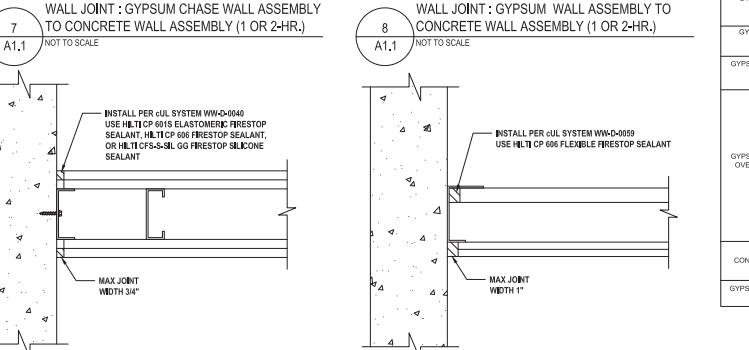
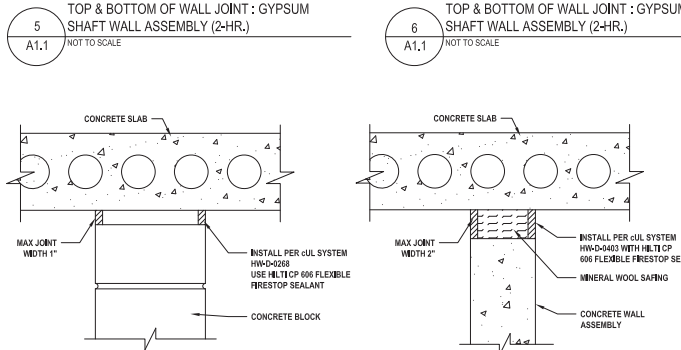
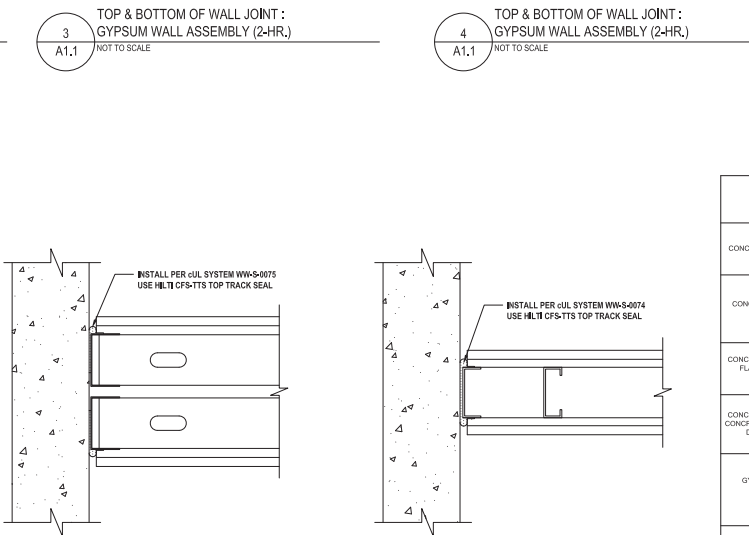
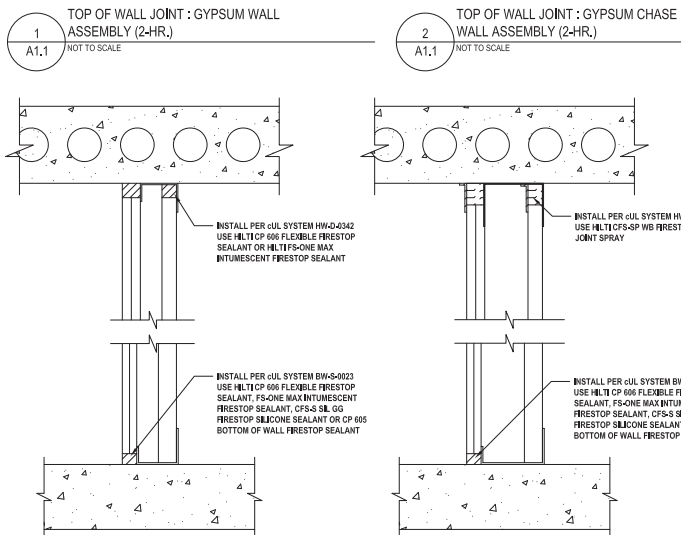
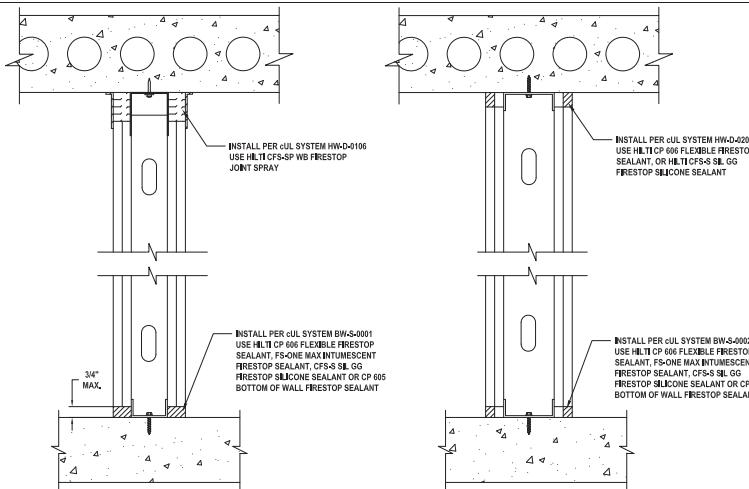
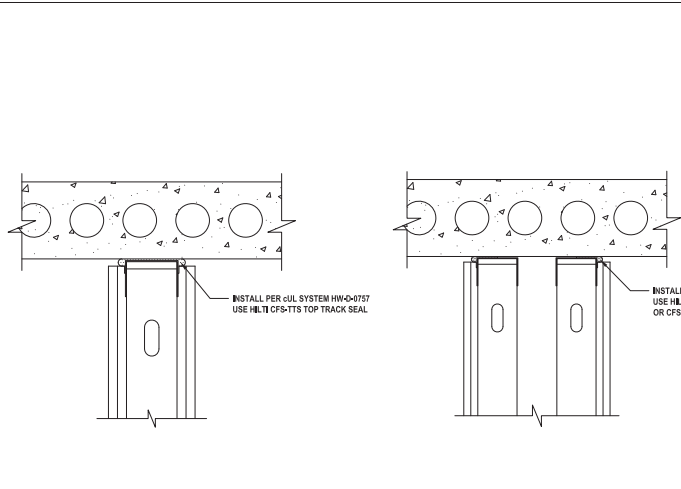
CONTENTS:

CONCRETE OVER METAL DECK

SHEET NAME:

**A1.1**

SHEET NUMBER:



- Notes:
- Refer to section 07840 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
  - Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
    - \* Minimum and maximum Width of Joints
    - \* Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
  - If alternate details matching the field conditions are not available, Manufacturer's engineering judgment drawings are acceptable. 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 assemblies shall be prominently labeled with the following information:
    - \* ATTENTION: Fire Rated Assembly
    - \* cUL System #
    - \* Product(s) used
    - \* Hourly Rating (Assembly Rating)
    - \* Installation Date

| JOINT TYPE  | F-RATING (HR) | HILTI INC. - BASIS OF DESIGN cUL SYSTEM   |  |
|---|---------------|---|--|
|   |               | JOINT WIDTH LESS THAN OR EQUAL TO 2"  | JOINT WIDTH GREATER THAN 2" LESS THAN OR EQUAL TO 8" |
| CONCRETE (FLOOR-TO-FLOOR)   | 1             | FF-D-1012, FF-D-1013  | FF-D-1012, FF-D-1013                                 |
|   | 2             | FF-D-1012, FF-D-1013  | FF-D-1012, FF-D-1013                                 |
|   | 3             | FF-D-1011, FF-D-1020*   | FF-D-1011, FF-D-1028                                 |
| CONCRETE (EDGE OF FLOOR SLAB-TO-WALL)                                   | 1             | FF-D-1047   | FF-D-1125  |
|   | 4             | FW-D-1011, FW-D-1012, FW-D-1013   | FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021           |
|   | 2             | FW-D-1011, FW-D-1012, FW-D-1013   | FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021           |
|   | 3             | FW-D-1011   | FW-D-1011, FW-D-1021                                 |
| CONCRETE OR BLOCK WALL TO FLAT CONCRETE FLOOR (TOP-OF-WALL)             | 1             | NA**  | NA**   |
|   | 2             | HW-D-0297*  | HW-D-1009  |
|   | 3             | HW-D-1008*, HW-D-0288   | HW-D-1008  |
|   | 4             | HW-D-1022   | HW-D-1003  |
| CONCRETE OR BLOCK WALL TO CONCRETE OVER FLUTED METAL DECK (TOP-OF-WALL) | 1             | HW-D-0288   | NA**   |
|   | 2             | HW-D-0888, HW-D-0981, HW-D-0989   | HW-D-1037  |
|   | 3             | NA**  | NA**   |
|   | 4             | HW-D-0284   | NA**   |
| GYPSUM WALL TO FLAT CONCRETE FLOOR (TOP-OF-WALL)                        | 1             | HW-D-0757, HW-D-0758  | HW-D-1011, HW-D-1012, HW-1020                        |
|   | 2             | HW-D-0757, HW-D-0758  | HW-D-1011, HW-D-1012, HW-1020                        |
|   | 3             | HW-D-0119   | HW-D-1011, HW-D-1012, HW-1020                        |
| GYPSUM SHAFT WALL TO TOP-OF-WALL  | 1             | HW-D-0343 (FLAT CONCRETE)   | NA**   |
|   | 2             | HW-D-0341, HW-D-0342 (CONCRETE OVER METAL DECK)   | NA**   |
| GYPSUM SHAFT WALL TO CONCRETE FLOOR (BOTTOM-OF-WALL)                    | 1             | BWS-0023  | NA**   |
|   | 2             | BWS-0023  | NA**   |
| GYPSUM WALL TO CONCRETE FLOOR (BOTTOM-OF-WALL)                          | 1             | BWS-0040  | NA**   |
|   | 2             | BWS-0040  | NA**   |
| GYPSUM WALL TO CONCRETE OVER FLUTED METAL DECK (BOTTOM-OF-WALL)         | 1             | HW-D-0207*, HW-D-0349*, HW-D-0087*, HW-D-0089*, HW-D-0095*, HW-D-0078*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-0282, HW-D-0295, HW-D-0283* | HW-D-1011, HW-D-1012, HW-1020                        |
|   | 2             | HW-D-0207*, HW-D-0349*, HW-D-0087*, HW-D-0089*, HW-D-0095*, HW-D-0078*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-0282, HW-D-0295, HW-D-0283* | HW-D-1011, HW-D-1012, HW-1020                        |
|   | 3             | HW-D-0292, HW-D-0295  | HW-D-1011, HW-D-1012, HW-1020                        |
|   | 4             | HW-D-0292, HW-D-0295  | NA**   |
| CONCRETE (WALL TO WALL)   | 1             | WW-D-0017, WW-D-0082  | WW-D-1089, WW-D-1084                                 |
|   | 2             | WW-D-0017, WW-D-0082  | WW-D-1089, WW-D-1084                                 |
|   | 3             | WW-D-1011*, WW-D-0032   | WW-D-1011  |
| CONCRETE (WALL TO WALL)   | 4             | WW-D-0047   | WW-D-1028  |
|   | 1             | WW-S-0074, WW-S-0075  | NA**   |
| GYPSUM TO CONCRETE (WALL TO WALL)                                       | 1             | WW-S-0074, WW-S-0075  | NA**   |
|   | 2             | WW-S-0074, WW-S-0075  | NA**   |

\* SEE NOTE 3  
 \*\* CONTACT THE CURRENT cUL-CRATED SYSTEM OR ENGINEER JUDGMENT DRAWING: 800-363-4499  
 NOTES: 1. CLASSIFIED SYSTEMS FOR 2" - 8" WIDE JOINTS MAY BE USED FOR JOINTS 2" WIDE AND LESS.  
 2. CONFIRM THAT MOVEMENT CAPABILITY OF THE SELECTED cUL SYSTEM MEETS OR EXCEEDS THE SPECIFIED MOVEMENT RANGE OF THE PARTICULAR JOINT.  
 3. SYSTEMS MARKED WITH ASTERISK ARE SUITABLE FOR TOP-OF-WALL JOINTS WHERE THE FLUTED METAL DECK HAS SPRAY-ON CONCRETE MESH REINFORCING.  
 4. DENY ALLOWABLE JOINT WIDTH ON SPECIFIC cUL SYSTEM DRAWING.

<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 (volumes 2)"