

RECEIVED

TOWN OF HEBRON
HES DRINKING WATER REMEDIATION BUILDING COMMITTEE
REGULAR MEETING

2020 SEP 18 P 12:00

HEBRON TOWN CLERK

HES Lead Remediation Building Committee
Mon, Sep 21, 2020 6:30 PM - 8:30 PM (EDT)

Please join my meeting from your computer, tablet or smartphone.
<https://global.gotomeeting.com/join/821612357>

You can also dial in using your phone.
United States: +1 (671) 317-3122

Access Code: 821-612-357

Monday, September 21, 2020

6:30 PM

AGENDA

1) CALL TO ORDER

2) PLEDGE OF ALLEGIANCE

3) PUBLIC COMMENT

This section of the agenda is reserved for persons in attendance who wish to briefly address the HES Drinking Water Remediation Building Committee. The committee requests that comments be limited to three minutes or less. Persons wishing to address the Committee regarding agenda items should request clarification from the Chair as to whether or not they should speak during the public comment portion of the meeting or at the time the agenda item is considered

4) CONSENT AGENDA APPROVAL OF MINUTES ET AL

- a) Regular meeting minutes 07-20-2020
- b) Regular meeting minutes 08-17-2020
- c) Special meeting minutes 08-31-2020
- d) Previous Meeting SP&A notes 08-17-2020

5) SUPERINTENDENT REPORT - ACTIVITIES

- a) Status Consent Agreement
- b) School opening and HES Water use

6) SILVER PETRUCELLI – NUTMEG COMPANIES

- a) Fuss and O'Neil new invoice
- b) Asbestos Documentation (see attached)
- c) Punch List Status
- d) "As Built's" project and calking required by DPH and Building official
- e) Drawing files for town

7) CONSIDER AND ACT ON "CERTIFICATE OF SUBSTANTIAL COMPLETION"

8) PAYMENT REQUISITIONS

a) Consider and Act on Approved Requisitions:

i) Hungerford	Inv #87091	\$540.00
ii) Silver Petrucelli	Inv 20-2041	\$3,343.1
iii) Fuss & O'Neil	Inv 0225426	\$3,770.00
iv) Pheonix Environ. Lab	Inv 876476	\$1,099.00

9) OTHER PERTINENT PROJECT BUSINESS

10) ADJOURNMENT

**TOWN OF HEBRON
HES DRINKING WATER REMEDIATION BUILDING COMMITTEE
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TOWN OF HEBRON
HES DRINKING WATER REMEDIATION BUILDING COMMITTEE
August 17, 2020 – Regular Meeting
Virtual Conference

RECEIVED

2020 SEP 14 A 8:24

Carol A. Compton
HEBRON TOWN CLERK

Members Present: M. Leichter, W. Warwick, D. Foster, R. Steiner, H. Petit

Guests: Dr. T. Baird, K. O'Leary, W. Durocher, S. June, B. Silver, R. Haley, M. Larkin, M. Fitzgerald

The meeting was called to order at 6:30 p.m.

Consent Agenda:

Regular Minutes 8-3-20 and Previous Meeting SP&A notes 8-3-20: R. Steiner moved and H. Petit seconded a motion to approve the Consent Agenda. The motion passed unanimously.

Superintendent's Report: Dr. Baird reported that he was in the building today and it looked a lot different than the last time he was there. It is looking a lot closer to normal.

W. Durocher reported that they will be taking samples tomorrow morning for water testing.

Availability of Documentation: M. Leichter stated that he is still looking for the asbestos paperwork. S. June indicated that the last update he received indicated that the paperwork would be available in a couple of weeks.

Dr. Baird questioned about a Certificate of Occupancy. M. Fitzgerald stated that R. Blais would be able to help with that question.

K. O'Leary stated that she received a lot of the invoices for payment from the Town this week and should have all them by the end of the week.

Clerk Report: M. Fitzgerald reported that Nutmeg Companies considered themselves complete last Friday. There was one issue regarding the fire proofing on a section that did not pertain to the project. M. Fitzgerald indicated that they need to obtain design for this for approval. M. Fitzgerald noted that he has been in constant contact with R. Blais regarding this issue.

M. Fitzgerald reported that he created a punch list last week to ensure that the Town would be comfortable with the final analysis of the project. M. Fitzgerald also reported that he believes all of the issues that were noted have been taken care. The only outstanding one is the fire proofing in the tunnel area of the boiler room, which is not related to the project itself.

M. Leichter moved and W. Warwick seconded a motion that a letter of record be written for M. Fitzgerald because he has done such a great job. The motion passed unanimously.

Silver Petrucelli – Nutmeg Companies: S. June reported that they will be going back out to the school to make sure that everything has been done on the punch list. S. June stated that he will let the Town know when they are done as well as when Nutmeg is completed.

It was reported that the Fire Marshal has been to the site to inspect the first floor and the only area left is the basement for him to review.

Status Water Line Repair: M. Leichter reported that they are figuring out the logistics on the money for this but the invoice will be getting paid.

Payment Requisitions:

MMFC – Invoice #9: M. Leichter moved and W. Warwick seconded a motion to approve MMFC's Invoice #9 in the amount of \$5,544.50. The motion passed unanimously.

Silver Petrucelli – Invoice #20: W. Warwick moved and D. Foster seconded a motion to approve Silver Petrucelli's Invoice #20 in the amount of \$2,625.00. The motion passed unanimously.

CorrTech – Invoice #14457 01: W. Warwick moved and R. Steiner seconded a motion to approve CorrTech's Invoice #14457 01 in the amount of \$3,770.00. The motion passed unanimously.

W. Warwick moved and D. Foster seconded a motion to have M. Leichter write a letter of appreciate for Silver Petrucelli's work on this project. The motion passed unanimously.

W. Warwick moved and D. Foster seconded a motion to adjourn the meeting at 7:25 p.m. The motion passed unanimously.

Tricia Schiavi
Board Clerk

TOWN OF HEBRON
HES DRINKING WATER REMEDIATION BUILDING COMMITTEE
August 31, 2020 – Regular Meeting
Virtual Conference

RECEIVED

2020 SEP 14 A 8:24

Carla A. Pompononi
HEBRON TOWN CLERK

Members Present: M. Leichter, W. Warwick, D. Foster, R. Steiner (6:37 p.m.)

Member Absent: H. Petit

Guests: Dr. T. Baird, K. O'Leary, W. Durocher, J. Duhamel, K. Sullivan, E. Gawendo, R. Haley, K. Eldridge

The meeting was called to order at 6:31 p.m.

Superintendent's Report: Dr. Baird reported that all of the water testing came back great and are just waiting for a signature.

R. Steiner arrived at 6:37 p.m.

D. Foster questioned why the grab bars need to be replaced. R. Haley stated that they have increased the compliance with the ADA requirements and the bathroom across from the Media Center did not meet the requirement.

Payment Requisitions:

MMFC – Invoice #10: W. Warwick moved and D. Foster seconded a motion to approve MMFC's Invoice #10 in the amount of \$1,194.00. The motion passed unanimously.

Hungerfords: W. Warwick moved and D. Foster seconded a motion to approve Hungerford's invoice in the amount of \$855.00. The motion passed unanimously.

Nutmeg Companies – Invoice #6: D. Foster moved and W. Warwick seconded a motion to approve Nutmeg's Invoice #6 in the amount of \$65,221.83. The motion passed unanimously.

W. Warwick moved and D. Foster seconded a motion to adjourn the meeting at 6:52 p.m. The motion passed unanimously.

Tricia Schiavi
Board Clerk



AIA® Document G704™ – 2017


Certificate of Substantial Completion

PROJECT: <i>(name and address)</i> Hebron Elem. School Contaminated Water Piping Replacement 92 Church Street Hebron, CT 06248	CONTRACT INFORMATION: Contract For: General Construction Date: December 13, 2019	CERTIFICATE INFORMATION: Certificate Number: 001 Date: September 2, 2020
OWNER: <i>(name and address)</i> Town of Hebron 15 Gilead Street Hebron, CT 06248	ARCHITECT: <i>(name and address)</i> Silver/Petrucci+Associates, Inc. 3190 Whitney Avenue Hamden, CT 06518	CONTRACTOR: <i>(name and address)</i> The Nutmeg Companies, Inc. 1 Ohio Avenue Norwich, CT 06360

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.

(Identify the Work, or portion thereof, that is substantially complete.)

Hebron Elementary School Contaminated Water Piping Replacement (All areas of the Work)

<u>Silver/Petrucci+Assoc.</u> ARCHITECT <i>(Firm Name)</i>	 SIGNATURE	<u>Ryan Haley, Project Mgr.</u> PRINTED NAME AND TITLE	<u>August 24, 2020</u> DATE OF SUBSTANTIAL COMPLETION
---	--	---	--

WARRANTIES

The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

ALL WARRANTIES COMMENCE ON THE DATE OF SUBSTANTIAL COMPLETION.

WORK TO BE COMPLETED OR CORRECTED

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:

(Identify the list of Work to be completed or corrected.)

Refer to S/P+A Architectural Punchlist Report #2 and P/F/P Punchlist Report #2 (Dated: 8/24/2020)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within THIRTY (30) days from the above date of Substantial Completion.


Cost estimate of Work to be completed or corrected: \$20,000.00

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

Per Contract

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

<u>The Nutmeg Companies, Inc.</u> CONTRACTOR <i>(Firm Name)</i>	 SIGNATURE	<u>Evert L. Gawendo, VP</u> PRINTED NAME AND TITLE	<u>9/4/20</u> DATE
<u>Town of Hebron</u> OWNER <i>(Firm Name)</i>	_____ SIGNATURE	<u>Malcolm Leichter BC Chair</u> PRINTED NAME AND TITLE	_____ DATE

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH



Deidre S. Gifford, MD, MPH
Acting Commissioner

Ned Lamont
Governor
Susan Bysiewicz
Lt. Governor

Drinking Water Section

September 16, 2020

Mr. Thomas Baird
Hebron Public Schools
580 Gilead St
Hebron, CT 06248

PUBLIC WATER SYSTEM: Hebron Elementary School, Hebron CT
CLASSIFICATION TYPE: Non Transient Non Community
PWSID: CT0670112

SUBJECT: Consent Agreement DWS-19-067-056

Dear Mr. Baird:

Hebron Elementary School entered into the above-mentioned Agreement with the Department on November 8, 2019. Item 8 of the Agreement required that the School, on or before August 31, 2020, verify in writing to the Department that the piping replacement project has been completed. On August 28, 2020, the Department received an e-mail from Malcolm Leichter notifying the Department that the pipe replacement project was complete.

As a result of the completion of this project, in accordance with Item 8 of the Agreement, the Department will no longer require compliance with Item 3 of the Agreement which required monthly compliance with lead public education requirements. However, the Agreement will not be closed out until two rounds of lead and copper tap sampling are submitted in accordance with Section 19-13-B102(e)(8) of the Regulations of Connecticut State Agencies that meet the lead action level as noted in Item 9 of the Agreement.

The Department appreciates your commitment to resolving past lead action level exceedances by completing this project. If you have any questions, please contact Gary Johnson at gary.r.johnson@ct.gov

Sincerely,

A handwritten signature in blue ink that reads "Lori Mathieu" with the year "2020" written to the right.

Lori Mathieu
Public Health Branch Chief
Environmental Health and Drinking Water Branch

cc: Mr. Russell S. Melmed, Director of Health, Chatham Health District
Mr. Brendan Rowley, Certified Operator
Mr. Malcolm Leichter, Town of Hebron
Mr. Andrew Tierney, Town of Hebron



Phone: (860) 509-7333 • Fax: (860) 509-7359
Telecommunications Relay Service 7-1-1
410 Capitol Avenue, P.O. Box 340308, MS#12DWS
Hartford, Connecticut 06134-0308
www.ct.gov/dph/publicdrinkingwater

Affirmative Action/Equal Opportunity Employer



STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

Deidre S. Gifford, MD, MPH
Acting Commissioner



Ned Lamont
Governor
Susan Bysiewicz
Lt. Governor

Drinking Water Section

**ACKNOWLEDGEMENT OF PROJECT COMPLETION
AND PROJECT CLOSURE**

September 3, 2020

Dr. Thomas Baird
Superintendent of Schools
Hebron Public Schools
580 Gilead Street
Hebron, CT 06248

Public Water System/Applicant: HEBRON ELEMENTARY SCHOOL
PWS ID (if applicable): CT0670112 **DPH Project #:** 2020-0026
Project Location: Hebron, CT
Project Name: OCCT- Replacement Of All Plumbings
Date of Project Submission: 12/16/2019, 2/21/2020, 3/3/2020, 3/5/2020

Project Description: Replace all internal plumbings, taps, and water fountains

Based on the following items, the Approval for Construction and Installation of Water and Treatment Works dated March 17, 2020 and documents on record for this project, the project is acknowledged as being completed.

- (XX) Receipt of a Certification of Completed Water or Treatment Works Construction/Installation form, dated August 28, 2020.
- (XX) Submission of water quality test results meeting Regulations of Connecticut State Agencies.

This letter also serves as a record of project closure and project activation. Any changes to your system that are a result of this project will be added to our inventory database as warranted. An as-built drawing must be submitted to this office by October 31, 2020.

If you have any questions regarding this letter, please feel free to contact me at 860-509-7333.

Sincerely,

Handwritten signature of Lori J. Mathieu, dated 2020.

Lori J. Mathieu
Public Health Branch Chief
Environmental Health & Drinking Water Branch



Phone: (860) 509-7333 • Fax: (860) 509-7359
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Affirmative Action/Equal Opportunity Employer



Dr. Tom Baird
September 3, 2020
DPH Project #: 2020-0026
Page 2

C: Heather Aaron, MPH, LNHA, Deputy Commissioner, Department of Public Health
Mr. Russell S. Melmed, Director of Health, Chatham Health District
Mr. Brendan Rowley, Certified Operator Mr. Michael Hage, DPH-DWS
Mr. Thomas Chyra, DPH-DWS Mr. Gary Johnson, DPH-DWS
Ms. Cindy Sek, DPH-DWS Mr. Christopher Roy, DPH-DWS



Certificate of Compliance

as a

DESIGNATED RESPONSIBLE INDIVIDUAL

Is hereby granted on this day January 1, 2020 to:

John Chiangi
Stonington Services dba Brand Fire Services

for successfully meeting all test criteria.

FM Approvals hereby certifies that the individual shown above met all test criteria contained in Approval Standard 4991, Approval of Firestop Contractors, to qualify as a Designated Responsible Individual (DRI).

Said recognition is subject to satisfactory field performance, accumulation of Continuing Education Units and periodic written re-examinations.

A handwritten signature in dark ink that reads 'Phillip J. Smith'.

Phillip J. Smith
VP - Manager, Materials
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

Expires on December 31, 2022



Member of the FM Global Group

Hilti. Outperform. Outlast.

Qualified Operator of Power-Actuated Tools 5489570

on _____ (Date)

88525 (Number of Authorized Instructor Card)

and maintenance of the Hilti power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.

Hilti. Outperform. Outlast.

Qualified Operator of Power-Actuated Tools 5490570

on _____ (Date)

88525 (Number of Authorized Instructor Card)

and maintenance of the Hilti power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.

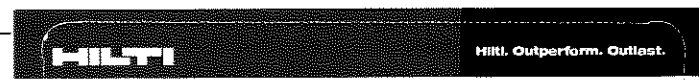
Hilti. Outperform. Outlast.

Qualified Operator of Power-Actuated Tools 5491570

on _____ (Date)

88525 (Number of Authorized Instructor Card)

and maintenance of the Hilti power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.



Qualified Operator of Power-Actuated Tools 5487367

This certifies that JEFF ABREU
(Name of the operator)

has received the prescribed training on the operation of the following power-actuated Hilti tools: _____ on _____
(List tools covered by this card) (Date)

[Signature] (Signature of Authorized Instructor) 88525 (Number of Authorized Instructor Card)

I have received instruction on the safe operation and maintenance of the Hilti power-actuated tools and models specified, and agree to comply with all rules and regulations governing their use.

Signature: _____
Failure to comply with any of the rules and regulations for safe operation of power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.



Qualified Operator of Power-Actuated Tools 5487867

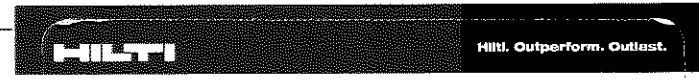
This certifies that CHRISTOPHER SANTACROCE
(Name of the operator)

has received the prescribed training on the operation of the following power-actuated Hilti tools: _____ on _____
(List tools covered by this card) (Date)

[Signature] (Signature of Authorized Instructor) 88525 (Number of Authorized Instructor Card)

I have received instruction on the safe operation and maintenance of the Hilti power-actuated tools and models specified, and agree to comply with all rules and regulations governing their use.

Signature: _____
Failure to comply with any of the rules and regulations for safe operation of power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.



Qualified Operator of Power-Actuated Tools 5488367

This certifies that JOHN ANDERSON
(Name of the operator)

has received the prescribed training on the operation of the following power-actuated Hilti tools: _____ on _____
(List tools covered by this card) (Date)

[Signature] (Signature of Authorized Instructor) 88525 (Number of Authorized Instructor Card)

I have received instruction on the safe operation and maintenance of the Hilti power-actuated tools and models specified, and agree to comply with all rules and regulations governing their use.

Signature: _____
Failure to comply with any of the rules and regulations for safe operation of power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.



Qualified Operator of Power-Actuated Tools 5488867

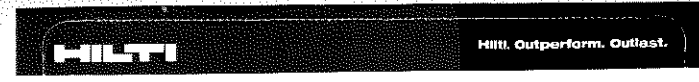
This certifies that STEPHEN MEDBERY
(Name of the operator)

has received the prescribed training on the operation of the following power-actuated Hilti tools: _____ on _____
(List tools covered by this card) (Date)

[Signature] (Signature of Authorized Instructor) 88525 (Number of Authorized Instructor Card)

I have received instruction on the safe operation and maintenance of the Hilti power-actuated tools and models specified, and agree to comply with all rules and regulations governing their use.

Signature: _____
Failure to comply with any of the rules and regulations for safe operation of power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.



Qualified Operator of Power-Actuated Tools 5486867

This certifies that JOE CALASH
(Name of the operator)

has received the prescribed training on the operation of the following power-actuated Hilti tools: _____ on _____
(List tools covered by this card) (Date)

[Signature] (Signature of Authorized Instructor) 88525 (Number of Authorized Instructor Card)

I have received instruction on the safe operation and maintenance of the Hilti power-actuated tools and models specified, and agree to comply with all rules and regulations governing their use.

Signature: _____
Failure to comply with any of the rules and regulations for safe operation of power-actuated tools shall be cause for the immediate revocation of this card, which must be surrendered upon demand to the applicable authority. This authorization is valid for the tools listed above so long as Hilti fasteners, cartridges and accessories, or products of the same level of safety and performance, are used.

High performance intumescent firestop sealant FS-ONE MAX

Product description

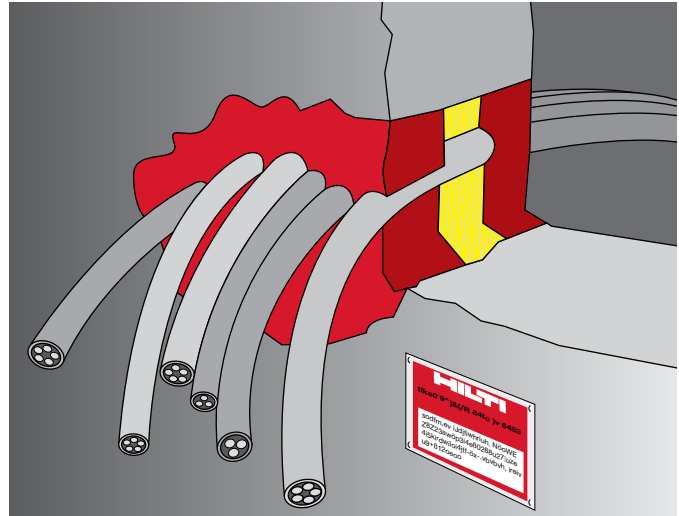
- Intumescent (expands when exposed to fire) firestop sealant that helps protect combustible and non-combustible penetrations for up to 4 hours fire rating

Applications

- Effectively seals most common through penetrations in a variety of base materials
- For use on concrete, masonry and drywall
- Mixed and multiple penetrations
- Metal pipe penetrations
- Insulated metal pipe penetrations
- Plastic pipe penetrations
- Cable bundles and trays
- HVAC penetrations

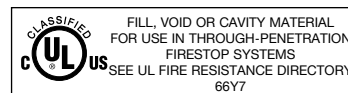
Advantages

- One product for a variety of common through penetrations
- Cost-effective and easy-to-use solution
- Water-based and paintable
- W-rated systems available
- Ethylene glycol-free
- Industry leading VOC results
- Convenient multi application firestop solution for penetrations



Technical Data*	
Chemical basis	Water-based acrylic dispersion
Color	Red
Application temperature	41°F to 104°F
Storage and transportation range	41°F to 77°F
Approx. cure time *	4 mm / 3 days
Shelf life	12 months **
Temperature resistance range	-4°F to 212°F
Mold and mildew performance	Class 0 (ASTM G21-13)
Mold and mildew resistant	Yes
Surface burning characteristics (ASTM E 84-14)	Flame Spread: 0 Smoke Development: 10
Approvals	California State Fire Marshal - in progress
Tested in accordance with	ASTM G21 ASTM E 90 CAN/ULC-S115 UL 1479 ASTM E 814 ASTM E84

* At 75°F (24°C) and 50% relative humidity
** from date of manufacture



Flexible Firestop Sealant (CP 606)

Product description

- An acrylic based firestop sealant that provides movement capability in fire rated joints and seals through-penetrations applications

Product features

- Silicone free
- Halogen, asbestos and solvent free
- Paintable
- Tested up to 33% movement with 500 cycles in accordance to UL 2079 and ASTM 1966
- Smoke and fume resistant
- Easy clean up with water
- Single component systems available
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings

Areas of application

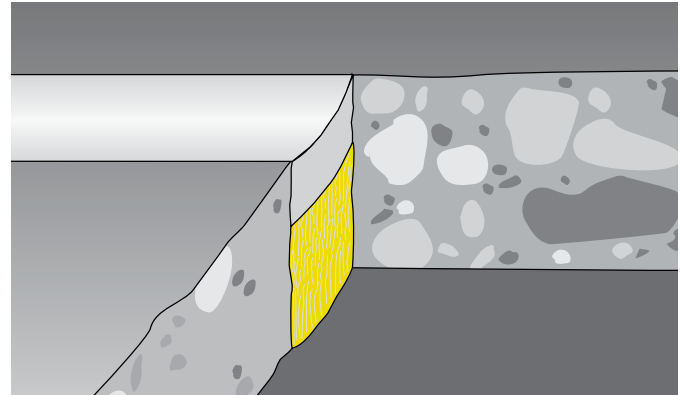
- Sealing construction/expansion joints
- Top-of-wall joints
- Metal pipes
- Cable bundles
- HVAC penetrations

For use with

- Various base materials such as masonry, concrete, gypsum, etc.
- Wall and floor assemblies rated up to 3 hours

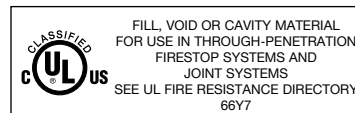
Examples

- Where a gypsum wall assembly meets the underside of a metal or concrete deck
- Sealing expansion joints to impede the passage of fire, smoke and toxic fumes
- Sealing around HVAC penetrations through fire-rated assemblies



Technical Data*	CP 606
Chemical basis	Acrylic based firestop sealant
Color	Available in red, white and gray
Application temperature	40°F to 104°F (5°C to 40°C)
Skin-forming time	Approx. 15 min
Curing time	Approx. 3 mm / 3 days
Average volume shrinkage (ASTM C1241)	22.2%
Movement capability	Approx. 10%
Temperature resistance	-22°F to 176°F (-30°C to 80°C)
Surface burning characteristics (ASTM E 84-96)	Flame Spread: 10 Smoke Development: 0
Sound transmission classification (ASTM E 90-99)	56 (Relates to specific construction)
Tested in accordance with	<ul style="list-style-type: none"> • UL 2079 • ASTM E 814 • ASTM E 1966 • ASTM E 84 • UL 1479 • ASTM G21

*At 73°F (23°C) and 50% relative humidity



Installation instructions for CP 606

Notice

- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information
- The use of backing material is recommended to control the sealant depth and help ensure assembly seal is complete

Opening

1. Clean the opening. Surfaces to which CP 606 will be applied should be cleaned of loose debris, dirt, oil, wax and grease. The surface should be moisture and frost free.

Application of firestop

2. Insert fill of mineral wool or backer (as required).
3. Apply firestop over backer.
4. Smooth firestop sealant with a trowel before the skin forms. Once cured, CP 606 can only be removed mechanically.
5. For maintenance reasons, a penetration seal can be

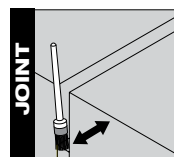
permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use

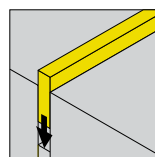
- On areas immersed in water

Storage

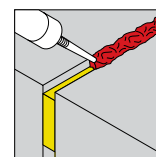
- Store only in the original packaging in a location protected from moisture at a temperature of 40°F to 77°F (5°C to 25°C)
- Observe expiration date on package



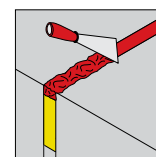
1. Clean opening



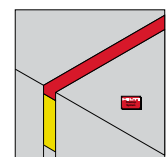
2. Insert backing material compressed per UL System



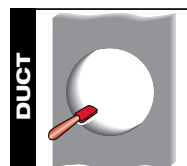
3. Apply CP 606



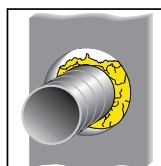
4. Smooth CP 606



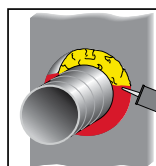
5. Fasten identification plate (if required)



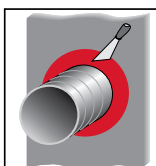
1. Clean opening



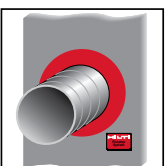
2. Insert backing material



3. Apply CP 606



4. Smooth CP 606



5. Fasten identification plate (if required)

Hilti. Outperform. Outlast.

Firestop Joint Spray (CFS-SP WB)

Product description

- A sprayable fire-rated mastic for construction joints where maximum movement is required

Product features

- Sprayable or apply by brush
- Maximum flexibility, meets 500 cycle requirements (Class II and III Approval) (ASTM E 1966 and UL 2079)
- Quick and easy installation with the Titan 600 or 1100 Sprayers can help save you time and money
- Contains no halogens, solvents or asbestos
- Water based formulation so spills and over-spray clean up quickly and easily
- Paintable
- Meets LEED™ requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings

Areas of application

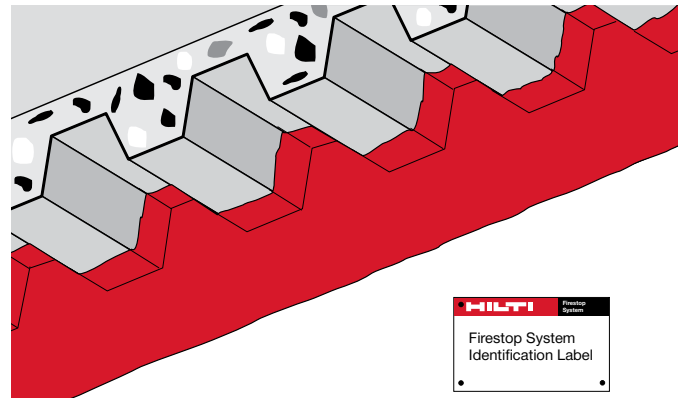
- Top-of-wall joints
- Curtain wall/edge of slab
- Expansion joints

For use with

- Concrete, masonry and gypsum wall assemblies
- Wall and floor/wall assemblies rated up to 4 hours

Examples

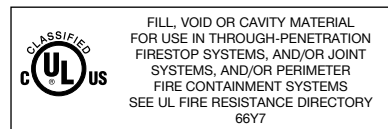
- Where a gypsum wall assembly meets the underside of a metal or concrete deck
- Where a concrete floor assembly meets with non-rated exterior wall (concrete, glass, etc.)
- Where two concrete floor/wall assemblies meet



Technical Data*	CFS-SP WB
Density	Approx. 10.8 lb/gal (1.3 g/cm³)
Color	Available in red, white and gray**
Application temperature	39°F to 104°F (4°C to 40°C)
Temperature resistance	-40°F to 176°F (-40°C to 80°C)
Consistency	Sprayable liquid
Chemical basis	Acrylic-water-based-dispersion
Curing time	Approx. 24 hours @ 73°F, 50% humidity for 1/8" depth
Average volume shrinkage (ASTM C1241)	51.1%
Ph-value	Approx. 8-9
Movement capability	Up to 50%
Surface burning characteristics (CAN/ULC-S102)	Flame spread: 15 Smoke development: 10
Sound transmission classification (ASTM E 90-99)	59 (per tested construction type)
Tested in accordance with	
<ul style="list-style-type: none"> • UL 2079 • UL 1479 	<ul style="list-style-type: none"> • ASTM E 1966 • ASTM E 814 • ASTM E 84 • ASTM E 2337 • ASTM E 2307

*At 73°F (23°C) and 50% relative humidity

**Gray color requires six (6) weeks lead time



Installation instructions for Firestop Joint Spray CFS-SP WB

Notice

- Before handling, read Material Safety Data Sheet and product label for safe usage and health information.
- Instructions below are general guidelines — always refer to the applicable drawing in the UL Fire Resistance Directory or Hilti Firestop Systems Guide for complete installation information

Opening

1. Clean the opening. Surfaces to which Firestop Joint Spray will be applied should be cleaned of loose debris, dirt, oil, wax and grease. The surface should be moisture and frost free.

Application of Firestop Joint Spray

2. Mineral wool packing: Install the prescribed back filling material type and depth to obtain desired rating.
3. Application of Firestop Joint Spray: Apply Firestop Joint Spray to the required depth in order to obtain the desired rating. Make sure Firestop Joint Spray contacts all surfaces and overlaps beyond all surrounding surfaces (Refer to UL System). Titan Sprayers have been successful in applying Firestop Joint Spray. Hilti recommends the use of the Titan 600 (for application temperatures above 50°F) or

Firestop Joint Spray may also be brushed on with a paint brush. Contact Hilti Technical Support for more information.

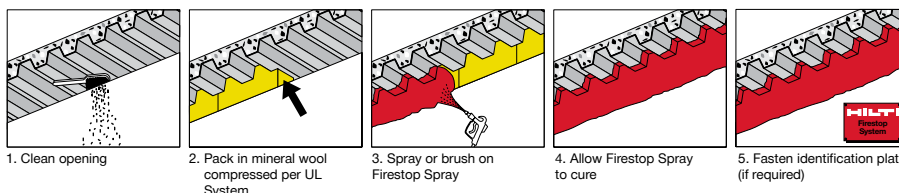
4. Curing time: Allow approx. 24 hours for typical application thickness (@ 73°F / 23°C) 50% humidity for 1/8" depth for the Firestop Joint Spray to fully cure.
5. Identification: For maintenance reasons all Firestop Joint Spray applications can be permanently marked with an identification plate and fastened in a visible position next to the seal.

Not for use

- In areas immersed in water
- On hot surfaces (above 176°F)

Storage

- Store only in the original packaging at temperatures 39°F to 77°F (4°C to 25°C)
- Observe expiration date on package



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ROXUL SAFE® 55

Metal Building Insulation

Product Description & Application

ROXUL SAFE® 55 is a mineral wool insulation board approved for use in metal building assemblies where a two hour fire resistance rating is required from one side or both sides of the wall.

	Performance	Test Standard
Compliance	Mineral Fiber Block and Board Thermal Insulation - Type IVB Compliant	ASTM C612
Reaction to Fire	Flame spread index = 0 ; Smoke developed index = 0 Flame spread index = 0 ; Smoke developed index = 0 Determination of Non Combustibility of Building Materials - Non Combustible Test for Non-Combustibility - Non Combustible ULC 2 hr rated from interior side - W606 ULC 2 hr rated from both sides - W611 UL 2 hr rated from interior side - U655 UL 2 hr rated from both sides - U659 Consult UL and ULC Directories for fire rated designs	ASTM E84 (UL 723) CAN/ULC S102 CAN/ULC S114 ASTM E136
Density	Nominal Density, Minimum - 4.5 lbs/ft ³ (72 kgs/m ³)	ASTM C303
Thermal Resistance	R-Value / inch @ 75°F 4.2 hr.ft ² .F/Btu RSI value / 25.4mm @ 24°C 0.74 m ² K/W	ASTM C518 (C177)
Dimensional Stability	Linear Shrinkage - <1% @ 1200°F	ASTM C356
Corrosion Resistance	Stress Corrosion Cracking Tendency of Austenitic Stainless Steel - Passed Corrosion of Steel - Passed	ASTM C795 ASTM C665
Reaction to Moisture	Moisture Sorption - 0.04% Determination of Fungi Resistance - Passed	ASTM C1104 ASTM C1338
Thickness Dimensions	Product is available in 4" thickness (101.6mm) 24"x48" (610mm x 1219mm), 31.5"x48" (800mm x 1219mm), 32"x48" (813mm x 1219mm)	



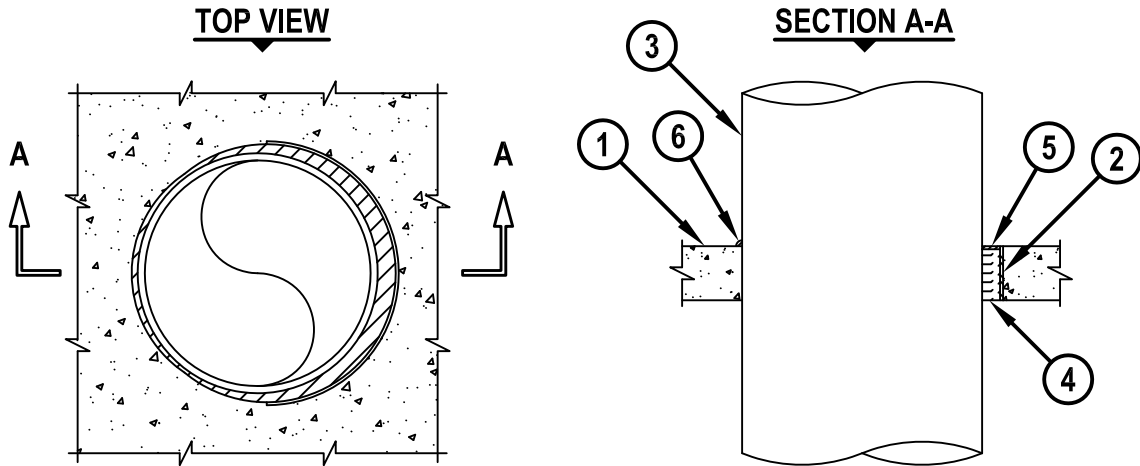
Issued 04-01-16
 Supersedes 07-05-13

NOTE: *Mast Format 1995 Edition **Master Format 2004 Edition. As ROXUL Inc has no control over installation design and workmanship, accessory materials or application conditions, ROXUL Inc. does not warranty the performance or results of any installation containing ROXUL Inc's products. ROXUL Inc's overall liability and the remedies available are limited by the general terms and conditions of sale. This warranty is in lieu of all other warranties and conditions expressed or implied, including the warranties of merchantability and fitness for a particular purpose.

METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.
T-RATING = 0-HR.

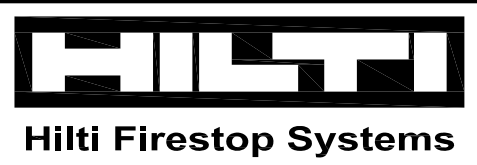
L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT
L-RATING AT 400° F = 4 CFM / SQ FT



CAJ1226p.041316

1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL] ANY OF THE FOLLOWING STEEL SLEEVES MAY BE USED :
 - A. MAXIMUM 32" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR HEAVIER) MAY EXTEND MAXIMUM 3" ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL.
 - B. MAXIMUM 6" (MIN. 26 GA.) OR 12" (MIN. 24 GA.) DIAMETER GALVANIZED STEEL SLEEVE WITH SQUARE FLANGE SPOT WELDED TO BOTTOM OR MID-HEIGHT OF SLEEVE AND SIZED MINIMUM 2" LARGER THAN SLEEVE DIAMETER. SLEEVE MAY EXTEND MAXIMUM 1" ABOVE TOP SURFACE OF FLOOR, AND MAXIMUM 4" BELOW BOTTOM SURFACE OF FLOOR.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 30" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 30" NOMINAL DIAMETER CAST IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
 - E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED TO ACCOMMODATE FIRESTOP SEALANT.
5. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF PIPE SLEEVE OR FLOOR ASSEMBLY.
6. MINIMUM 1/4" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 32".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-7/8".
 3. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.
 4. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT OF CONTACT.



HILTI, Inc.
Plano, Texas USA (800) 879-8000

Sheet	1 of 1
Scale	1/16" = 1"
Date	Apr. 13, 2016

Drawing No.
**CAJ
1226p**

UL SYSTEM NO. C-AJ-2109

PLASTIC PIPE THROUGH FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR. OR 3-HR.

T-RATING = 0-HR., 2-HR., OR 3-HR.

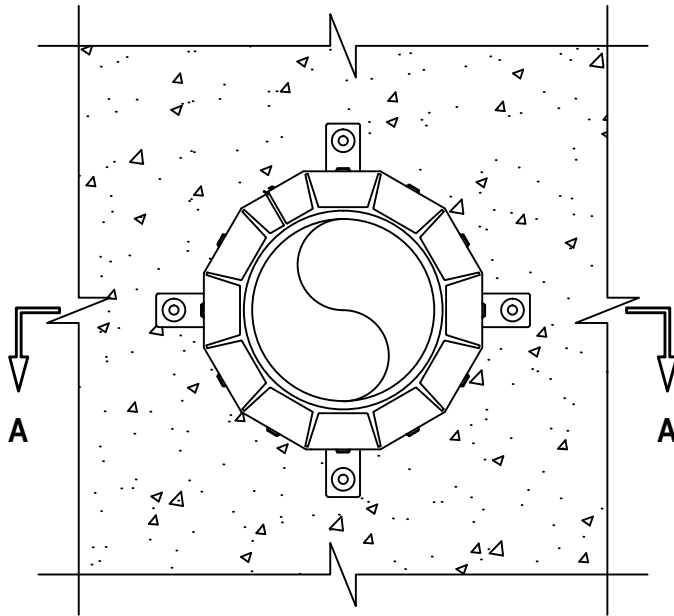
L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT (SEE NOTE NO. 9 BELOW)

L-RATING AT 400°F = LESS THAN 1 CFM / SQ FT (SEE NOTE NO. 9 BELOW)

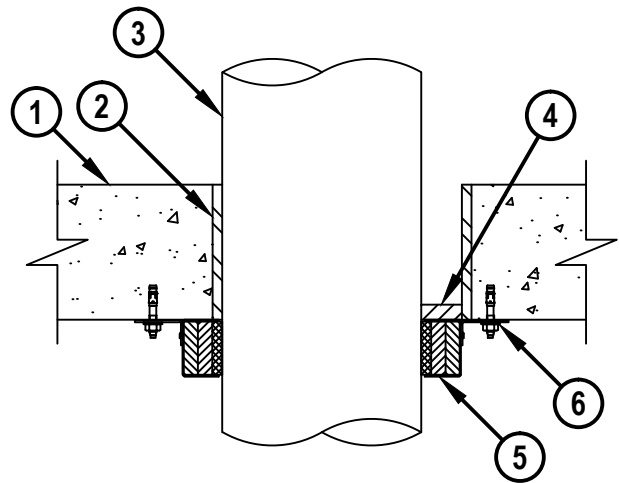
W-RATING = CLASS I (SEE NOTES NO. 7 AND 8 BELOW)

CAJ2109v.062718

BOTTOM VIEW



SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. OR 3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL] MAXIMUM 12" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR HEAVIER) MAY EXTEND MAXIMUM 3" ABOVE FLOOR.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING (ALSO SEE NOTE NO. 5 BELOW) :
 - A. MAXIMUM 10" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
 - B. MAXIMUM 10" NOMINAL DIAMETER CPVC PLASTIC PIPE (CLOSED PIPING SYSTEM ONLY).
 - C. MAXIMUM 6" NOMINAL DIAMETER ABS PLASTIC PIPE (CELLULAR OR SOLID CORE).
 - D. MAXIMUM 6" NOMINAL DIAMETER FRPP PLASTIC PIPE.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT, OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT INSTALLED FLUSH WITH TOP OR BOTTOM SURFACE OF FLOOR.

HILTI
Hilti Firestop Systems

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Plano, Texas USA (800) 879-8000

Sheet	1 of 2
Scale	5/32" = 1"
Date	June 27, 2018

Drawing No.

CAJ
2109v

Saving Lives through Innovation and Education

UL SYSTEM NO. C-AJ-2109

PLASTIC PIPE THROUGH FLOOR/WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR. OR 3-HR.

T-RATING = 0-HR., 2-HR., OR 3-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT (SEE NOTE NO. 9 BELOW)

L-RATING AT 400°F = LESS THAN 1 CFM / SQ FT (SEE NOTE NO. 9 BELOW)

W-RATING = CLASS I (SEE NOTES NO. 7 AND 8 BELOW)

CAJ2109v.062718

- 5. HILTI CP 643N OR CP 644 FIRESTOP COLLAR WITH FASTENING HOOKS (SEE TABLE BELOW).
- 6. EACH FASTENING HOOK SECURED TO BOTTOM OF FLOOR WITH 1/4" x 1-1/4" LONG STEEL EXPANSION BOLTS, MIN. 0.145" x 1-1/4" POWDER ACTUATED FASTENERS WITH 1-7/16" DIAMETER STEEL WASHER, 1/4" x 1-1/4" HILTI KWIK-CON II+ CONCRETE SCREW ANCHOR, 1/4" x 1-3/4" HILTI KWIK-BOLT 3 STEEL EXPANSION ANCHOR, OR HILTI X-DNI 27 P8 S15 POWDER ACTUATED FASTENER WITH INTEGRATED WASHER.

NOMINAL PIPE DIAMETER	PRODUCT DESCRIPTION	F-RATING
1-1/2"	CP 643 50/1.5" N	3
2"	CP 643 63/2" N	3
3"	CP 643 90/3" N	3
4"	CP 643 110/4" N	3
6"	CP 643 160/6" N	3
8"	CP 644 200/8"	2
10"	CP 644 250/10"	2

- NOTES :
1. HILTI FIRESTOP COLLARS, HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT OR HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT ARE REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.
 2. MAXIMUM DIAMETER OF OPENING = 12".
 3. ANNULAR SPACE ON PIPES NOMINAL 6" AND SMALLER = MINIMUM 0", MAXIMUM 1/2".
 4. ANNULAR SPACE ON PIPES LARGER THAN NOMINAL 6" = MINIMUM 0", MAXIMUM 1-1/4".
 5. CLOSED OR VENTED PIPING SYSTEM (PVC, ABS, & FRPP = SCHEDULE 40, CPVC = SDR 13.5).
 6. HILTI FIRESTOP SEALANT IS OPTIONAL ON PIPES HAVING A MAXIMUM DIAMETER OF NOMINAL 6" INSTALLED IN UNSLEEVED OPENINGS.
 7. W-RATING DOES NOT APPLY IN SLEEVED OPENINGS.
 8. W-RATING APPLIES ONLY WHEN ANNULAR SPACE IS MINIMUM 0", MAXIMUM 1/2", AND HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT IS USED.
 9. L-RATING APPLIES ONLY WHEN HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT IS USED.
 10. WHEN HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT IS USED, A MINIMUM 1/2" THICKNESS OF MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED IS TO BE INSTALLED WITHIN THE ANNULAR SPACE AND RECESSED FROM THE TOP SURFACE OF CONCRETE FLOOR TO ACCOMMODATE SEALANT.



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Plano, Texas USA (800) 879-8000

Sheet	2 of 2
Scale	-
Date	June 27, 2018

Drawing No.

**CAJ
2109v**

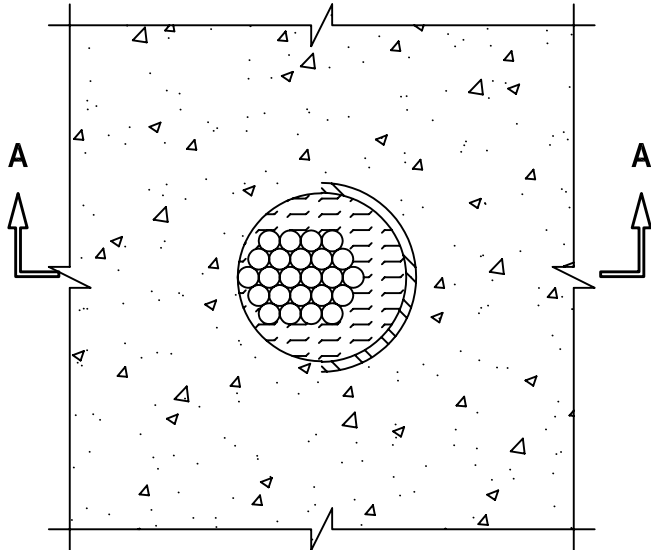
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CABLE BUNDLE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

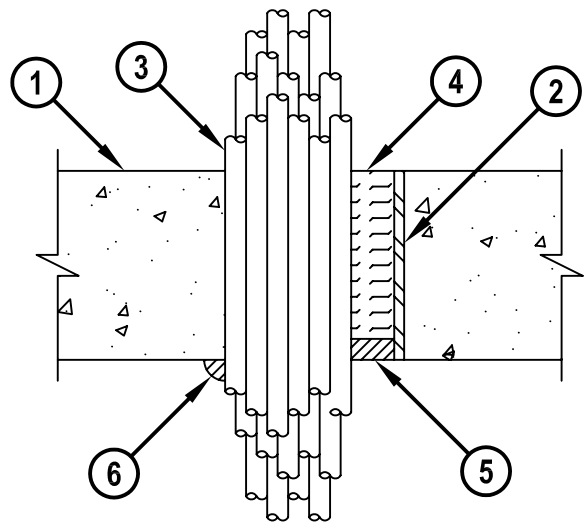
F-RATING = 3-HR.
T-RATING = 0-HR.

CAJ3210a.111802

TOP VIEW



SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MIN. 4-1/2" THICK).
 - B. ANY UL/ULC CLASSIFIED CONCRETE BLOCK WALL.
2. OPTIONAL : MAXIMUM 4" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 10 OR HEAVIER).
3. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 750 KCMIL POWER CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (24 FIBER).
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE.
 - F. MAXIMUM 1" DIAMETER METAL-CLAD TEK CABLE WITH PVC JACKET.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
5. MINIMUM 1/2" DEPTH HILTI CP 618 FIRESTOP PUTTY STICK FLUSH WITH BOTTOM OF FLOOR.
6. MINIMUM 1/2" BEAD HILTI CP 618 FIRESTOP PUTTY STICK.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
 3. CABLES TO FILL MAXIMUM 60% OF CROSS-SECTIONAL AREA OF OPENING.
 4. MINIMUM 1/2" DEPTH HILTI CP 618 FLEXIBLE FIRESTOP PUTTY STICK IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



HILTI, Inc.
Tulsa, Oklahoma USA (918) 252-6000

Sheet	1 of 1
Scale	7/32" = 1"
Date	Nov. 18, 2002

Drawing No.

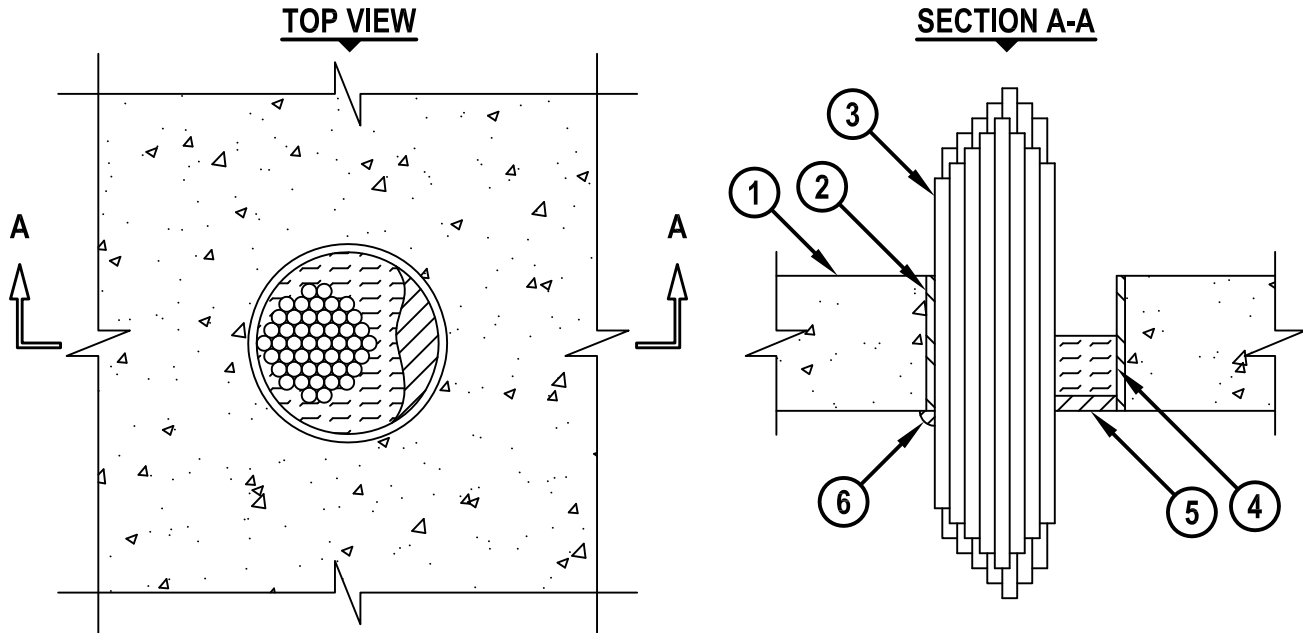
**CAJ
3210a**

CABLE BUNDLE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

T-RATING = 0-HR., 1/2-HR., 3/4-HR. OR 1-HR.

CAJ3239c.010615



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. [OPTIONAL] MAXIMUM 6" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 10 OR HEAVIER).
3. CABLE BUNDLE TO CONSIST OF ANY COMBINATION OF THE FOLLOWING :
 - A. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - B. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - C. TYPE RG/6 COAXIAL CABLE WITH FLUORINATED ETHYLENE JACKET.
 - D. MAXIMUM 3/C NO. 12 AWG METAL CLAD CABLE.
 - E. MAXIMUM 3/C (+GROUND) 2/0 AWG ALUMINUM CONDUCTOR SER CABLE.
 - F. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE WITH PVC JACKET.
 - G. MAXIMUM 1/C 750 KCMIL POWER CABLE WITH PVC JACKET.
 - H. MAXIMUM 1" DIAMETER METAL CLAD TEK CABLE WITH PVC JACKET.
4. MINIMUM 2" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM OF FLOOR.
6. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 6".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/2".
 3. CABLES TO FILL MAXIMUM 33% OF CROSS-SECTIONAL AREA OF OPENING.
 4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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Sheet	1 of 1
Scale	5/32" = 1"
Date	Jan. 06, 2015

Drawing No.

**CAJ
3239c**

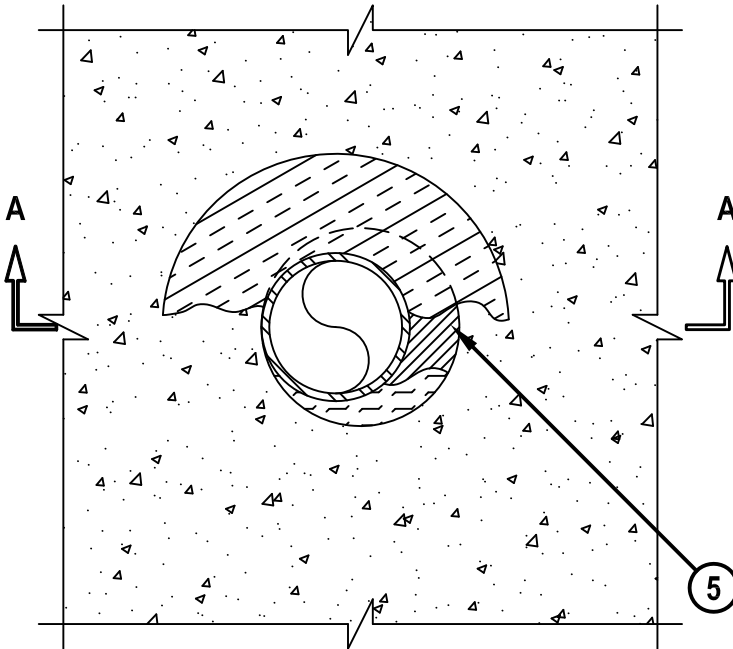
INSULATED METAL PIPE THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 3-HR.

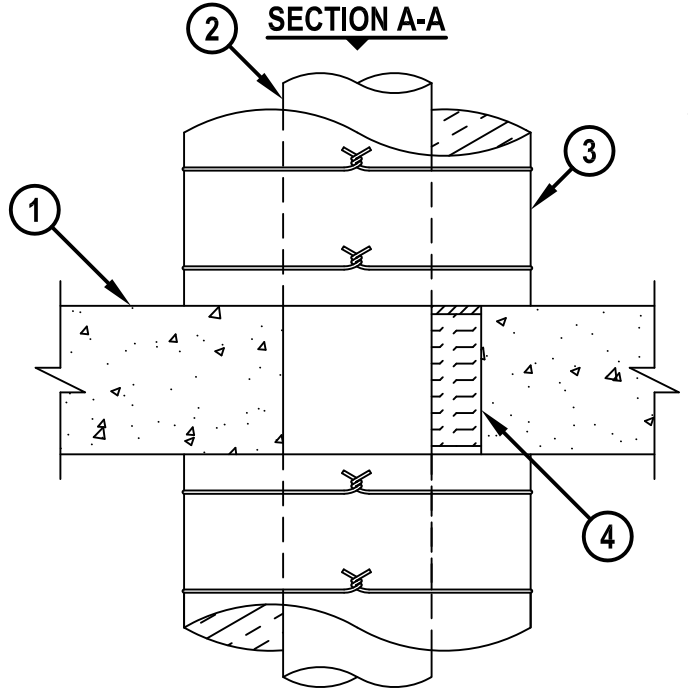
T-RATING = 1-HR. OR 2-HR.

CAJ5185d.010615

TOP VIEW



SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 24" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 24" NOMINAL DIAMETER CAST IRON PIPE.
 - C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE.
3. NOMINAL 3" THICKNESS MINERAL FIBER PIPE INSULATION BUTTED UP TO FIRESTOP SYSTEM ON BOTH SIDES OF ASSEMBLY (SEE NOTE NO. 3 AND 4 BELOW).
4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
5. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.

- NOTES :**
1. MAXIMUM DIAMETER OF OPENING = 25-7/8".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-7/8".
 3. WHEN PIPE INSULATION EXTENDS THE ENTIRE LENGTH OF THE PIPE, ON BOTH SIDES OF THE FLOOR, THE T-RATING IS 2-HR. WHEN THE PIPE INSULATION EXTENDS ONLY 12" ABOVE AND BELOW THE FLOOR, THE T-RATING IS 1-HR.
 4. MINERAL FIBER PIPE INSULATION TO BE MANUFACTURED BY OWENS CORNING. INSULATION SECURED WITH NOMINAL 16 AWG STEEL WIRE, SPACED MAXIMUM 12" ON CENTER WHEN INSULATION EXTENDS THE ENTIRE LENGTH OF PIPE AND AT 3" AND 9" ABOVE AND BELOW FLOOR WHEN INSULATION EXTENDS ONLY 12" ABOVE AND BELOW FLOOR.
 5. MINIMUM 1/4" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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Sheet	1 of 1
Scale	11/64" = 1"
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Drawing No.

**CAJ
5185d**

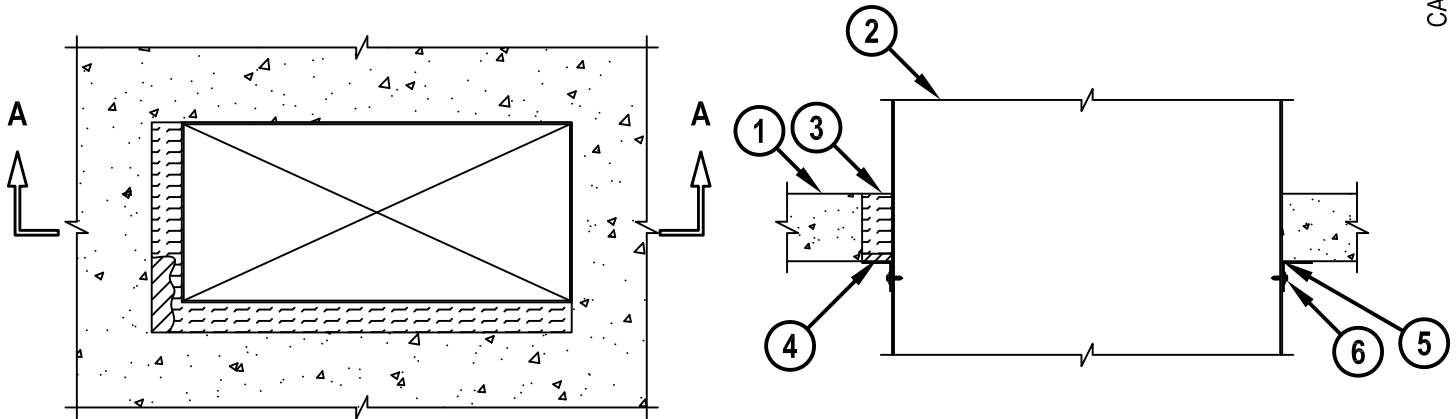
SHEET METAL DUCT THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

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

CAJ7104b.010615

TOP VIEW

SECTION A-A



1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. MAXIMUM 24" X 12" RECTANGULAR SHEET METAL DUCT (MIN 24 GA.).
(NOTE: NOT FOR USE IN DUCT SYSTEMS CONTAINING A DAMPER).
3. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF FLOOR ASSEMBLY.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.
6. SEE NOTE NO. 4 BELOW.

NOTES : 1. MAXIMUM SIZE OF OPENING = 26" x 14".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2" (POINT OF CONTACT ON MAXIMUM TWO ADJACENT SIDES).
 3. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT AND STEEL ANGLES ARE REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.
 4. AFTER SEALING SPACE BETWEEN DUCT AND CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY WITH HILTI FS-ONE MAX OR FS-ONE, FASTEN STEEL ANGLE (L2 x 2 x MIN. 18 GA.) TO DUCT WITH NO. 8 (OR LARGER) STEEL SHEET METAL SCREWS ON ALL FOUR SIDES OF DUCT (SPACED MAXIMUM 6" C/C). ANGLE DOES NOT HAVE TO BE FASTENED TO CONCRETE FLOOR/WALL OR BLOCK WALL ASSEMBLY.



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Sheet	1 of 1
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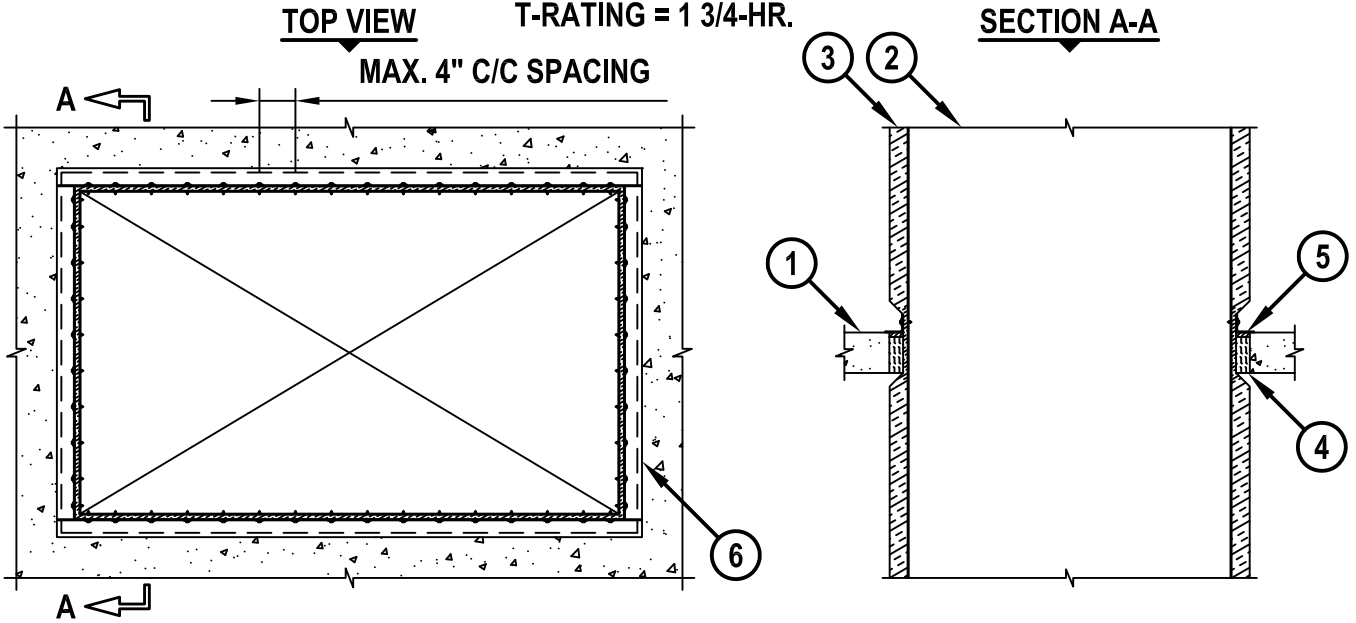
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INSULATED DUCT THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.
T-RATING = 1 3/4-HR.

CAJ7145b.010615



1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. MAXIMUM 60" x 36" RECTANGULAR SHEET METAL DUCT (CONFORMING WITH SMACNA REQUIREMENTS).
3. NOMINAL 2" THICK GLASS-FIBER DUCT INSULATION (MIN. 3/4" PCF DENSITY) WITH FOIL-SCRIM-KRAFT FACING.
4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED TO ACCOMMODATE SEALANT (SEE NOTE NO. 2 BELOW).
5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.
6. STEEL RETAINING ANGLE (SEE NOTE NO. 6 BELOW).

NOTES :

1. MAXIMUM AREA OF OPENING = 17.8 SQ. FT., WITH A MAXIMUM DIMENSION OF 64".
2. DUCT INSULATION TO BE COMPRESSED THROUGH THE ASSEMBLY SUCH THAT THE MAXIMUM OVERALL THICKNESS IS 1/2".
3. THE ANNULAR SPACE BETWEEN STEEL DUCT AND EDGES OF OPENING SHALL BE MINIMUM 2" TO MAXIMUM 6" WHEN MAXIMUM DUCT DIMENSION IS 28". OTHERWISE, MAXIMUM ANNULAR SPACE IS 2-1/2".
4. NOMINAL ANNULAR SPACE BETWEEN INSULATED DUCT AND PERIPHERY OF OPENING TO BE MINIMUM 0" TO MAXIMUM 1/2" PRIOR TO INSTALLATION OF MINERAL WOOL. WHEN MAXIMUM DUCT DIMENSION IS 28", MAXIMUM ANNULAR SPACE BETWEEN INSULATED DUCT AND PERIPHERY IS 4" PRIOR TO INSTALLATION OF MINERAL WOOL.
5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT AND STEEL ANGLES ARE REQUIRED ON BOTH SIDES OF A WALL.
6. AFTER SEALING SPACE BETWEEN INSULATED DUCT AND CONCRETE FLOOR/WALL WITH HILTI FS-ONE MAX OR FS-ONE, FASTEN STEEL ANGLE (L2 x 2 x MIN. 16 GA.) TO DUCT WITH NO. 10 (OR LARGER) STEEL SHEET METAL SCREWS SPACED 1" FROM EACH END AND MAXIMUM 4" C/C.



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Sheet	1 of 1
Scale	1/16" = 1"
Date	Jan. 06, 2015

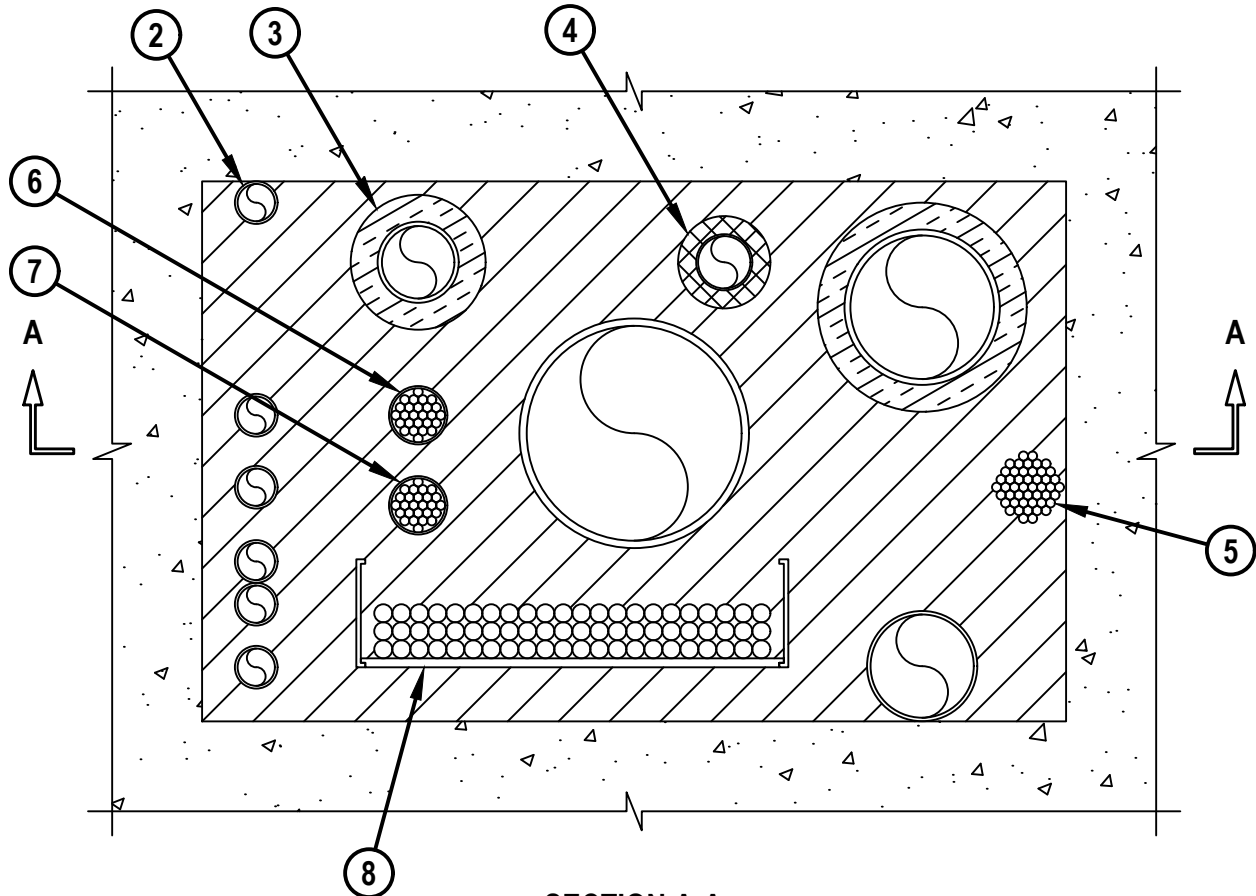
Drawing No.
**CAJ
7145b**

MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

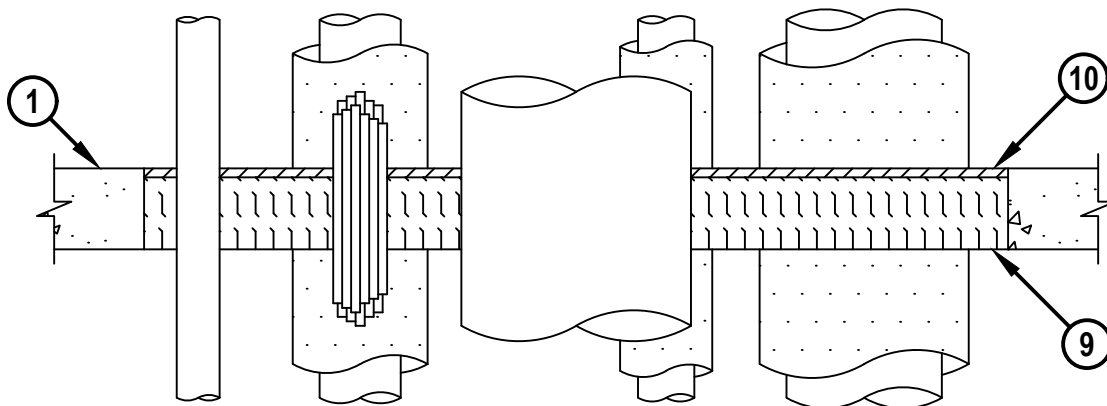
F-RATING = 2-HR.
T-RATING = 0-HR.

CAJ8143d.010317

TOP VIEW



SECTION A-A



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Sheet	1 of 3
Scale	3/32" = 1"
Date	Jan. 03, 2017

Drawing No.
**CAJ
8143d**

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MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.
T-RATING = 0-HR.

CAJ8143d.010317

1. CONCRETE FLOOR OR WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 5" THICK).
 - C. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. ONE OR MORE OF THE FOLLOWING PENETRATING ITEMS (ITEMS 2-7) AND IN ANY COMBINATION MAY BE INSTALLED WITHIN THE OPENING :
 - A. MAXIMUM 24" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).
 - B. MAXIMUM 24" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
 - E. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. [OPTIONAL] ANY OR ALL PIPES (8" OR SMALLER) MAY BE INSULATED WITH MAXIMUM 1-1/2" THICK GLASS-FIBER PIPE INSULATION.
4. [OPTIONAL] ANY OR ALL PIPES (2" OR SMALLER) MAY BE INSULATED WITH MAXIMUM 2" THICK GLASS-FIBER PIPE INSULATION OR MAXIMUM 1" THICK AB/PVC PIPE INSULATION.
5. MAXIMUM 4" NOMINAL DIAMETER CABLE BUNDLE OR INDIVIDUAL CABLE TO CONSIST OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 500 KCMIL SINGLE COPPER OR ALUMINUM CONDUCTOR POWER CABLE WITH PVC JACKET.
 - B. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER OPTIC CABLE WITH PVC JACKET.
 - E. MAXIMUM 3/C NO. 12 AWG STEEL CLAD CABLE.
6. MAXIMUM 3/C NO. 2/0 AWG COPPER CONDUCTOR PVC JACKETED ALUMINUM OR STEEL CLAD, TECK 90 CABLE.
7. MAXIMUM 4/C NO. 750 KCMIL ALUMINUM OR COPPER CONDUCTOR WITH ALUMINUM OR STEEL CLAD, WITH OR WITHOUT PVC JACKET.
8. MAXIMUM 24" x 6" ALUMINUM OR STEEL OPEN LADDER CABLE TRAY (MAX. QTY. = 1). ANY COMBINATION OF THE TYPES AND SIZE OF CABLES DESCRIBED IN ITEM NO. 5 ABOVE MAY BE USED. CABLES TO FILL MAXIMUM 40% CROSS-SECTIONAL AREA OF TRAY AND HAVE A MAXIMUM 3" CABLE LOADING DEPTH.
9. MINIMUM 4" THICKNESS MINERAL WOOL (MINIMUM 4 PCF DENSITY) TIGHTLY PACKED.
10. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.



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Sheet	2 of 3
Scale	-
Date	Jan. 03, 2017

Drawing No.
**CAJ
8143d**

MULTIPLE PENETRATIONS THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

F-RATING = 2-HR.

T-RATING = 0-HR.

CAJ8143d.010317

ANNULAR SPACE	MINIMUM	MAXIMUM
BETWEEN INDIVIDUAL CABLES AND CABLE BUNDLES	1/2"	12"
BETWEEN INDIVIDUAL/BUNDLES CABLES AND OTHER PENETRANTS	1/2"	12"
-EXCEPTION : BETWEEN INDIVIDUAL/BUNDLED CABLES AND COPPER PIPES GREATER THAN 3", STEEL PIPE, IRON PIPE, AND CONDUITS GREATER THAN 4"	2"	12"
BETWEEN INSULATED PIPES	2"	12"
BETWEEN METALLIC PIPES	2"	12"
- EXCEPTION 1) BETWEEN 3" AND SMALLER COPPER PIPES	1/2"	12"
-EXCEPTION 2) BETWEEN 2" AND SMALLER STEEL PIPES AND CONDUITS	0"	12"
-EXCEPTION 3) BETWEEN 4" AND SMALLER STEEL PIPES AND CONDUITS	1/2"	12"
BETWEEN INSULATED PIPES OR CABLE TRAY AND PERIPHERY OF OPENING	1/2"	12"
BETWEEN ALL OTHER PENETRANTS AND PERIPHERY OF OPENING	0"	12"
BETWEEN CABLE TRAY AND ALL OTHER PENETRANTS	3"	12"

NOTES : 1. MAXIMUM AREA OF OPENING = 1440 SQ. IN. WITH A MAXIMUM DIMENSION OF 48".
 2. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT IS REQUIRED ON BOTH SIDES OF A WALL ASSEMBLY.



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Sheet	3 of 3
Scale	-
Date	Jan. 03, 2017

Drawing No.

**CAJ
8143d**

TOP OF WALL JOINT : CONCRETE WALL OR BLOCK WALL ASSEMBLY

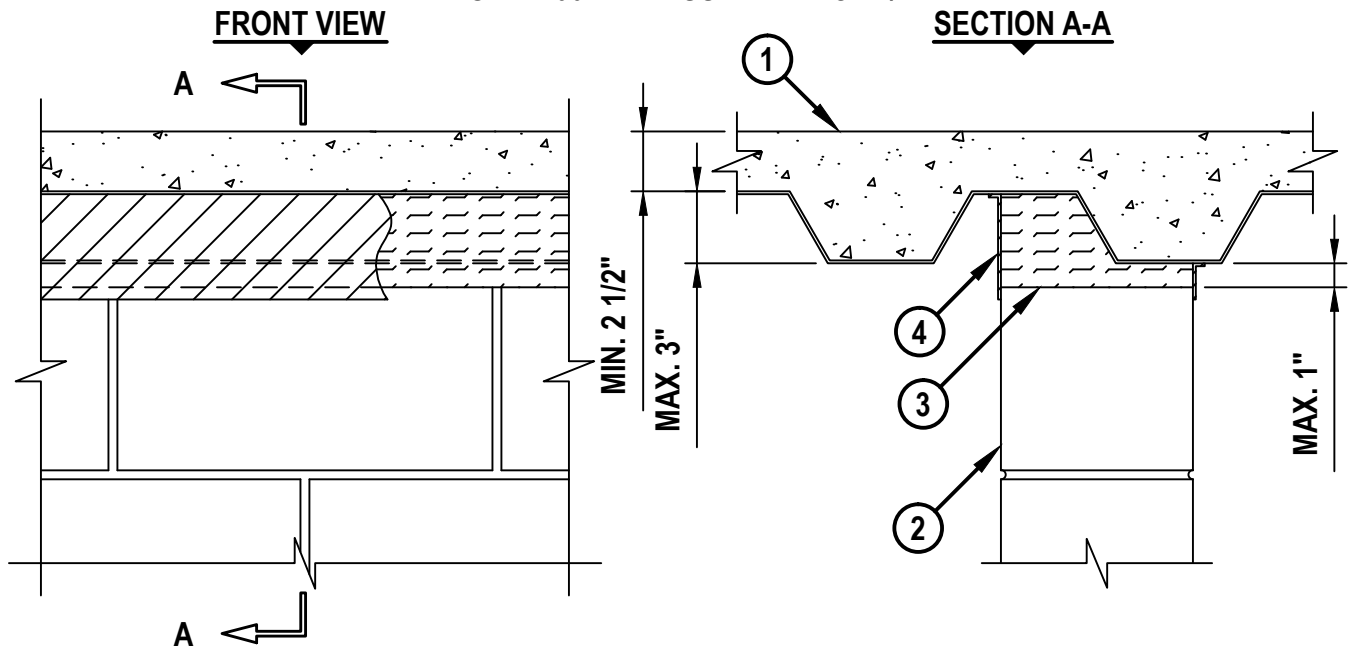
ASSEMBLY RATING = 2-HR.

CLASS II AND CLASS III MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION

L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN FT

L-RATING AT 400°F = LESS THAN 1 CFM/LIN FT

HWD0181f.082611



1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK) OVER METAL DECKING (2-HR. FIRE-RATING).
2. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
3. MINERAL WOOL (MIN. 4 PCF DENSITY) COMPRESSED 33% AND INSERTED INTO JOINT, FLUSH WITH OUTSIDE WALL SURFACES.
4. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY OR HILTI CP 672 SPEED SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP A MINIMUM 1/2" ONTO CONCRETE WALL AND METAL DECKING ON BOTH SIDES OF WALL ASSEMBLY.

NOTES : 1. STEEL FLOOR UNITS MAY BE SPRAYED WITH A MIN. 5/16" THICKNESS TO MAX. 1-3/4" THICKNESS OF UL CLASSIFIED MONOKOTE TYPE MK-6/HY (MANUFACTURED BY W.R. GRACE) OR TYPE 300 (MANUFACTURED BY ISOLATEK, INT.) FIREPROOFING PRIOR TO INSTALLATION OF MINERAL WOOL AND HILTI FIRESTOP SPRAY.

2. WHEN THE STEEL DECK IS COATED WITH FIREPROOFING, HILTI FIRESTOP SPRAY SHALL OVERLAP THE WALL A MINIMUM OF 1/2" AND OVERLAP THE FIREPROOFING A MINIMUM 2" ON BOTH SIDES OF THE WALL.



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Sheet	1 of 1
Scale	1/8" = 1"
Date	Aug. 26, 2011

Drawing No.

**HWD
0181f**

UL/cUL SYSTEM NO. HW-D-0264

TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY

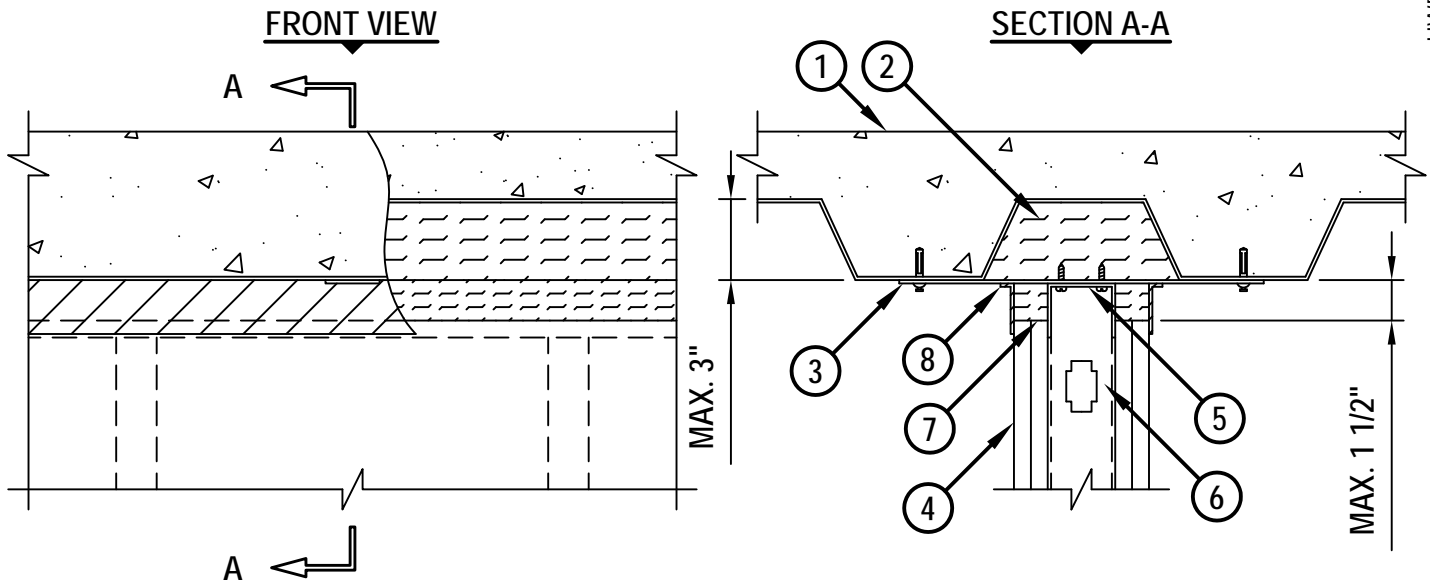
ASSEMBLY RATING = 1-HR. OR 2-HR.

CLASS II MOVEMENT CAPABILITIES - 50% COMPRESSION OR EXTENSION

L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT

L-RATING AT 400°F = LESS THAN 1 CFM / LIN FT

HWDD0264g.102313



1. FLOOR OR ROOF ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING) :

- A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MIN. 2-1/2" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED D700 OR D900 SERIES).
- B. INSULATING CONCRETE (MIN. 2-1/4" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED P900 SERIES).
- C. [NOT SHOWN] FLUTED STEEL ROOF DECK WITH SPRAY-APPLIED FIREPROOFING (UL/cUL CLASSIFIED P700 SERIES).



Hilti Firestop Systems

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Sheet	1 of 2
Scale	9/64" = 1"
Date	Oct. 23, 2013

Drawing No.

**HWD
0264g**

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UL/cUL SYSTEM NO. HW-D-0264

TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY

ASSEMBLY RATING = 1-HR. OR 2-HR.

CLASS II MOVEMENT CAPABILITIES - 50% COMPRESSION OR EXTENSION

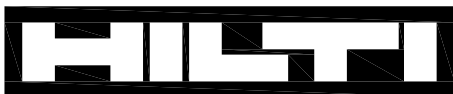
L-RATING AT AMBIENT = LESS THAN 1 CFM / LIN FT

L-RATING AT 400°F = LESS THAN 1 CFM / LIN FT

HWDD0264g.102313

2. HILTI CP 777 SPEED PLUGS FRICTION FITTED TO COMPLETELY FILL FLUTES. ADJACENT LENGTHS OF SPEED PLUGS TO BE TIGHTLY BUTTED WITH SEAMS SPACED MINIMUM 24" APART ALONG LENGTH OF THE PLUGS (SEE NOTE NO. 5 BELOW).
3. MINIMUM 2" WIDE, 16 GA., STEEL STRAPS CUT TO A LENGTH TO SPAN THE FLUTE AND OVERLAP THE ADJACENT VALLEYS BY 1-1/2". STEEL STRAPS SPACED MAXIMUM 24" ON CENTER AND FASTENED TO FLOOR ASSEMBLY WITH APPROPRIATE HILTI ANCHORS (1/4" DIAMETER x 1-1/2" LONG) OR 1" LONG HILTI X-U 27 P8S15 POWDER ACTUATED FASTENERS WITH 9/16" DIAMETER STEEL WASHERS.
4. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400, V400, OR W400 SERIES) (1-HR. OR 2-HR. FIRE-RATING).
5. CEILING RUNNER (MIN. 25 GA. WITH 2" FLANGES) INSTALLED PARALLEL TO DIRECTION OF STEEL FLOOR UNITS AND SECURED TO STEEL STRAPS WITH TWO NO. 8 SELF-DRILLING, SELF-TAPPING STEEL SCREWS PER STRAP.
6. STEEL STUDS (MIN. 2-1/2" WIDE), CUT 1/2" TO 3/4" LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT.
7. HILTI CP 767 SPEED STRIPS OR MINERAL WOOL SAFING (MIN. 4 PCF DENSITY) COMPRESSED 50% AND INSERTED INTO JOINT, FLUSH WITH BOTH SIDES OF WALL.
8. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP A MINIMUM 1/2" ONTO GYPSUM WALL, STEEL STRAPS, AND METAL DECK.

- NOTES :
1. MAXIMUM WIDTH OF JOINT = 1-1/2".
 2. STEEL FLOOR UNITS MAY BE SPRAYED WITH A MINIMUM 5/16" TO MAXIMUM 1-3/4" THICKNESS OF UL CLASSIFIED MONOKOTE TYPE MK-6/HY (MANUFACTURED BY W.R. GRACE) OR CAFCO TYPE 300 (MANUFACTURED BY ISOLATEK, INT.) FIREPROOFING, PRIOR TO INSTALLATION OF CEILING RUNNERS.
 3. WHEN THE STEEL DECK IS COATED WITH FIREPROOFING, HILTI FIRESTOP JOINT SPRAY SHALL OVERLAP THE WALL A MINIMUM 1/2" AND OVERLAP THE FIREPROOFING A MINIMUM 2" ON BOTH SIDES OF GYPSUM WALL ASSEMBLY.
 4. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO. 3, SLOTTED CEILING RUNNERS MAY BE USED. CONSULT THE UL FIRE RESISTANCE DIRECTORY FOR APPROVED MANUFACTURERS.
 5. AS AN ALTERNATE TO HILTI CP 777 SPEED PLUGS (ITEM 2), MINERAL WOOL SAFING (MIN. 4 PCF DENSITY) MAY BE CUT TO THE SHAPE OF THE FLUTED FLOOR TO COMPLETELY FILL THE FLUTES ABOVE STRAPS. ADJACENT LENGTHS OF SAFING TO BE TIGHTLY BUTTED WITH SEAMS SPACED 24" APART ALONG LENGTH OF FLUTES. ALTERNATELY, FLUTE MAY BE FILLED WITH FIREPROOFING ABOVE THE STRAPS.



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Sheet	2 of 2
Scale	-
Date	Oct. 23, 2013

Drawing No.

**HWD
0264g**

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TOP OF WALL JOINT : CONCRETE OR BLOCK WALL ASSEMBLY

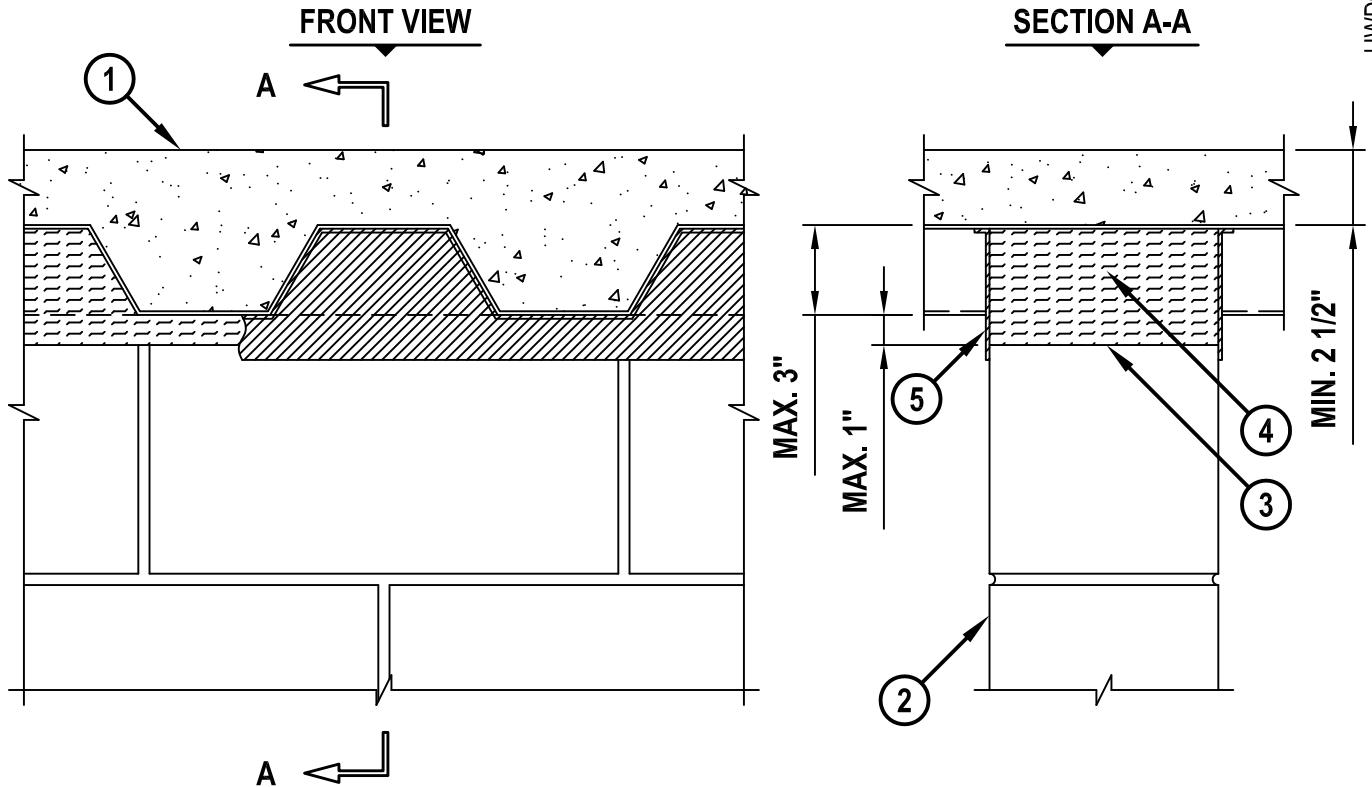
ASSEMBLY RATING = 4-HR.

CLASS II MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION

L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN FT

L-RATING AT 400°F = LESS THAN 1 CFM/LIN FT

HWD0294d.052510



1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK) OVER METAL DECKING (4-HR. FIRE-RATING).
2. CONCRETE WALL ASSEMBLY (4-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 7-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
3. MINERAL WOOL (MINIMUM 4 PCF DENSITY) COMPRESSED 50%, TO COMPLETELY FILL FLUTE, FLUSH WITH BOTH SIDES OF THE WALL.
4. MINERAL WOOL (MINIMUM 4 PCF DENSITY) COMPRESSED 50% AND INSERTED INTO JOINT/FLUTE, FLUSH WITH BOTH SIDES OF THE WALL. WIDTH OF MINERAL WOOL TO BE EQUAL TO THE TOTAL THICKNESS OF CONCRETE WALL ASSEMBLY.
5. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY OR HILTI CP 672 SPEED SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP MINIMUM 1/2" ONTO METAL DECK AND CONCRETE WALL.

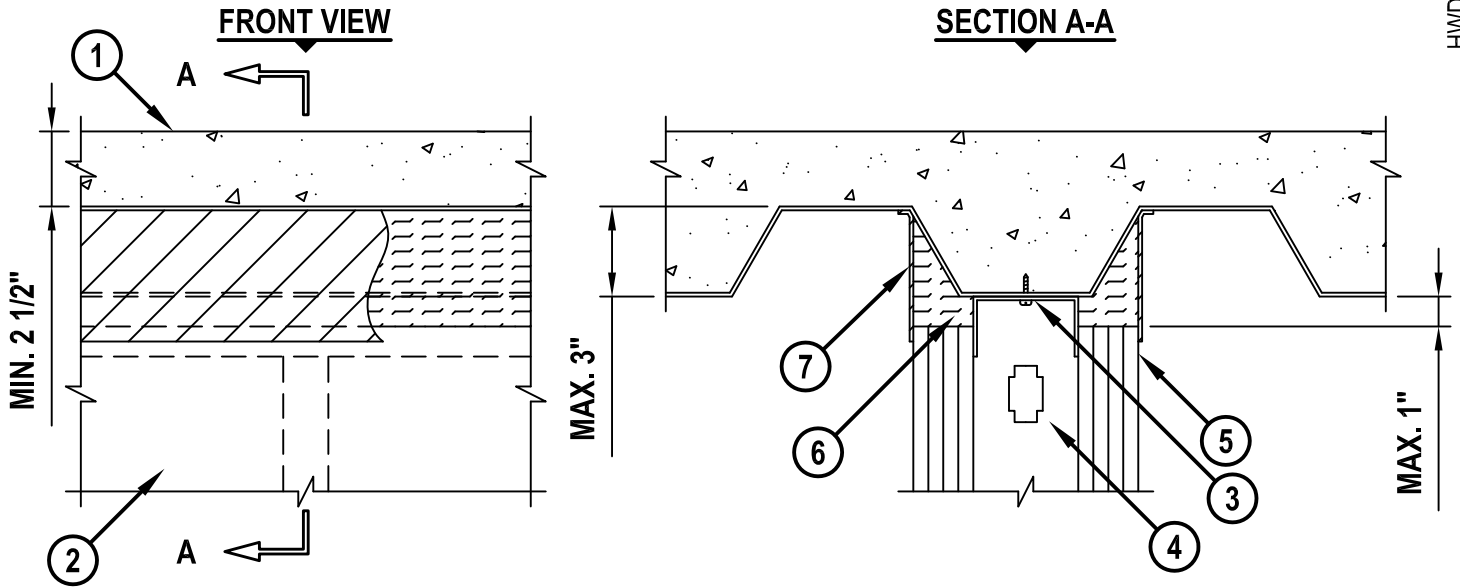
NOTE : MAXIMUM WIDTH OF JOINT = 1".

 Hilti Firestop Systems	HILTI, Inc. Tulsa, Oklahoma USA (800) 879-8000	Sheet 1 of 1	Drawing No. HWD 0294d
		Scale 5/32" = 1"	
			Date May 25, 2010
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TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY

ASSEMBLY RATING = 1, 2, 3, OR 4-HR. (DEPENDING ON RATING OF WALL AND FLOOR ASSEMBLY)
 CLASS II MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION
 L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN FT
 L-RATING AT 400°F = LESS THAN 1 CFM/LIN FT

HWD0295d.062910



1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 2-1/2" THICK) OVER METAL DECKING (1, 2, 3, 4-HR. FIRE-RATING).
2. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SERIES) (1, 2, 3, OR 4-HR. FIRE-RATING).
3. CEILING RUNNER (MINIMUM 25 GA., FLANGE HEIGHT OF CEILING RUNNER SHALL BE MINIMUM 1/4" GREATER THAN MAXIMUM EXTENDED JOINT WIDTH) FASTENED TO UNDERSIDE OF DECK WITH STEEL FASTENERS OR WELDS (SPACED MAX. 24" O.C.) (SEE NOTE NO. 2 BELOW).
4. STEEL STUDS (MINIMUM 3-1/2" WIDE), CUT 1/2" TO 3/4" LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT.
5. GYPSUM BOARD SHEETS INSTALLED TO A MINIMUM TOTAL THICKNESS OF 5/8", 1-1/4", 1-1/2", OR 2" ON EACH SIDE OF WALL FOR 1, 2, 3, OR 4-HR. WALLS, RESPECTIVELY.
6. MINERAL WOOL (MINIMUM 4 PCF DENSITY) COMPRESSED 50%, AND INSERTED INTO JOINT, FLUSH WITH BOTH SIDES OF THE WALL. WIDTH OF MINERAL WOOL TO BE EQUAL TO THE TOTAL THICKNESS OF GYPSUM WALLBOARD.
7. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY OR HILTI CP 672 SPEED SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP MINIMUM 1/2" ONTO METAL DECK AND GYPSUM WALL.

NOTES : 1. MAXIMUM WIDTH OF JOINT = 1".
 2. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO. 3, CEILING RUNNERS, MANUFACTURED BY BRADY CONSTRUCTION INNOVATIONS, INC., DBA SLIPTRACK SYSTEMS, THE STEEL NETWORK, INC., OR CEMCO, MAY BE USED. WHEN ALTERNATE CEILING TRACKS ARE USED, CONSULT THE UL FIRE RESISTANCE DIRECTORY FOR INSTALLATION INSTRUCTIONS.



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Sheet	1 of 1
Scale	5/32" = 1"
Date	June 29, 2010

Drawing No.
**HWD
 0295d**

UL/cUL SYSTEM NO. HW-D-0403

TOP OF WALL JOINT : CONCRETE OR BLOCK WALL ASSEMBLY

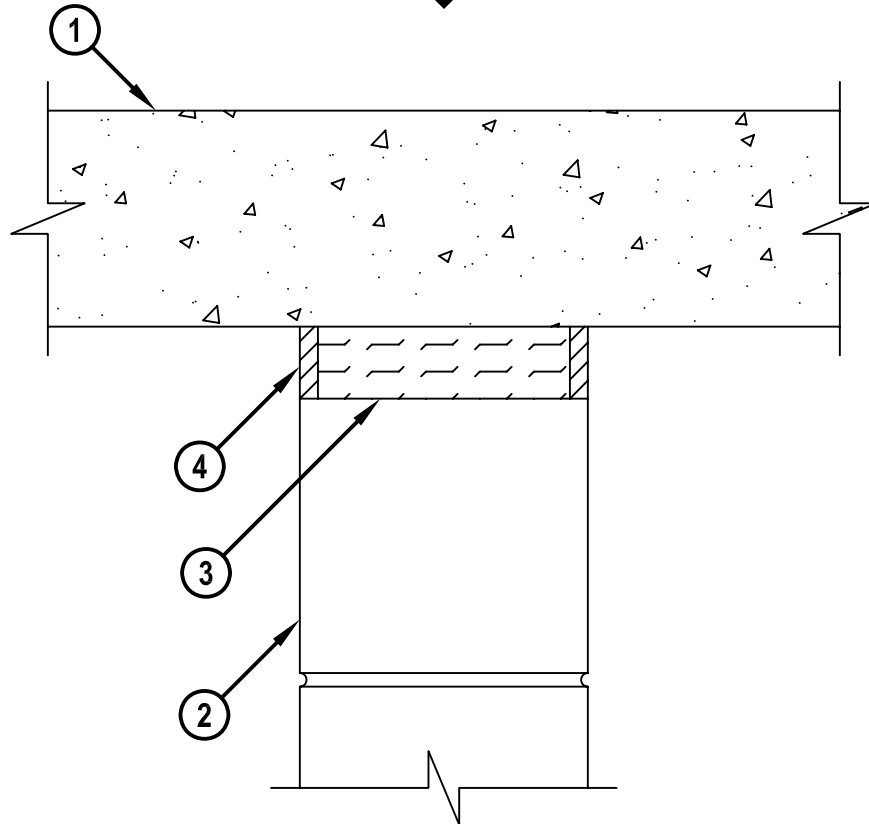
ASSEMBLY RATING = 3-HR.

CLASS II MOVEMENT CAPABILITIES - 6% COMPRESSION OR EXTENSION

L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN. FT.

L-RATING AT 400°F = LESS THAN 1 CFM/LIN. FT.

CROSS-SECTIONAL VIEW



1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR ASSEMBLY (MINIMUM 6" THICK) (3-HR. FIRE-RATING).
2. CONCRETE WALL ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL (MINIMUM 6" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
3. MINIMUM 5" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) COMPRESSED 50%.
4. MINIMUM 1/2" DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT, FLUSH WITH BOTH SIDES OF WALL.

NOTE : MAXIMUM WIDTH OF JOINT = 2".

HILTI[®]
FIRESTOP SYSTEMS

HILTI, Inc.
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Sheet	1 of 1
Scale	3/16" = 1"
Date	Nov. 03, 2005

Drawing No.

**HWD
0403a**

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HW-D-0403a.110305

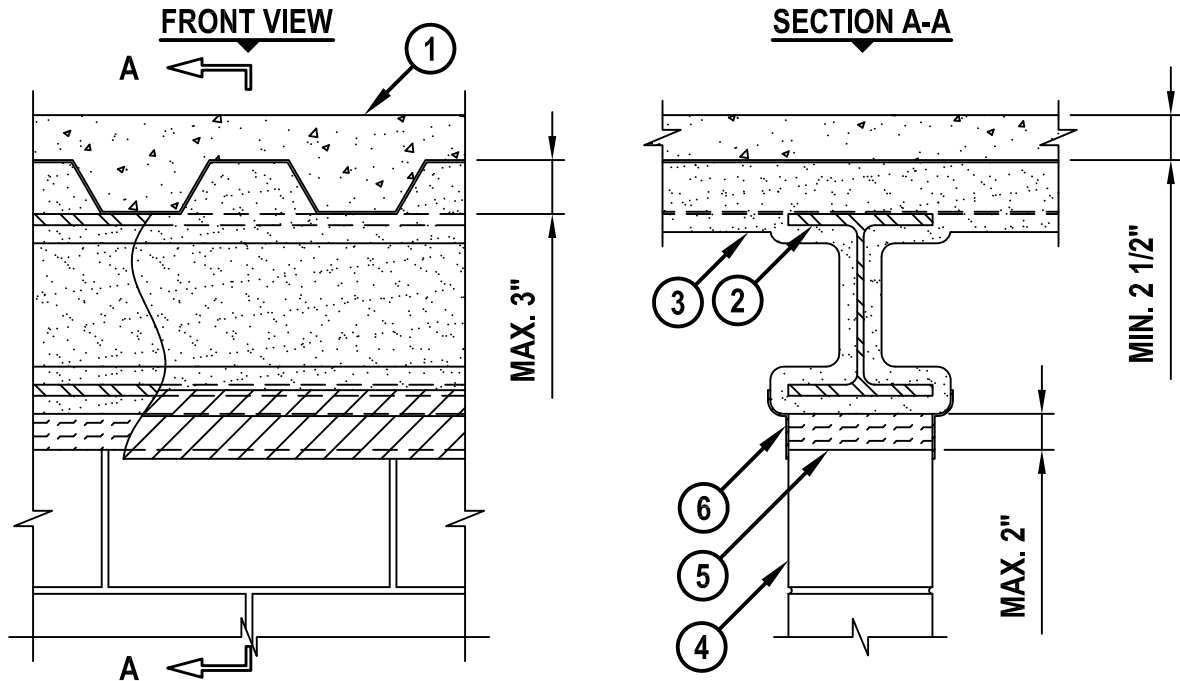
TOP OF WALL JOINT : CONCRETE WALL OR BLOCK WALL ASSEMBLY

ASSEMBLY RATING = 2-HR.

CLASS II MOVEMENT CAPABILITIES - 12.5% COMPRESSION OR EXTENSION

L-RATING AT AMBIENT = LESS THAN 1 CFM/LIN FT

L-RATING AT 400°F = LESS THAN 1 CFM/LIN FT



HWD0440d.052510

1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MIN. 2-1/2" THICK) OVER METAL DECKING (2-HR. FIRE-RATING).
2. STRUCTURAL STEEL BEAM, AS SPECIFIED IN THE INDIVIDUAL D-700 SERIES FLOOR/CEILING DESIGN, ORIENTED PARALLEL TO WALL ASSEMBLY.
3. UL CLASSIFIED MONOKOTE TYPE MK-6/HY (MANUFACTURED BY W.R. GRACE & CO.) OR TYPE 300 (MANUFACTURED BY ISOLATEK, INT.) FIREPROOFING TO COMPLETELY FILL FLUTES ABOVE STRUCTURAL STEEL BEAM AND APPLIED TO STEEL FLOOR UNITS AND STRUCTURAL STEEL SUPPORT AS SPECIFIED IN THE INDIVIDUAL D700 DESIGN CODE (SEE NOTE NO. 2 BELOW).
4. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
5. MINIMUM 8" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) COMPRESSED 50%, FLUSH WITH WALL ASSEMBLY.
6. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY OR HILTI CP 672 SPEED SPRAY TO COMPLETELY COVER MINERAL WOOL WITHIN JOINT. HILTI FIRESTOP SPRAY TO OVERLAP MINIMUM 1/2" ONTO CONCRETE WALL ASSEMBLY AND MINIMUM 2" ONTO FIREPROOFING ON BOTH SIDES OF WALL ASSEMBLY.

NOTES : 1. MAXIMUM WIDTH OF JOINT = 2".
 2. ADDITIONAL 1-3/8" THICKNESS MK-6/HY FIREPROOFING OR 1-1/2" THICKNESS TYPE 300 APPLIED TO EACH SIDE OF STEEL BEAM WEB.



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Sheet	1 of 1
Scale	3/32" = 1"
Date	May 25, 2010

Drawing No.
**HWD
 0440d**

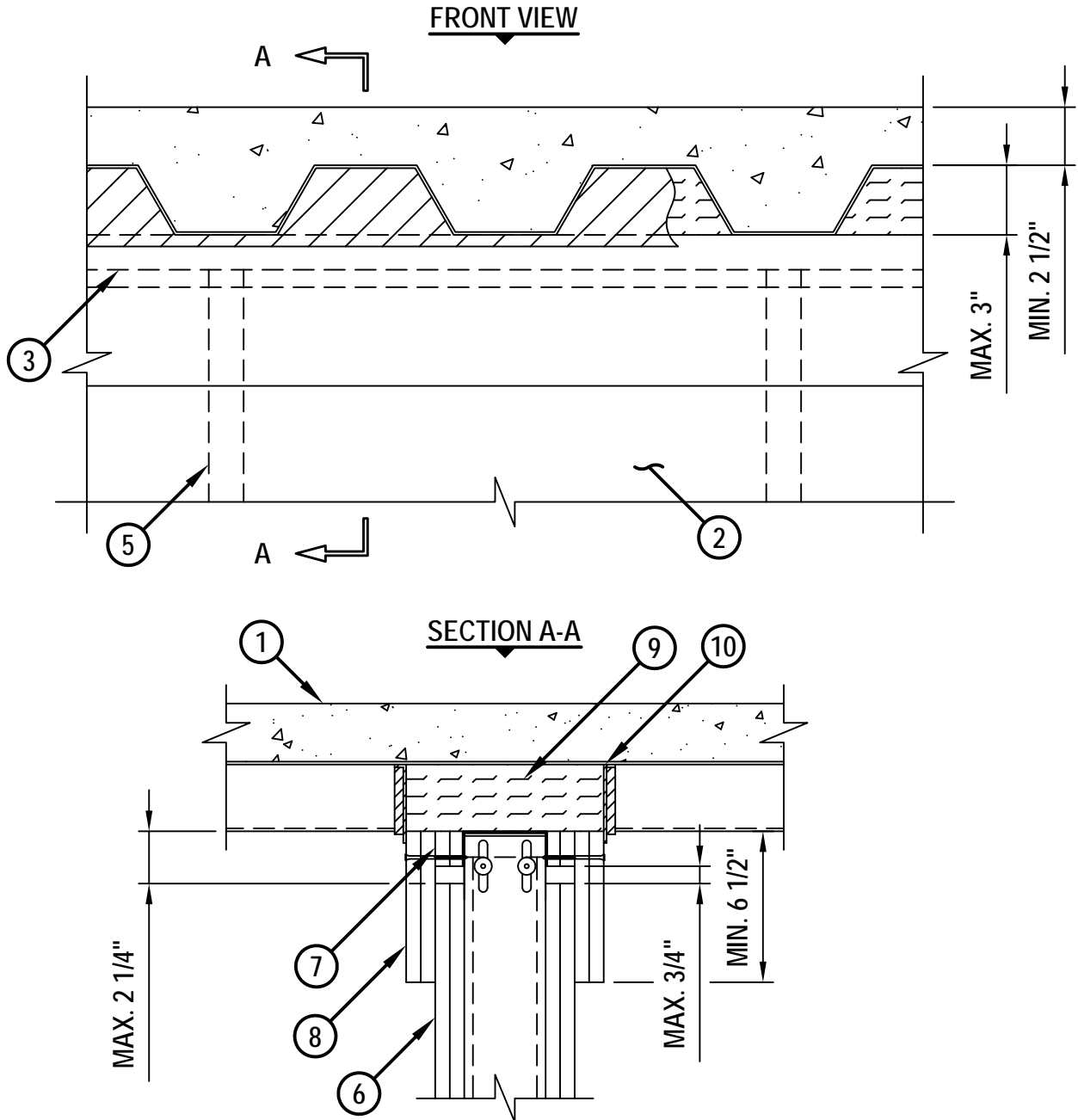
UL/cUL SYSTEM NO. HW-D-0460

TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY

ASSEMBLY-RATING = 1-HR. OR 2-HR.

CLASS II MOVEMENT CAPABILITIES - 100% COMPRESSION OR 50% EXTENSION

HWDD0460d.050712



1. FLOOR OR ROOF ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING) :

- A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MIN. 2-1/2" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED D700 OR D900 SERIES).
- B. INSULATING CONCRETE (MIN. 2-1/4" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED P900 SERIES).
- C. [NOT SHOWN] FLUTED STEEL ROOF DECK WITH SPRAY-APPLIED FIREPROOFING (UL/cUL CLASSIFIED P700 SERIES).



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Sheet	1 of 2
Scale	9/64" = 1"
Date	May 07, 2012

Drawing No.
**HWD
0460d**

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TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY

ASSEMBLY-RATING = 1-HR. OR 2-HR.

CLASS II MOVEMENT CAPABILITIES - 100% COMPRESSION OR 50% EXTENSION

HWD0460d.050712

2. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
3. CEILING RUNNER (1-1/2" FLANGES) FASTENED TO UNDERSIDE OF DECK WITH STEEL MASONRY ANCHORS, STEEL FASTENERS, OR WELDS (SPACED MAX. 24" O.C.).
4. STEEL STUDS (MINIMUM 3-1/2" WIDE) CUT 3/4" TO 1" LESS IN LENGTH THAN ASSEMBLY HEIGHT, NESTING IN CEILING RUNNER WITHOUT ATTACHMENT (SEE NOTE NO. 2 BELOW).
5. [OPTIONAL - NOT SHOWN] WHEN SPRAY-APPLIED FIREPROOFING IS USED, CEILING RUNNER MAY BE SECURED TO DECK WITH Z-SHAPED CLIPS (MIN. 20 GA.) WITH THE FOLLOWING DIMENSIONS : MINIMUM 1" LONG, BUT NOT EXCEEDING THE WIDTH OF THE WALL, BY 1-1/2" OR 2" LONG UPPER AND LOWER LEGS. SUPPORT CLIPS SPACED MAXIMUM 24" OC.
6. 5/8" OR 1-1/4" THICKNESS GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. TOP ROW OF SCREWS SHALL BE INSTALLED INTO STUDS 3-1/2" TO 4" BELOW THE BOTTOM PLANE OF FLOOR/ROOF.
7. WALL CLADDING - 5/8" OR 1-1/4" THICK GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. CLADDING TO BE BUTTED TIGHT TO VALLEY OF STEEL DECK AND EXTENDING DOWN TO BOTTOM OF THE CEILING RUNNER FASTENED TO CEILING RUNNER 24" C/C.
8. WALL CLADDING - 5/8" OR 1-1/4" THICK GYPSUM WALLBOARD AS SPECIFIED IN THE INDIVIDUAL UL DESIGN. CLADDING TO BE BUTTED TIGHT TO VALLEY OF STEEL DECK AND OVERLAPPING WALL MINIMUM 6-1/2" FASTENED TO CEILING RUNNER 6" C/C.
9. HILTI CP 777 SPEED PLUGS FRICTION FITTED TO COMPLETELY FILL FLUTE, FLUSH WITH OUTER SURFACES OF WALL CLADDING (SEE NOTE NO. 5 BELOW).
10. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY OR HILTI CP 672 SPEED SPRAY TO COMPLETELY COVER MINERAL WOOL, OVERLAPPING MINIMUM 1/2" ONTO WALL CLADDING AND METAL DECK.

- NOTES :
1. MAXIMUM WIDTH OF JOINT = 3/4".
 2. AS AN ALTERNATE TO CEILING RUNNER IN ITEM NO. 3, CEILING RUNNERS, MANUFACTURED BY THE STEEL NETWORK, INC., MAY BE USED. WHEN ALTERNATE CEILING RUNNERS ARE USED, CONSULT THE UL FIRE RESISTANCE DIRECTORY FOR INSTALLATION INSTRUCTIONS.
 3. STEEL FLOOR UNITS MAY BE SPRAYED WITH A MIN. 5/16" THICKNESS TO MAX. 1-3/4" THICKNESS OF UL CLASSIFIED MONOKOTE TYPE MK-6/HY FIREPROOFING MANUFACTURED BY W.R. GRACE PRIOR TO OR AFTER INSTALLATION OF CEILING RUNNERS.
 4. WHEN THE STEEL DECK IS COATED WITH FIREPROOFING, HILTI FIRESTOP SPRAY SHALL OVERLAP THE WALL A MINIMUM 1/2" AND OVERLAP THE FIREPROOFING A MINIMUM 2" ON BOTH SIDES OF GYPSUM WALL ASSEMBLY.
 5. AS AN ALTERNATE TO HILTI CP 777 SPEED PLUGS, MINERAL WOOL (MIN. 4 PCF DENSITY) COMPRESSED 50% MAY BE USED.



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Sheet	2 of 2
Scale	-
Date	May 07, 2012

Drawing No.
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0460d**

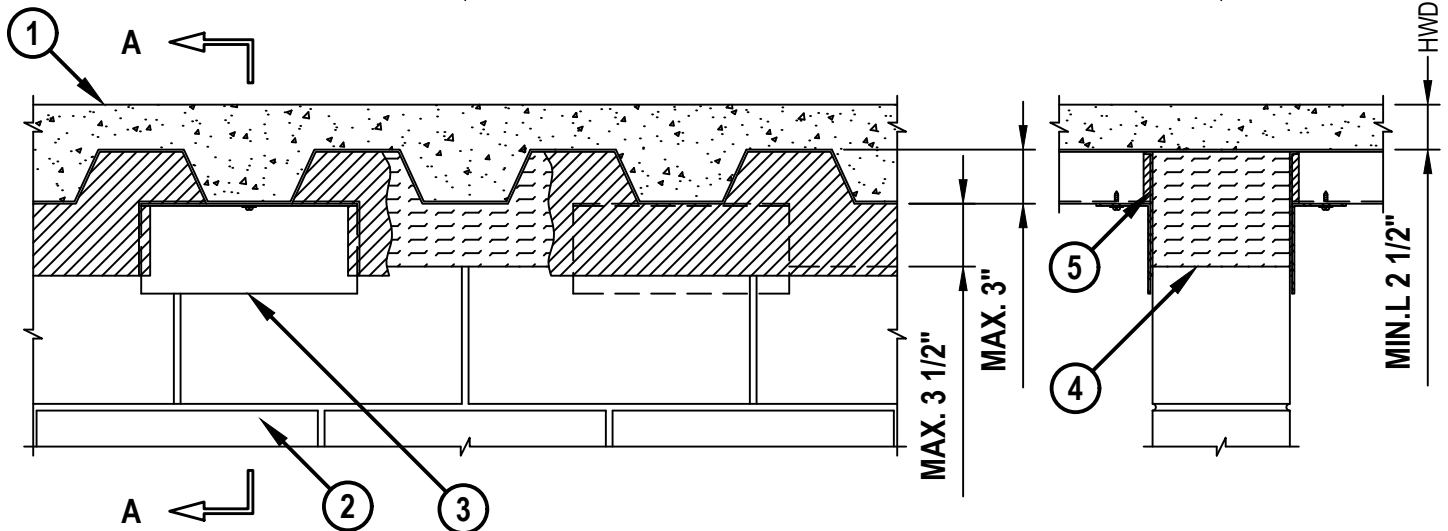
TOP OF WALL JOINT : CONCRETE BLOCK WALL ASSEMBLY

ASSEMBLY RATING = 2-HR.

CLASS II MOVEMENT CAPABILITIES - 14% COMPRESSION OR EXTENSION

FRONT VIEW

SECTION A-A



1. FLOOR OR ROOF ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHT WEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MIN. 2-1/2" THICK) OVER METAL DECKING (UL/cUL CLASSIFIED D700 OR D900 SERIES).
 - B. [NOT SHOWN] FLUTED STEEL ROOF DECK WITH SPRAY-APPLIED FIREPROOFING (UL/cUL CLASSIFIED P700 SERIES).
2. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 8" THICK).
 - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
3. STEEL ANGLES (MAXIMUM SIZE : 5" x 3" x 12 GA., OR THICKER) CUT MAXIMUM 12" LONG AND FASTENED TO METAL DECK AT MINIMUM 24" C/C. STEEL ANGLES TO BE STAGGERED ON OPPOSITE SIDE OF WALL.
4. MINIMUM 8" THICKNESS MINERAL WOOL SAFING (MIN. 4 PCF DENSITY) COMPRESSED 50% AND INSERTED INTO JOINT, BEHIND STEEL ANGLES AND INTO FLUTE.
5. MINIMUM 1/8" (WET) THICKNESS HILTI CFS-SP WB FIRESTOP JOINT SPRAY TO COMPLETELY COVER MINERAL WOOL AND TO OVERLAP MINIMUM 1/2" ONTO BLOCK WALL, STEEL ANGLES, AND METAL DECK ON BOTH SIDES OF WALL ASSEMBLY.

NOTES :

1. MAXIMUM WIDTH OF JOINT = 3-1/2".
2. STEEL FLOOR UNITS MAY BE SPRAYED WITH A MINIMUM 5/16" THICKNESS TO MAXIMUM 1-3/4" THICKNESS OF UL CLASSIFIED MONOKOTE TYPE MK-6/HY FIREPROOFING MANUFACTURED BY W.R. GRACE & CO.
3. WHEN THE STEEL DECK IS COATED WITH FIREPROOFING, HILTI FIRESTOP SPRAY SHALL OVERLAP THE WALL MIN. 1/2" AND OVERLAP THE FIREPROOFING MINIMUM 2", ON BOTH SIDES OF THE WALL.



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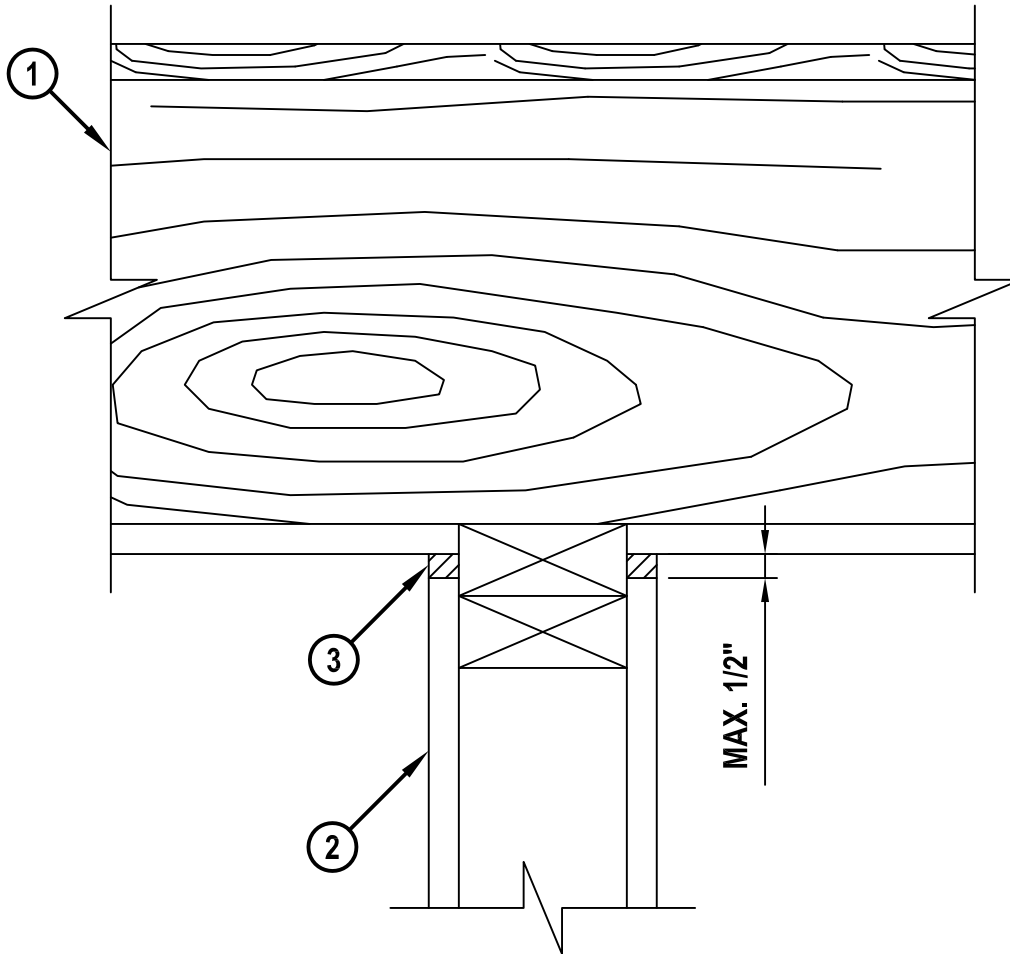
Sheet	1 of 1
Scale	3/32" = 1"
Date	Oct. 05, 2017

Drawing No.
**HWD
1044c**

UL/cUL SYSTEM NO. HW-S-0090
TOP OF WALL JOINT : GYPSUM WALL ASSEMBLY
 ASSEMBLY RATING = 1-HR.

HWS0090b.123014

CROSS-SECTIONAL VIEW



1. WOOD FLOOR/CEILING ASSEMBLY (UL/cUL CLASSIFIED L500 SERIES) (1-HR. FIRE-RATING).
2. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED) (1-HR. FIRE-RATING) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
 - A. WOOD PLATES AND STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER (SPACED MAXIMUM 16" OC).
 - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
3. MINIMUM 5/8" DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT OR HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.



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Sheet	1 of 1
Scale	1/4" = 1"
Date	Dec. 30, 2014

Drawing No.
**HWS
 0090b**

UL/cUL SYSTEM NO. W-L-1054

METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

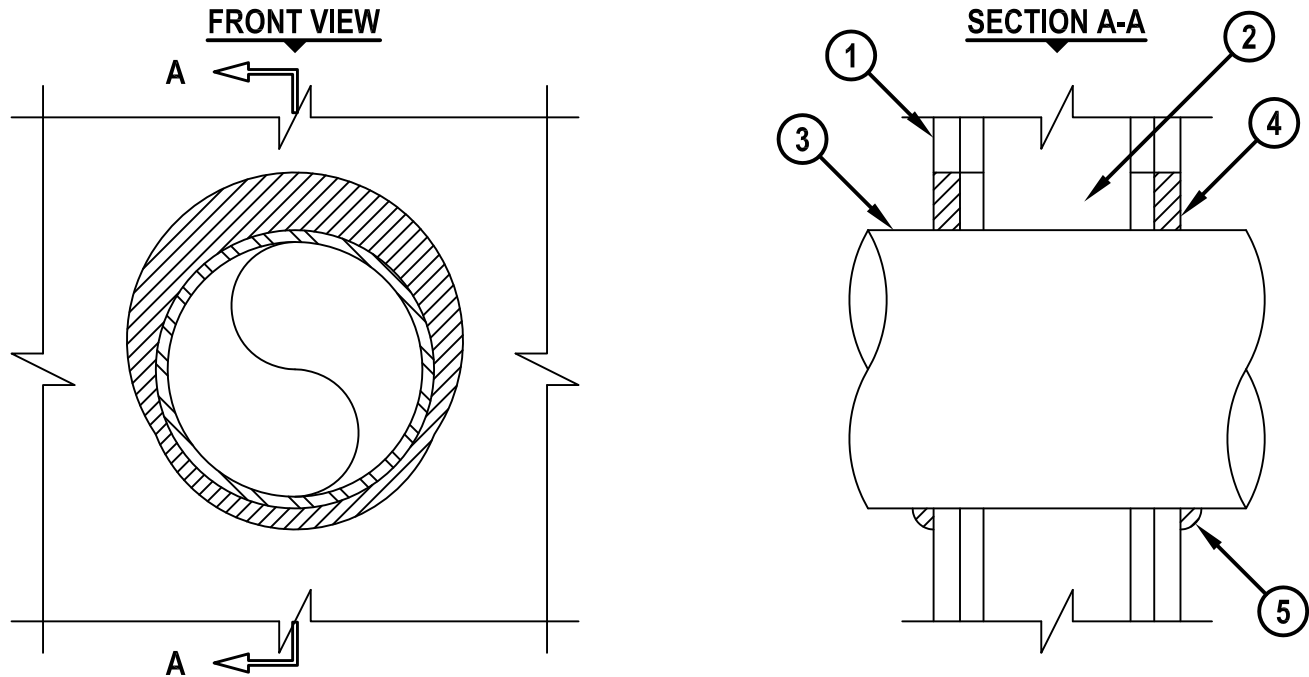
F-RATING = 1-HR. OR 2-HR.

T-RATING = 0-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT

L-RATING AT 400°F = LESS THAN 1 CFM / SQ FT

WL 1054u.041316



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 - B. MAXIMUM 30" DIAMETER CAST IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
 - D. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
 - E. MAXIMUM 4" NOMINAL DIAMETER EMT.
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING :
A. 32-1/4" FOR STEEL STUD WALLS.
B. 14-1/2" FOR WOOD STUD WALLS.
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".
3. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT OF CONTACT.



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Sheet	1 of 1
Scale	7/32" = 1"
Date	Apr. 13, 2016

Drawing No.

WL
1054u

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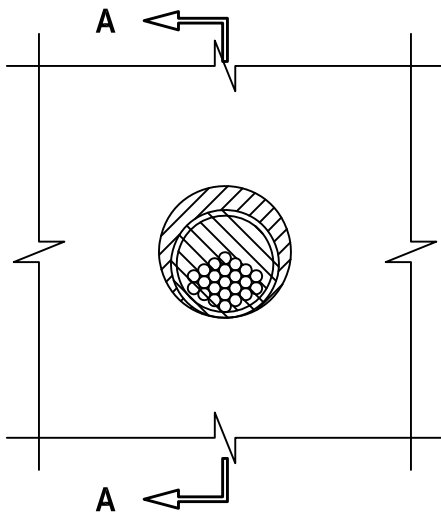
CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

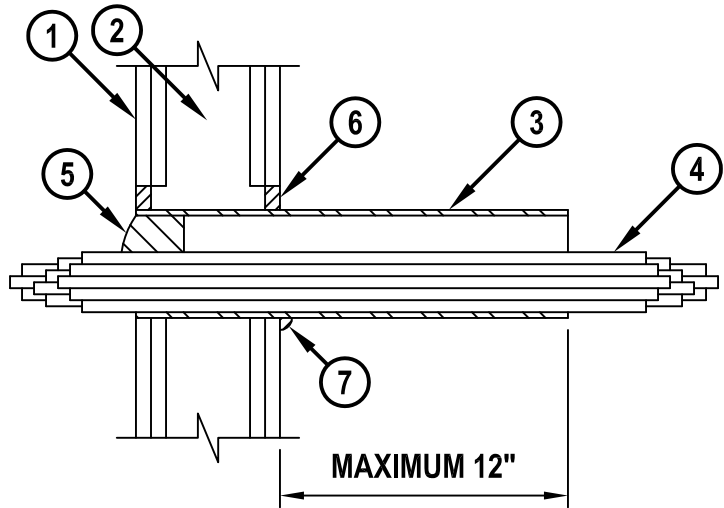
T-RATING = 0-HR.

WL3272d.011415

FRONT VIEW



SECTION A-A



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE.
3. NOMINAL 2" OR 4" DIAMETER STEEL PIPE SLEEVE (SCHEDULE 5 OR HEAVIER). SLEEVE MAY EXTEND UP TO 12" BEYOND WALL SURFACE IN ANY COMBINATION (SEE NOTE NO. 4 BELOW).
4. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
 - B. MAXIMUM 750 KCMIL POWER CABLE WITH PVC JACKET.
 - C. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
 - D. MAXIMUM 1/2" DIAMETER FIBER-OPTIC CABLE (MAXIMUM 24 FIBER).
 - E. MAXIMUM 3/C NO. 12 AWG METAL-CLAD CABLE WITH PVC JACKET.
 - F. MAXIMUM 1" DIAMETER METAL-CLAD TEK CABLE WITH PVC JACKET.
5. ONE HILTI CFS-PL FIRESTOP PLUG OR HILTI CP 658T FIRESTOP PLUG CUT TO FIT AROUND THE CABLE BUNDLE AND INSTALLED TIGHTLY WITHIN SLEEVE SUCH THAT THE OUTER CIRCUMFERENCE OF THE DOME SHAPED PLUG IS FLUSH WITH EITHER END OF SLEEVE.
6. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT TO BE APPLIED WHEN ANNULAR SPACE EXISTS.
7. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT SLEEVE/WALL INTERFACE WHEN SLEEVE EXTENDS PAST WALL.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 5-1/2".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
 3. CABLES TO FILL MAXIMUM 50% OF CROSS-SECTIONAL AREA OF THE OPENING.
 4. SLEEVE TO BE RIGIDLY SUPPORTED WHEN EXTENDING MORE THAN 2" BEYOND WALL SURFACE.



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Sheet	1 of 1
Scale	1/8" = 1"
Date	Jan. 14, 2015

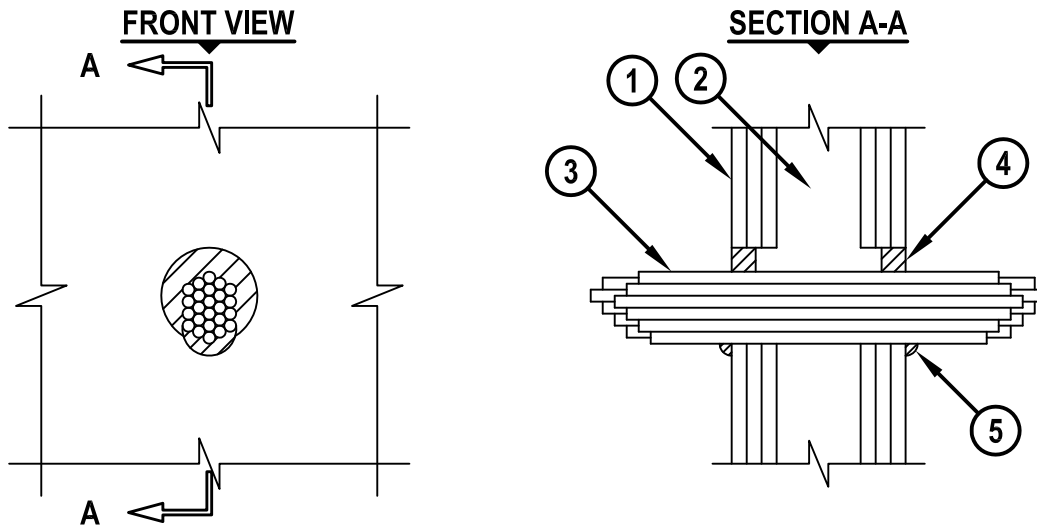
Drawing No.
WL
3272d

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR., 2-HR., OR 3-HR.

T-RATING = 0-HR.

WL3385c.010816



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, V400, OR W400 SERIES) (1-HR., 2-HR., OR 3-HR. FIRE-RATING) (3-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE.
3. CABLE BUNDLE TO BE A COMBINATION OF ANY OF THE FOLLOWING :
 - A. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC INSULATION AND JACKET.
 - B. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC INSULATION AND JACKET.
 - C. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR CAT 6 COMPUTER CABLE.
 - D. MAXIMUM 1/2" DIAMETER TYPE RG/U COAXIAL CABLE WITH PE INSULATION AND PVC JACKET.
 - E. MAXIMUM RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKET.
 - F. MAXIMUM 5/8" DIAMETER MULTIPLE FIBER OPTIC COMMUNICATION CABLE WITH PVC JACKET.
 - G. MAXIMUM 3/C COPPER CONDUCTOR NO. 8 AWG METAL CLAD CABLE.
 - H. MAXIMUM 3/C (+GRND) NO. 8 AWG COPPER CONDUCTOR CABLE WITH PVC INSULATION AND JACKET.
 - I. ANY CABLES, METAL-CLAD CABLE, OR ARMORED CABLE CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
4. HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT :
 - A. MINIMUM 5/8" DEPTH REQUIRED FOR 1-HR. OR 2-HR. FIRE-RATING.
 - B. MINIMUM 1" DEPTH REQUIRED FOR 3-HR. FIRE-RATING.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AT CABLE BUNDLE/WALL INTERFACE ON BOTH SIDES OF WALL.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 7/8".
 3. CABLES TO FILL MAXIMUM 45% OF CROSS-SECTIONAL AREA OF OPENING.



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Sheet	1 of 1
Scale	1/8" = 1"
Date	Jan. 08, 2016

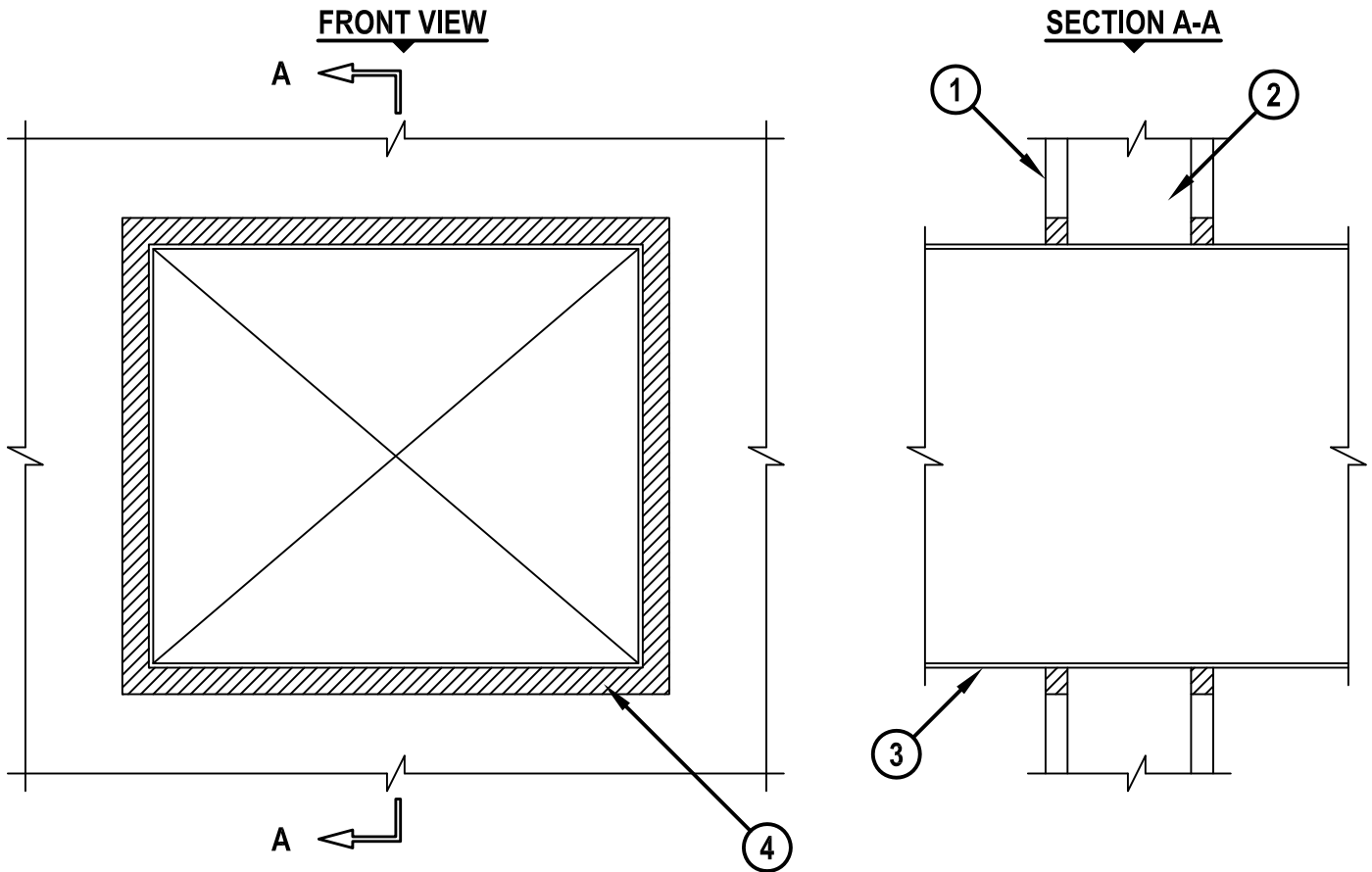
Drawing No.
WL
3385c

SHEET-METAL DUCT THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR.

T-RATING = 0-HR.

WL7096b.011415



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300 OR U400 SERIES) (1-HR. FIRE-RATING).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE.
3. RECTANGULAR SHEET METAL DUCT (MAXIMUM SIZE : 14" x 12", MINIMUM 24 GA. THICKNESS).
(NOTE : NOT FOR USE IN DUCT SYSTEMS CONTAINING A FIRE DAMPER).
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.

NOTES : 1. MAXIMUM AREA OF OPENING = 202 SQ. IN. WITH A MAXIMUM DIMENSION OF 15-1/4".
2. ANNULAR SPACE = MINIMUM 1/4", MAXIMUM 3/4".



Hilti Firestop Systems

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Sheet	1 of 1
Scale	3/16" = 1"
Date	Jan. 14, 2015

Drawing No.

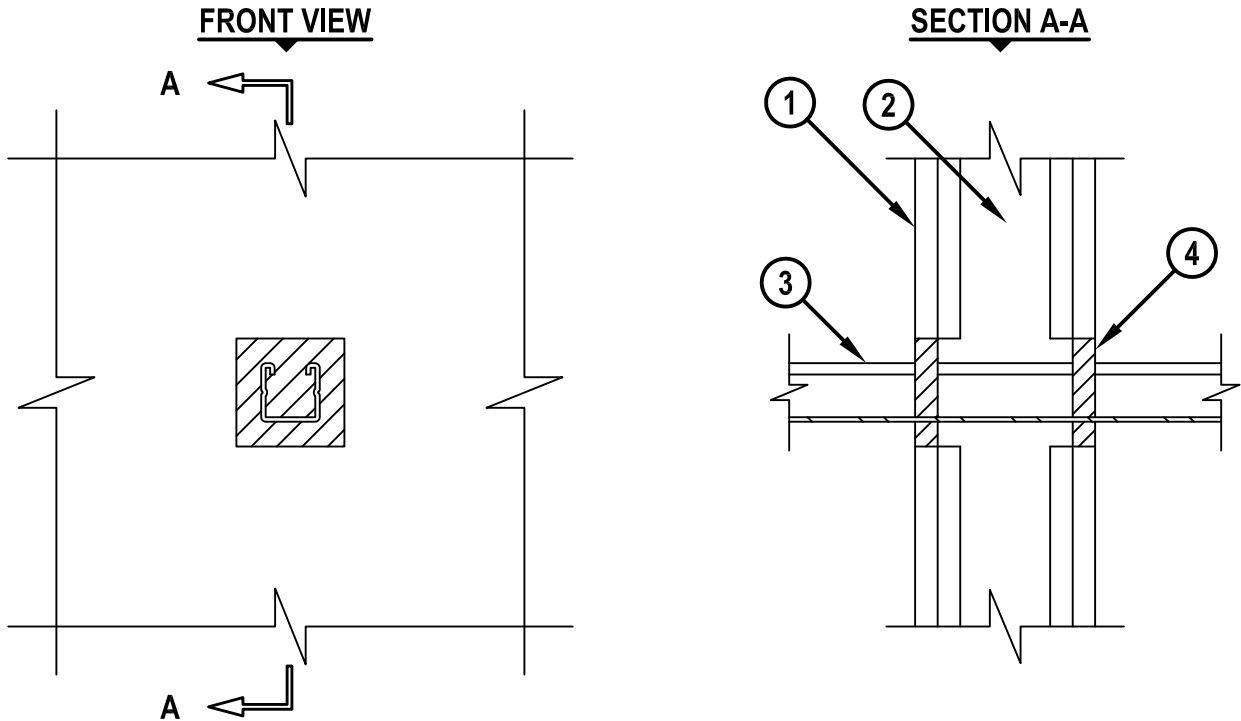
**WL
7096b**

MECHANICAL SUPPORT MEMBERS THROUGH GYPSUM WALL SSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 0-HR.

WL7130b.011415



1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 1-5/8" x 1-5/8" GALVANIZED OR PAINTED STEEL CHANNEL STRUT (MINIMUM 0.105" THICK).
 - B. MAXIMUM 3-1/4" x 1-5/8" GALVANIZED OR PAINTED STEEL "H" STRUT (MINIMUM 0.105" THICK).
 - C. MAXIMUM 3/8" DIAMETER UNJACKETED GALVANIZED STEEL CABLE.
 - D. MAXIMUM 1" DIAMETER GALVANIZED THREADED STEEL ROD.
 - E. MAXIMUM 2" x 2" x 1/8" THICK STEEL ANGLE.
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT.

NOTES : 1. MAXIMUM SIZE OF OPENING = 5" x 3" [OR MAXIMUM 3" DIAMETER].
 2. ANNULAR SPACE = MINIMUM 1/8", MAXIMUM 7/8".
 3. PENETRANT MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45° FROM PERPENDICULAR.
 4. WHEN HILTI CP 606 FLEXIBLE FIRESTOP SEALANT IS USED ON AN ANGLED PENETRANT THROUGH A 2-HR FIRE RATED WALL, FIRMLY PACK 1/2" THICKNESS OF MINERAL WOOL (MIN. 4 PCF DENSITY) INTO OPENING AS A PERMANENT FORM.



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Sheet	1 of 1
Scale	3/16" = 1"
Date	Jan. 14, 2015

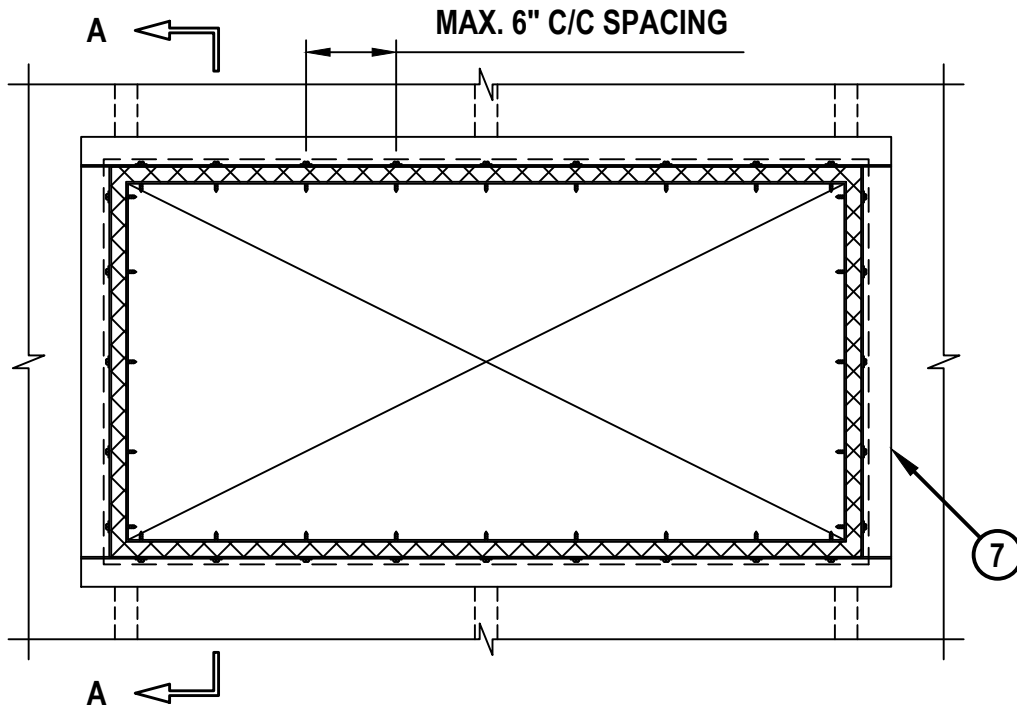
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WL 7130b

UL/cUL SYSTEM NO. W-L-7151

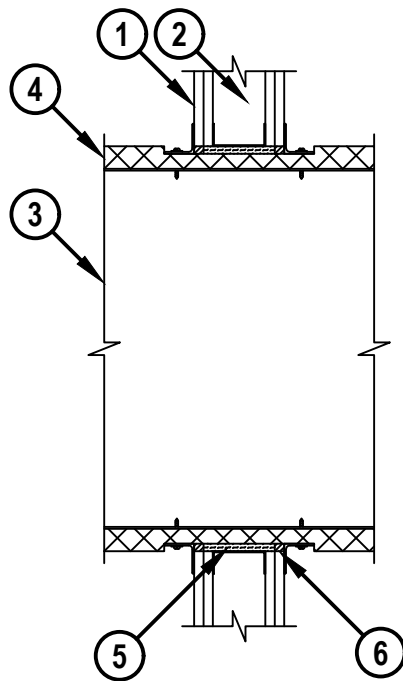
INSULATED SHEET METAL DUCT THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR., 1-HR., OR 2-HR.

FRONT VIEW



SECTION A-A



WL7151h.091918



Hilti Firestop Systems

HILTI, Inc.
Plano, Texas USA (800) 879-8000

Sheet 1 of 2

Scale 5/64" = 1"

Date Sep. 19, 2018

Drawing No.

WL
7151h

Saving Lives through Innovation and Education

INSULATED SHEET METAL DUCT THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

T-RATING = 0-HR.

WL7151h.091918

1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, V400, OR W400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE. OPENING TO BE FRAMED OUT WITH STUD MATERIAL.
3. MAXIMUM 60" x 36" RECTANGULAR SHEET METAL DUCT CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS.
4. MAXIMUM 2" THICK GLASS-FIBER DUCT INSULATION (MIN. 3/4 PCF) WITH FOIL-SCRIM-KRAFT FACING (SEE NOTE NO. 2 BELOW). JOINTS SEALED WITH ALUMINUM FOIL TAPE.
5. MINIMUM 3-1/2" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED, RECESSED TO ACCOMMODATE SEALANT.
6. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.
7. STEEL RETAINING ANGLE (SEE NOTES NO. 3 AND 4, AND TABLE BELOW).

MAXIMUM DUCT DIMENSION	DUCT THICKNESS	MAX. INSULATION THICKNESS (ITEM 4)	ANNULAR SPACE (MIN. - MAX.)	PACKING MATERIAL (ITEM 5) REQUIRED	ANGLE (ITEM 7) REQUIRED	T-RATING
24 IN. **	24 GA. (OR HEAVIER)	1-1/2"	1/4" TO 1"	NO	NO	0
25" BY 45"	24 GA. (OR HEAVIER)	2"	1/4" TO 3-1/2"	YES	NO	1 OR 2 (SAME AS WALL RATING)

NOTE ** INDICATES THAT WHEN MAX. 1-1/2" THICK INSULATION IS USED, STEEL ANGLES ARE OPTIONAL ON THOSE SIDES OF THE DUCT THAT DO NOT EXCEED THE DIMENSION SPECIFIED.

NOTES : 1. MAXIMUM SIZE OF OPENING [FOR STEEL STUD FRAMING] = 63" x 39".
 MAXIMUM SIZE OF OPENING [FOR WOOD STUD FRAMING] = 14-1/2" x 14-1/2".
 2. INSULATION TO BE COMPRESSED MINIMUM 50% SUCH THAT THE ANNULAR SPACE = MINIMUM 1/4", MAXIMUM 3-1/2".
 3. AFTER SEALING SPACE BETWEEN DUCT AND GYPSUM WALL ASSEMBLY WITH HILTI FIRESTOP SEALANT, FASTEN STEEL ANGLE (MIN. 18 GA. OR 16 GA. WHEN DUCT DIMENSION EXCEEDS 48") TO DUCT, THROUGH INSULATION, WITH 3/4" LONG NO. 8 SHEET METAL SCREWS SPACED 6" C/C. STEEL ANGLE TO OVERLAP DUCT MINIMUM 2" AND GYPSUM WALL ASSEMBLY BY MINIMUM 1". ANGLE DOES NOT HAVE TO BE FASTENED TO GYPSUM WALL ASSEMBLY.



HILTI, Inc.
 Plano, Texas USA (800) 879-8000

Sheet	2 of 2
Scale	-
Date	Sep. 19, 2018

Drawing No.
WL 7151h

Asbestos Abatement and Lead Removal Project Monitoring Report

June 22 – June 29, 2020
Hebron Elementary School
92 Church Street, Hebron, Connecticut

Silver Petrucelli & Associates
Hamden, Connecticut

September 4, 2020



FUSS & O'NEILL

Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040



FUSS & O'NEILL

September 4, 2020

Mr. Ryan Haley, Assoc. AIA
Silver Petrucelli + Associates
3190 Whitney Avenue, Building 2
Hamden, Connecticut 06518

RE: Asbestos Abatement and Lead Removal Project
June 22 – June 29, 2020
Hebron Elementary School, 92 Church Street, Hebron, Connecticut
Water Remediation Project
Fuss & O'Neill Project No. 20160168.W30

Dear Mr. Haley:

Enclosed please find the report for the asbestos abatement and lead removal project completed at Hebron Elementary School located at 92 Church Street, Hebron, Connecticut.

Additionally, this report is important documentation that must be placed with the Asbestos Hazard Emergency Response Act (AHERA) Management Plan that was generated for the School. A copy should be placed at the School, as well as the central location where the Asbestos Management Plans (AMPs) are stored.

If you have any questions regarding the enclosed report, please do not hesitate to contact me at (860) 646-2469, extension 5585. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Kathleen C. Pane
Associate

KCP/kr

Enclosure

146 Hartford Road
Manchester, CT
06040

t 860.646.2469

800.286.2469

f 860.533.5143

www.fando.com

California

Connecticut

Maine

Massachusetts

New Hampshire

Rhode Island

Vermont

F:\P2016\0168\W30\Deliverables\Report\KCP_AsbAbatementProject_HebronES_20200810.docx

Table of Contents

Asbestos Abatement and Lead Removal Project Monitoring Report Hebron Elementary School, 92 Church Street, Hebron, CT Silver Petrucelli & Associates

1	Introduction	1
2	Scope of Work	1
3	Discussion	2
4	Conclusion.....	3

Appendices

End of Report

APPENDIX A	- FUSS & O'NEILL LICENSES AND CERTIFICATIONS	
APPENDIX B	- CONTRACTOR'S LICENSE & WORKERS' CERTIFICATIONS	
APPENDIX C	- CTDPH ASBESTOS ABATEMENT NOTIFICATION FORM	
APPENDIX D	- PCM FINAL AIR CLEARANCE REPORTS	
APPENDIX E	- FUSS & O'NEILL SITE LOGS	
APPENDIX F	- FUSS & O'NEILL SIGN-IN SHEETS	
APPENDIX G	- CONTRACTOR SIGN-IN LOGS	
APPENDIX H	- CONTRACTOR DAILY LOGS	
APPENDIX I	- CONTRACTOR PERSONAL AIR SAMPLE RESULTS	
APPENDIX J	- TCLP LEAD LABORATORY RESULT AND CHAIN OF CUSTODY FORM	
APPENDIX K	- FINAL VISUAL INSPECTION FORMS	
APPENDIX L	- WASTE SHIPMENT RECORDS	

1 Introduction

Fuss & O'Neill, Inc. (Fuss & O'Neill) was retained to provide asbestos abatement and lead removal project monitoring services at the Hebron Elementary School located at 92 Church Street, Hebron, Connecticut (the "Site"). Asbestos abatement was necessary due to the water remediation project. The work occurred from June 22 to June 29, 2020. Please refer to *Appendix A* for the Fuss & O'Neill Licenses and Certifications.

Project specifications were prepared by Fuss & O'Neill and provided under separate cover. The General Contractor was Nutmeg Companies, Inc. of Norwich, Connecticut. The Asbestos Abatement Contractor was Selective Service, LLC of Manchester, CT (the "Contractor"). Please refer to *Appendix B* for the Contractor's License and Contractor's Workers' Certifications. Despite requests to the Contractor, the respirator fit tests for the workers were not provided.

The Contractor filed an Asbestos Abatement Notification with the State of Connecticut Department of Public Health (CTDPH) prior to the commencement of abatement activities; these can be found in *Appendix C*.

All abatement work was conducted while no person at or under eighteen years of age was allowed into the building. All entrances to the building were posted with signs stating that asbestos abatement activities were underway, and no one under 19 years of age is allowed into the building.

Following the completion of final cleaning and encapsulation of the work area, aggressive Phase Contrast Microscopy (PCM) final air clearance sampling was performed inside the work areas to comply with state and federal regulatory requirements. PCM air samples were analyzed by a trained Asbestos Project Monitor listed on the Asbestos Analyst's Registry (AAR) maintained by the American Industrial Hygiene Association (AIHA). Please refer to *Appendix D* for the PCM Final Air Clearance Reports.

Pre-sealant inspections were also conducted to verify that the work area met the no visible dust criteria prior to conducting final air clearance. Please refer to *Appendix E* for the Fuss & O'Neill Site Logs and *Appendix F* for the Fuss & O'Neill Sign-In Sheets. In addition, Fuss & O'Neill was provided copies of the Contractor's Sign-In Logs (*Appendix G*), Daily Logs (*Appendix H*), and Personal Air Sample Results (*Appendix I*); however, the results were not calculated and shown on the Contractor's Personal Air Sample Results.

2 Scope of Work

The scope of the abatement work included the removal and disposal of the asbestos-containing material (ACM) and lead containing material listed for each of the following locations summarized in Table 1 below:

Table 1
Summary of Asbestos and Lead Removal Work Areas and Inspection Duties

Removal Location	Material Removed	Quantity Removed
Girls' and Boys' Lavatory – 1963 Wing – Toilet 57 and 59	Asbestos-Containing White Caulk at Counter/Ceramic Wall Tile Junction	40 LF
Classrooms 5, 6, 7, and 8 – 1957 Wing	Asbestos-Containing Air Cell Pipe Insulation and Fittings	8 LF
Girls' and Boys' Lavatories – 1947 Wing – Toilet 08 and 09 1963 Wing – Toilet 66, 67, 57 and 59	Asbestos-Containing Pipe insulation in Wet Walls	125 LF
Girls' and Boys' Lavatories – 1947 Wing – Toilet 08 and 09	Lead Containing Black 4" Ceramic Wall Tile Cove Base	All
Girls' and Boys' Lavatories – 1963 Wing – Toilet 57, 59, 66 and 67	Lead Containing Pink and Blue 4" Ceramic Wall Tile	All
Throughout Where Needed for to Accommodate Work	Lead Soldered Plumbing Lines	Unknown

3 Discussion

The Contractor conducted exploratory demolition within the wet walls associated with the 1963 Wing Girls' and Boys' Lavatories (Toilets 57 and 59) and reported that suspect asbestos-containing pipe insulation was not observed in the wet walls; therefore, pipe insulation abatement specified for this area was not necessary. Asbestos-containing pipe insulation in the Classrooms was approximately 1 foot long at the sink plumbing penetration through to the crawlspace; therefore, glove bag removals were performed in each function classroom space. The total quantity removed was approximately 4 LF, not 8 LF as originally specified.

The Contractor performed exploratory demolition and pipe insulation was found in 1947 Wing Toilet 08, but not 09. In addition, pipe insulation was not found in 1963 Wing Toilet 66 and Toilet 67. A total of 38 LF of asbestos pipe insulation was abated, not 125 LF as originally specified.

Vermiculite insulation assumed to be asbestos contaminated was discovered by the Contractor within an electrical closet in the 1988 Wing within a wall cavity that required partial removal for the work scope. The Contractor constructed an asbestos abatement work containment and removed 15 SF of vermiculite insulation and associated contaminated debris. This was not identified in the original scope of work.

Blue ceramic wall tile associated with the 1963 Wing Toilet 72 required demolition. This ceramic tile had not been tested for lead content by x-ray fluorescence (XRF) analyzer by Fuss & O'Neill as part of our inspection. The tile was XRF tested and found to contain lead, i.e. greater than 1.0 mg/cm². The lead containing tile was removed within a containment. Fuss & O'Neill was not contacted for this work and did not witness the removal or conduct a final visual inspection prior to the containment being removed from the area. Fuss & O'Neill collected a representative sample of the ceramic tile and submitted the sample for Toxicity Characteristic Leaching Procedure (TCLP) lead sampling at EMSL Analytical, Inc. According to the laboratory analytical results the sample was reported to leach lead less than 5.0 mg/L.

(<4.0 mg/L) and therefore supported disposal of the material as regular construction debris. Refer to *Appendix J* for a copy of the TCLP Lead Laboratory Result and Chain of Custody Form.

Table 2 below summarizes the abatement locations, material type, and quantity abated as well as the final visual inspection date and when re-occupancy final clearance was conducted.

**Table 2
Summary of Asbestos and Lead Removal Work Areas and Inspection Duties**

Abatement Location	Material Type	Quantity Abated	Final Visual Inspection Date	Final PCM Air Clearance Date
Boys' Lavatory–1963 Wing–Toilet 59	Asbestos-Containing White Caulk at Counter/Ceramic Wall Tile Junction	20 LF	6/22/20	6/22/20
Girls' Lavatory–1963 Wing–Toilet 57	Asbestos-Containing White Caulk at Counter/Ceramic Wall Tile Junction	20 LF	6/22/20	6/22/20
Classrooms 5, 6, 7, and 8–1957 Wing	Asbestos-Containing Air Cell Pipe Insulation and Fittings	4 LF	6/25/20	Only visual – glove bags
Boys' Lavatory–1947 Wing–Toilet 08	Asbestos-Containing Pipe insulation in Wet Walls	15 LF	6/25/20	6/25/20
1988 Wing–Electrical Closet	Assumed Asbestos Contaminated Vermiculite Wall Insulation	15 SF	6/25/20	6/25/20
Girls' and Boys' Lavatories–1947 Wing–Toilet 08 and 09	Lead Containing Black 4" Ceramic Wall Tile Cove Base	All	6/25/20	Only visual noted in logs
Girls' and Boys' Lavatories – 1963 Wing–Toilet 57, 59, 66 and 67	Lead Containing Pink and Blue 4" Ceramic Wall Tile	All	6/22/20	Only visual noted in logs

4 Conclusion

All work areas passed pre-sealant visual inspections prior to work area encapsulation by the Contractor. Following encapsulation in asbestos abatement work areas, aggressive final air clearance sampling by PCM was conducted in accordance with the requirements of the CTDPH Standards for Asbestos Abatement (19a-332a-1 through 19a-332a-16) and the EPA Asbestos Hazard Emergency Response Act (AHERA) Regulation (40 CFR Part 763 Final Rule and Notice). All asbestos abatement work areas passed final air clearance. Please refer to *Appendix K* for a copy of the Final Visual Inspection Forms.



A copy of the Waste Shipment Records was provided by the Contractor and can be found in *Appendix L*.

Sincerely:

A handwritten signature in blue ink, appearing to read 'Kathleen C. Pane'.

Kathleen C. Pane
Associate

Appendix A

Fuss & O'Neill Licenses and Certifications



SCOTT M. MOSSEY
146 HARTFORD RD
C/O FUSS O'NEIL
MANCHESTER CT 06040-5992

Dear SCOTT M. MOSSEY,

Attached you will find your validated certificate for the coming year. Should you have any questions about your certificate renewal, please do not hesitate to write or call:

Department of Public Health
P.O. Box 340308
M.S.#12MQA
Hartford, CT 06134-0308

(860) 509-7603
opl.c.dph@ct.gov
www.ct.gov/dph/license

Sincerely,

DEIDRE S. GIFFORD, MD, MPH, ACTING COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

EMPLOYER'S COPY

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
SCOTT M. MOSSEY

VALIDATION NO. 03-821438 CERTIFICATE NO. 000295 CURRENT THROUGH 04/30/21

PROFESSION
ASBESTOS CONSULTANT-PROJECT MONITOR

SIGNATURE: ACTING COMMISSIONER:

INSTRUCTIONS:

1. Detach and sign each of the cards on this form
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A
ASBESTOS CONSULTANT-PROJECT MONITOR

SCOTT M. MOSSEY

CERTIFICATE NO. 000295
CURRENT THROUGH 04/30/21
VALIDATION NO. 03-821438

SIGNATURE: ACTING COMMISSIONER:

WALLET CARD

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
SCOTT M. MOSSEY


VALIDATION NO. 03-821438 CERTIFICATE NO. 000295 CURRENT THROUGH 04/30/21

PROFESSION
ASBESTOS CONSULTANT-PROJECT MONITOR


SIGNATURE: ACTING COMMISSIONER:



1000070-0000074-00000001 of 00000001-C01-a1d00101-1064-00072



Certificate of Training



Awarded to

**Scott Mossey
-2157 (DOB 4/7/70)**

*For successful completion of a 40 Hour, 5 Day
**Principles and Practices of Asbestos Abatement Course
for Asbestos Supervisors
June 16 - 20, 1997***

Required by OSHA and the EPA Revised MAP
for accreditation under the TSCA Title 11
as self-certified by Trainer 4/4/94

Presented by

**Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut**

Certificate Number: 1125 P&P

Exam Grade: 99%

Exam Date: 6/20/97

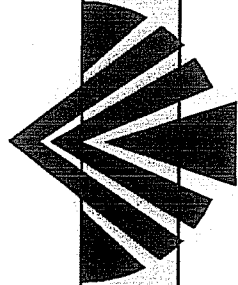
Expiration Date: 6/20/98



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director



Certificate of Training

This program was presented at the offices of Fuss and O'Neill Inc, in Manchester CT with the prior site and course approval by the CT DPH.

Awarded to

SCOTT MOSSEY

*For successful completion of an 8 (eight) hour
Asbestos Project Monitor Refresher Course*

DECEMBER 3 & 5, 2019

This training was approved and given in accordance with Regulations for Connecticut State Agencies RCSA 20-440 - 1.9 and RCSA 20-441 and meets the requirements for the EPA Revised MAP under TSCA Title II of 4/4/94

Presented by

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, CT 06340 (800) 247-7746

Certificate Number: APM/R27900

Exam Grade: 100

Expiration Date: 12/05/2020

Exam Date: 12/05/2019



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director
Richard Haffey, Training Director

CONNECTICUT OCCUPATIONAL MEDICINE PARTNERS, LLC

St. Francis/Hartford
114 Woodard Street
Hartford, CT 06105
860-714-4270
FAX 860-714-8068

St. Francis/Windsor
100 Deerfield Road
Windsor, CT 06095
860-714-9444
FAX 860-714-8900

MedWorks/Bristol
539 Farmington Ave
Bristol, CT 06010
860-589-0114
FAX 860-589-1936

MedWorks/Newington
375 East Cedar Street
Newington, CT 06111
860-667-4418
FAX 860-667-1503

CorpCare/SWindsor
2800 Tamarack Ave, Suite 001
South Windsor, CT 06074
860-647-4796
FAX 860-646-3946

St. Francis/Torrington
1588 E. Main Street
Torrington, CT 06790
860-482-3467
FAX 860-482-3867

Job Placement Examination Recommendations

NAME: Scott Massey

DATE: 6/4/20

COMPANY: Fuss & O'Neill

PROSPECTIVE JOB: Env. Tech

TYPE OF EXAMINATION:

- Pre Placement Return to Work Periodic Fitness for Duty

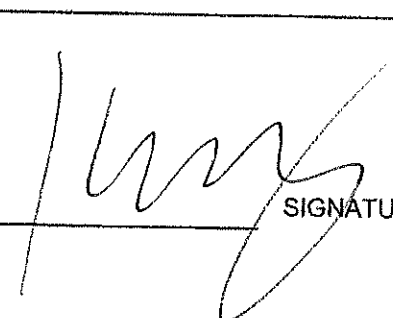
The above named employee/applicant has been physically examined and pertinent medical history has been reviewed. Based upon this health assessment and knowledge of the job requirements as provided by the employer as described by the applicant, the following recommendations are made.

- No work restrictions. The employee is medically qualified to perform all necessary job functions safely under the indicated working conditions and environment.
- Medically qualified to perform all necessary job functions safely under the indicated working conditions and environment, provided the restrictions listed below can be accommodated, and/or the recommendations listed below can be satisfied.
- Not medically qualified for the prospective job for which he/she has been examined. Reasons are listed below.

RESTRICTIONS, RECOMMENDATIONS, COMMENTS: _____

DATE: _____

PHYSICIAN: _____



SIGNATURE: _____

6/4/20

RESPIRATOR CLEARANCE FORM

Employee Name: Scott Mossey
 Date of Evaluation: 6/4/20
 Employer: Fuss-O'Neill

Consistent with OSHA standard 29 CFR 1910.134(e), the above named employee has been evaluated for ability to use an industrial respirator. This evaluation was based upon:

- Review of Medical Questionnaire, adapted from 29 CFR 1910.134, Appendix C.
- Review of Medical Questionnaire and follow-up examination.

- All of the below
 - N, R or P disposable respirators (filter-masks, non-cartridge type)
 - Half-facepiece cartridge respirators
 - Full-facepiece cartridge respirators
 - Supplied air (airline) respirators
 - Self-contained breathing apparatuses
- Other: _____

In the opinion of the CorpCare physician or licensed health care professional:

The employee is is / is not medically able to use the above-cited respirator(s) without limitations.

Limitations on the employee's respirator use related to his medical condition are:

None, or _____

Limitations on the employee's respirator use related to workplace conditions in which the respirator will be used are:

None, or _____

Further medical evaluations are / are not required. Required additional medical evaluations are:

NO PFTS TODAY, PFT 4/13/19 NML
COVID-19

Additional recommendations are on the reverse of this document.

[Signature] | 6/4/20
 Signature | Date

WHITE - Chart YELLOW - Company PINK - Patient



Fuss & O'Neill, Inc.
146 Hartford Road, Manchester, CT 06040
Phone: (860) 646-2469; Fax: (860) 649-6883

QUALITATIVE* FIT TEST RECORD

EMPLOYEE INFORMATION

Name: Scott Massey Date of Birth: 04/07/1970

Date of Last Pulmonary Function Test: _____ Passed Failed

RESPIRATOR(S) FIT TESTED

Manufacturer: North

Type: 1/2 Face

Model: 7700-306

Size: Large

Approval Number: _____

TEST AGENT AND RESULTS OF TEST

Tryptant Smoke Isoamyl Acetate Saccharin Aerosol
 Passed Failed Comments: _____

TEST ADMINISTRATOR

Name: Stacy Vanderveer Date: 6/1/2020

Signature: [Signature] Next Test Due Date: 6/1/2021

*Qualitative fit tests are valid for contaminant exposure levels less than ten (10) times the respective occupational exposure limit.

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A

ASBESTOS CONSULTANT-PROJECT MONITOR

PAUL BATEMAN

CERTIFICATE NO.

000216

CURRENT THROUGH

09/30/20

VALIDATION NO.

03-779157

Paul Bateman
SIGNATURE

Richard P. Mitchell
COMMISSIONER

EMPLOYER'S COPY

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH**

NAME

PAUL BATEMAN

VALIDATION NO.

03-779157

CERTIFICATE NO.

000216

CURRENT THROUGH

09/30/20

PROFESSION

ASBESTOS CONSULTANT-PROJECT MONITOR

Paul Bateman
SIGNATURE

Richard P. Mitchell
COMMISSIONER

WALLET CARD

CERTIFICATE OF ACHIEVEMENT

This certifies that

Paul Bateman

has successfully completed the

**40 Hour Asbestos Abatement Supervisor/Contractor Training
Asbestos Accreditation Under TSCA Title II
40 CFR Part 763**

conducted by

**Con-Test/ATC Environmental, Inc.
39 Spruce Street
East Longmeadow, MA 01028
(413) 525-1198**

Herb Bacon

Principal Instructor

May 13 - 17, 1996

Date of Course

May 17, 1997

Expiration Date

Martin A. Alvares

Regional Manager

40SS-2452

Certificate Number

May 17, 1996

Examination Date

Certificate of Training

This program was presented at the offices of Fuss and O'Neill Inc, in Manchester CT with the prior site and course approval by the CT DPH.

Awarded to

PAUL BATEMAN

*For successful completion of an 8 (eight) hour
Asbestos Project Monitor Refresher Course*

DECEMBER 3 & 5, 2019

This training was approved and given in accordance with Regulations for Connecticut State Agencies RCSA 20-440 - 1-9 and RCSA 20-441 and meets the requirements for the EPA Revised MAP under TSCA Title II of 4/4/94

Presented by

**Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, CT 06340 (800) 247-7746**

Certificate Number: APM/R27897

Exam Grade: 100

Exam Date: 12/05/2019



Christopher J. Eident, CIH, CSP, RS

Expiration Date: 12/05/2020



George Williamson, Training Director

Richard Haffey, Training Director

Sep. 17. 2019 11:00AM

No. 0669 P. 1

CONNECTICUT OCCUPATIONAL MEDICINE PARTNERS, LLC

St. Francis/Hartford
114 Woodard Street
Hartford, CT 06105
860-714-4270
FAX 860-714-8068

St. Francis/Windsor
100 Deerfield Road
Windsor, CT 06095
860-714-8444
FAX 860-714-8900

MedWorks/Bristol
539 Farmington Ave
Bristol, CT 06010
860-589-0114
FAX 860-589-1936

MedWorks/Newington
375 East Cedar Street
Newington, CT 06111
860-667-4418
FAX 860-667-1503

CorpCare/SWindsor
2800 Tamarack Ave, Suite 001
South Windsor, CT 06074
860-647-4798
FAX 860-648-3946

St. Francis/Torrington
1588 E. Main Street
Torrington, CT 06790
860-482-3457
FAX 860-482-3867

Job Placement Examination Recommendations

NAME:

Paul Bateman

DATE:

9/4/19

COMPANY:

FUSS Enr.

PROSPECTIVE JOB:

Environ.

TYPE OF EXAMINATION:

Pre Placement

Return to Work

Periodic

Fitness for Duty

The above named employee/applicant has been physically examined and pertinent medical history has been reviewed. Based upon this health assessment and knowledge of the job requirements as provided by the employer as described by the applicant, the following recommendations are made.

No work restrictions. The employee is medically qualified to perform all necessary job functions safely under the indicated working conditions and environment.

Medically qualified to perform all necessary job functions safely under the indicated working conditions and environment, provided the restrictions listed below can be accommodated, and/or the recommendations listed below can be satisfied.

Not medically qualified for the prospective job for which he/she has been examined. Reasons are listed below.

RESTRICTIONS, RECOMMENDATIONS, COMMENTS:

DATE:

9/4/19

PHYSICIAN:

Louise Cavender

SIGNATURE:

L. Cavender

Sep. 17. 2019 11:00AM

No. 0669 P. 2



2800 Tamarack Ave., Suite 001
 South Windsor, CT 06074
 Phone: (860) 647-4796
 Fax: (860) 644-0287

RESPIRATOR CLEARANCE FORM

Employee Name: Paul Bateman

Date of Evaluation: 9/4/19

Employer: FUSS Coniro

Consistent with OSHA standard 29 CFR 1910.134(e), the above named employee has been evaluated for ability to use an industrial respirator. This evaluation was based upon:

- Review of Medical Questionnaire, adapted from 29 CFR 1910 134, Appendix C
- Review of Medical Questionnaire and follow-up examination.

- All of the below
- N, R or P disposable respirators (filter-masks, non-cartridge type)
- Half-facepiece cartridge respirators
- Full-facepiece cartridge respirators
- Supplied air (airline) respirators
- Self-contained breathing apparatuses
- Other: _____

In the opinion of the CorpCare physician or licensed health care professional:

The employee is is / is not medically able to use the above-cited respirator(s) without limitations.

Limitations on the employee's respirator use related to his medical condition are:

None, or _____

Limitations on the employee's respirator use related to workplace conditions in which the respirator will be used are:

None, or _____

Further medical evaluations are / are not required. Required additional medical evaluations are:

Additional recommendations are on the reverse of this document.

2. Hancock Do _____ 9/4/19
 Signature Date

WHITE - Chart YELLOW - Company PINK - Patient



Fuss & O'Neill, Inc.
146 Hartford Road, Manchester, CT 06040
Phone: (860) 646-2469; Fax: (860) 649-6883

QUALITATIVE* FIT TEST RECORD

EMPLOYEE INFORMATION

Name: Paul Bateman Date of Birth: 09/29/66

Date of Last Pulmonary Function Test: 9/4/19 Passed Failed

RESPIRATOR(S) FIT TESTED

Manufacturer: North

Type: 1/2 Face

Model: 7700-30M

Size: Medium

Approval Number: _____

TEST AGENT AND RESULTS OF TEST

Irritant Smoke Isoamyl Acetate Saccharin Aerosol

Passed Failed Comments: _____

TEST ADMINISTRATOR

Name: Ulken Auguste Date: 10/4/19

Signature: Ulken Auguste Next Test Due Date: _____

*Qualitative fit tests are valid for contaminant exposure levels less than ten (10) times the respective occupational exposure limit.

Appendix B

Contractor's License and Workers' Certifications



State of Connecticut

Lookup Detail View

Name

Name
SELECTIVE SERVICE LLC

License Information

lookup

License Type	License Number	Expiration Date	Granted Date	License Name	License Status		Licensure Actions or Pending Charges
Asbestos Contractor	655	07/31/2020	07/23/2012	SELECTIVE SERVICE LLC	ACTIVE	CURRENT	None

Generated on: 8/10/2020 2:27:38 PM

EMPLOYER'S COPY

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME

SHAUN M MICHAUD

VALIDATION NO.
03-779565

CERTIFICATE NO.
006576

CURRENT THROUGH
09/30/20

PROFESSION
ASBESTOS ABATEMENT SUPERVISOR

SIGNATURE


COMMISSIONER

Certificate of Training

Awarded to

SHAUN MICHAUD

*For successful completion of a 40 Hour, 5 Day
Principles and Practices of Asbestos Abatement Course
for Asbestos Supervisor
FEBRUARY 8,9,12,13,14, 2018*

This training was approved and given in accordance with
Regulations for Connecticut State Agencies
RCSA 20-440 - 1-9 and meets the requirements
of the EPA Revised MAP under TSCA Title II of 4/4/94.

Presented by

**Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, CT 06340 (800) 247-7746**

Certificate Number: ASI26465

Exam Grade: 82

Exam Date: 02/14/2018

Expiration Date: 02/14/2019



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director

Richard Haffey, Training Director

Certificate of Training

Awarded to

SHAUN MICHAUD

*For successful completion of a 8 (eight) Hour
Asbestos Site Supervisor Refresher Course*

JANUARY 21, 2020

This training was approved and given in accordance with
Regulations for Connecticut State Agencies
RCSA 20-440 - 1-9 and RCSA 20-441 and meets the
requirements of the EPA Revised MAP under TSCA Title II of 4/4/94.

Presented by

**Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, CT 06340 (800) 247-7746**

Certificate Number: ASR27983

Exam Date: 01/21/2020

Expiration Date: 01/21/2021



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director

Richard Haffey, Training Director

Patient: Michaud, Shaun M.

DOB: 09/20/1978

Service Date: 07/15/2019

Concentra Medical Centers (CT)
701 Main Street EAST HARTFORD, CT 06108
Phone: (860) 289-5561 Fax: (860) 291-1895

Written Medical Opinion for Respirator Use

(Provide a copy to employee and employer, store in chart)

Medical evaluation for respirator use was completed in accordance with 29 CFR 1910.134.

(La evaluación médica y opinión para el uso de respiradores se completó de acuerdo con 29 CFR 1910.134)

This evaluation indicates employee may wear the type(s) of respirator(s) checked below. There are no recommended limitations upon the workplace conditions in which the respirator will be used unless remarked in *Comments* section. Please note: If additional/new types of respirator(s) are utilized in the future, a new respirator medical clearance is required. *(Esta evaluación indica que el empleado puede usar el tipo (s) de respirador (es) que se muestra a continuación. No hay limitaciones recomendadas sobre las condiciones del lugar de trabajo en las que se usará el respirador, a menos que se indique lo contrario en la sección Comentarios. Tenga en cuenta: Si en el futuro se utilizan más / nuevos tipos de respiradores, se requiere una nueva autorización médica para respiradores.)*

- Disposable N, P or R, 95, 99 or 100 filtering face piece (Desechable pieza facial filtrante)
- Half face respirator with particulate gas/vapor cartridges (Respirador de media cara con cartuchos de partículas de gas / vapor)
- Full face respirator with particulate gas/vapor cartridges (Respirador de cara completa con cartuchos de gas / vapor de partículas)
- Self contained breathing apparatus (SCBA) (Un equipo de respiración autónomo)
- Supplied air (loose fitting) (Aire suministrado (ajuste suelto))

The employee may not wear a respirator. (El empleado no puede usar un respirador.)

The following restrictions or limitations are indicated: (Se indican las siguientes restricciones o limitaciones)

- Positive air purifying respirator (PAPR). (Respirador purificador de aire positivo)
- No emergency response or immediately dangerous to life and health (IDLH) work
(Trabajo sin respuesta de emergencia o peligro inmediato para la vida y la salud)
- Other (otro): _____

The employee has been informed of the results of this evaluation and any medical conditions which require further examination or treatment and they were provided with a copy of this written statement: (El empleado ha sido informado de los resultados de esta evaluación y de cualquier condición médica que requiera un examen o tratamiento adicional y se les proporcionó una copia de esta declaración por escrito:)

- in person (En persona)
- in writing (Questionnaire review only, without the employee present)
(escrito (solo una revisión del Cuestionario, empleado no presente))

This medical evaluation expires on (Esta evaluación médica expira el): 7/15/2020

Comments: (Comentarios)

- Eyewear conversion kit needed. (Se necesita un kit de conversión de gafas.)
- Facial hair needs to be shaved to assure a tight seal on tight fitting masks.
(El vello facial debe afeitarse para asegurar un cierre hermético en las máscaras ajustadas.)
- Other (otro): _____

Clinician name printed J Burcher MD

Date 7/15/2020

Clinician Signature J Burcher MD

RESPCLEAREXAM-2

Patient Information

Name MICHAUD
 ID 049689421
 Age 39
 Height 5 ft 10 in
 Weight 160 lbs, BMI 23.2
 Gender MALE
 Ethnic CAUCASIAN
 Smoker YES
 Asthma NO

Test Information

Test Date/Time 05/22/2018 01:03pm
 Post Time ---
 Test Mode DIAGNOSTIC
 Interpretation GOLD/Hardie
 Predicted Ref NHANES III
 Value Select BEST VALUE
 Tech ID
 Automated QC ON
 BTPS (INEX) ---/1.02

Test Results

Your FEV1 is 92% Predicted. Your Lung Age is 51


Parameter	Pre-Test					%Pred
	Best	Trial7	Trial8	Trial2	Pred	
FVC[L]	5.03	5.03	4.37	4.06*	5.26	95
FEV1[L]	3.86	3.86	3.34*	3.39*	4.20	92
FEV1/FVC[%]	76.8	76.8	76.6	83.4	80.0	96
PEF[L/min]	516.8	516.8	412.7*	479.0	607.2	85
FEF25-75[L/s]	3.39	3.39	2.91	3.28	3.99	85
FET[s]	8.25	8.25	7.16	5.56	--	--

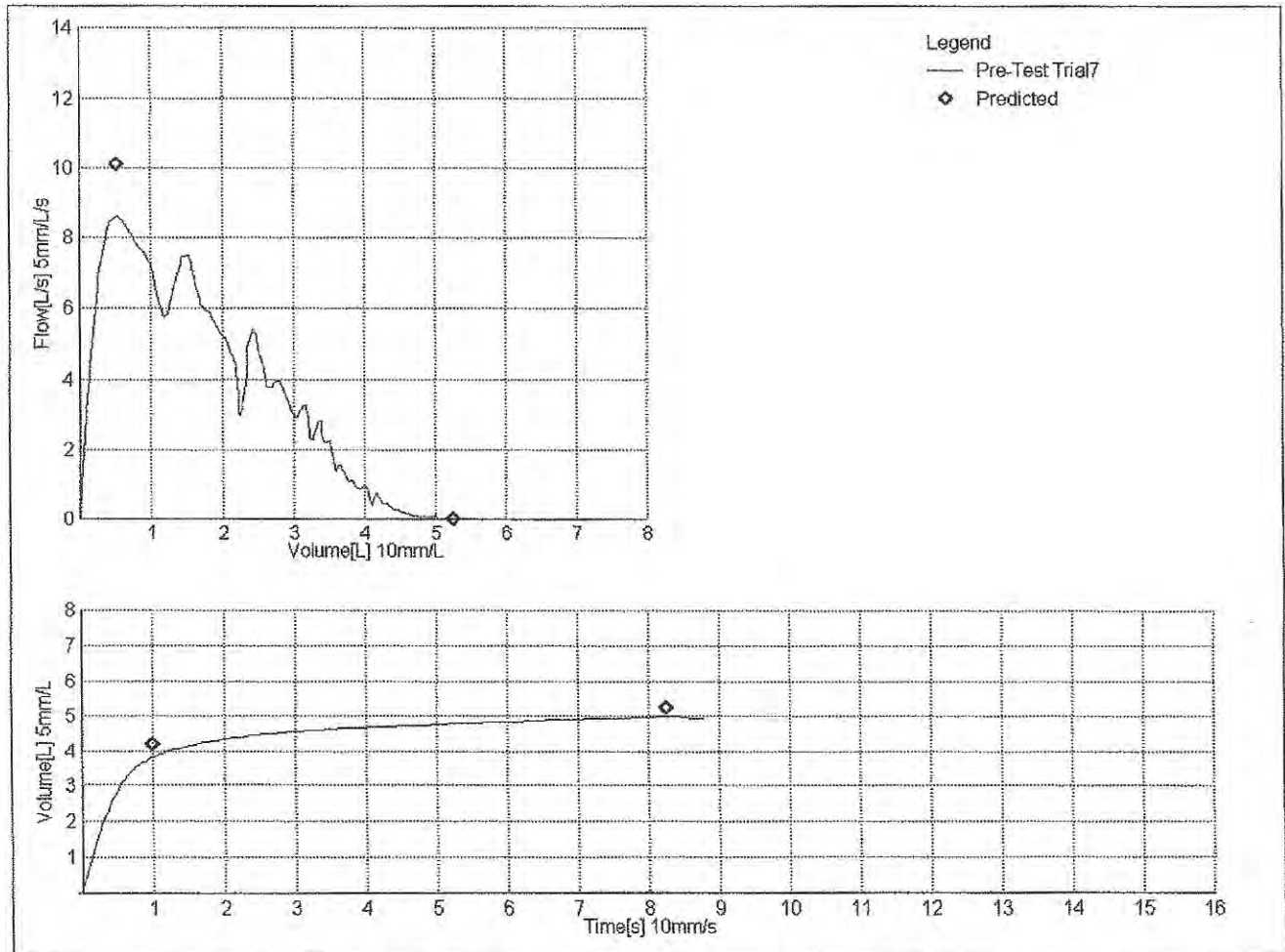
* Indicates Below LLN or Significant Post Change

Pre-Test FEV1 Var=0.47L 12.2%; FVC Var=0.66L 13.1%; Session Quality D

Interpretation Normal Spirometry

Caution: Maneuvers Not Reproducible - Interpret With Care.

05/22/18






STEVEN J MICHAUD
338 GOODWIN ST
EAST HARTFORD CT 06108-1214

Dear STEVEN J MICHAUD,

Attached you will find your validated certificate for the coming year. Should you have any questions about your certificate renewal, please do not hesitate to write or call:

Department of Public Health
P.O. Box 340308
M.S.#12MQA
Hartford, CT 06134-0308

(860) 509-7603
oplc.dph@ct.gov
www.ct.gov/dph/license

Sincerely,

RENÉE D. COLEMAN-MITCHELL, MPH, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

EMPLOYER'S COPY

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
STEVEN J MICHAUD

VALIDATION NO. 03-768343 CERTIFICATE NO. 006260 CURRENT THROUGH 09/30/20

PROFESSION
ASBESTOS ABATEMENT SUPERVISOR

SIGNATURE COMMISSIONER

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A
ASBESTOS ABATEMENT SUPERVISOR

STEVEN J MICHAUD

CERTIFICATE NO.
006260

CURRENT THROUGH
09/30/20

VALIDATION NO.
03-768343

SIGNATURE COMMISSIONER

INSTRUCTIONS:

1. Detach and sign each of the cards on this form
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

WALLET CARD

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
STEVEN J MICHAUD

VALIDATION NO. 03-768343 CERTIFICATE NO. 006260 CURRENT THROUGH 09/30/20

PROFESSION
ASBESTOS ABATEMENT SUPERVISOR

SIGNATURE COMMISSIONER



1000474-0000476-0000001 of 0000001-C01-at1d00101-1264-00476

Superior Industries LLC

**SUPERIOR
INDUSTRIES L.L.C.**



Committed to a Clean Environment

Certificate of Completion
Awarded to

Steven Michaud

(DOB 09-20-1986)

Has completed a 40 Hour 5 Day Approved Course of Instruction in
Asbestos Abatement Removal and Disposal (AARD)

Supervisor Initial Training

November 14 – November 18, 2016

Required by OSHA and the EPA Revised MAP for accreditation under
the TSCA Title 11 as self-certified by Trainer 8/5/97
Required by Connecticut Regulations 19a-332-21



SUPERIOR INDUSTRIES LLC

342 Carter Lane
Southington, CT. 06489
860-620-1133 (voice)
860-620-1134 (fax)

Examination Date: November 18, 2016
Expiration Date: November 18, 2017
Certificate Number: ASI-SM-09-20-86-16

Earl R. Clark, Training Director

Certificate of Training

Awarded to

STEVEN MICHAUD

*For successful completion of a 8 (eight) Hour
Asbestos Site Supervisor Refresher Course*

JANUARY 21, 2020

This training was approved and given in accordance with
Regulations for Connecticut State Agencies
RCSA 20-440 - 1-9 and RCSA 20-441 and meets the
requirements of the EPA Revised MAP under TSCA Title II of 4/4/94.

Presented by

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, CT 06340 (800) 247-7746

Certificate Number: ASR27984

Exam Grade: 90

Expiration Date: 01/21/2021



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director

Richard Haffey, Training Director

Concentra Medical Centers (CT)

701 Main Street EAST HARTFORD, CT 06108
Phone: (860) 289-5561 Fax: (860) 291-1895

EMPLOYER AUTHORIZATION AND INFORMATION FOR RESPIRATORY EVALUATION

EMPLOYER TO COMPLETE THE FOLLOWING :

Employee Name: Michaud, Steven

Employer: Selective Service LLC

Check Type of Respirator(s) To Be Used (Check ALL that apply)

Air-purifying (non-powered) Air-purifying (powered)
 Atmosphere supplying Respirator
 Combination air-line and SCBA
 Continuous-Flow Respirator
 Supplied-Air Respirator
 Open Circuit SCBA Closed Circuit SCBA
 Dust Mask 1/2 Face with Canisters Full Face with Canisters

Make: _____ Model: _____ Cartridge: _____

Address: 338 Goodwin Street
E HARTFORD CT 06108
Employee SSN: XXX-XX-6976

Extent of Usage (Check ALL that apply)

On a daily basis _____ Total Hours
 Occasionally - but not more than twice a week _____ Total Hours
 Rarely - or for Emergency situations only _____ Total Hours

Expected Physical Effort Required (Check ALL that apply)

Light Moderate Heavy

Exposure to Hazardous Materials (Check ALL that apply)

<input type="checkbox"/> Arsenic	<input type="checkbox"/> Benzene
<input type="checkbox"/> Coke Oven	<input type="checkbox"/> Cotton Seed / Dust
<input type="checkbox"/> Cadmium	<input type="checkbox"/> Formaldehyde
<input type="checkbox"/> Methylene Chloride	<input type="checkbox"/> Lead
<input type="checkbox"/> Textiles	<input type="checkbox"/> Chromium

Other(s): _____
EVALUATION AUTHORIZATION BY: _____
Signature of Employer Representative

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

DO NOT WRITE BELOW THIS LINE

PLHCP¹ WRITTEN STATEMENT for RESPIRATORS (EMPLOYER)

PHYSICIAN WILL COMPLETE THE FOLLOWING

This report may contain confidential medical information and is intended for the designated employer contact only. The Americans with Disabilities Act (ADA) imposes very strict limitations on the use of information obtained during physical examination of qualified individuals with disabilities. All information must be collected and maintained on separate forms, in separate files, and must be treated as a confidential medical record, with the following exceptions:

- Supervisors and managers may be informed about necessary restrictions on the work or duties of an employee and necessary accommodations.
- First aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment.

Based upon my findings, I have determined that this individual **(Check ALL that apply)**

Employee must schedule a medical examination with Concentra Medical Centers (CT) prior to respirator approval and usage.

Class I - No Restrictions on Respirator Use To be used for Emergency Response or Escape Only Other: _____

Class II - Some Specific Use Restrictions

Class III - Respirator Use is NOT PERMITTED

Further Testing / Evaluation is Required. ²

Fit Test Required Fit Test Performed Satisfactorily

Fit Test Performed Unsatisfactorily Fit Test NOT Performed at: Concentra Medical Centers (CT)

Special prescription eyewear needed to accommodate respirator Special prescription eyewear needed to accommodate respirator

Facial hair needs to be shaved to assure tight seal on certain face masks.

¹Physician or other Licensed Healthcare Professional
²Employee must seek further medical evaluation by a private physician who must submit a report to Concentra Medical Centers (CT) of his/her findings to

(Check ALL that apply)

The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.

The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees would be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.

In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

Joanne Burdick
Physician's Signature
050467 (CT)
Physician's License Number (Optional in Most States)

Joanne Burdick
Physician's Name (Printed)
7/9/19
Date of Exam
7/9/20
Expires On

Concentra Medical Centers (CT)

701 Main Street EAST HARTFORD, CT 06108
Phone: (860) 289-5561 Fax: (860) 291-1895

PLHCP¹ WRITTEN STATEMENT for RESPIRATORS (EMPLOYEE)

Service Date: 07/09/2019

Employee SSN: XXX-XX-6976

Employee Name: Michaud, Steven

Address: 338 Goodwin Street

E HARTFORD CT 06108

Employer: Selective Service LLC

You were evaluated in this office of your medical status related to your physical capability to wear a respirator. (Check one that applies)

- There were no abnormal findings that would hamper your ability to perform your job duties while wearing a respirator.
- The abnormal findings listed below were not related to wearing a respirator but should be reported to your personal physician for further evaluation.

Based upon the results of this evaluation it is my opinion that you: (Check ALL that apply)

- ARE qualified to wear a respirator.
- Have the following restrictions concerning respirator usage: _____
- ARE NOT qualified to wear a respirator.
- Require further testing by your private physician who must submit a written report of his/her findings to Concentra Medical Centers (CT) so that a final decision on your ability to wear a respirator can be made.
- Must wear Special prescription eye-wear needed to accommodate respirator.
- Must use an Eye glass conversion kit.
- May need to shave Facial hair to assure tight seal on certain face masks.
- Need to stop smoking.

(Check ALL that apply)

- The above individual HAS been examined for respirator fitness in accordance with 29 CFR 1910.134. This limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- The above individual HAS NOT been examined by me for respirator fitness. The employee's medical evaluation consisted of a review of OSHA's Medical Evaluation Questionnaire in Appendix C Part A Section 2. In accordance with 29 CFR 1910.134, this limited evaluation is specific to respirator use only. Employees should be instructed to report any difficulties in using respirators or change of any physical status to their supervisor or physician. This evaluation included the Respiratory Questionnaire outlined in 29 CFR 1910.134.
- In accordance with specific OSHA requirements, I have informed the above named individual of the results of this evaluation and of any medical conditions resulting from exposures that may require further explanation or treatment. Where applicable, the above named individual has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos, lead and/or other chemical exposure(s).

Respirators must be properly selected based on the containment and concentration levels to which the worker will be exposed. Failure to follow the use and fitting instruction and warnings for proper use contained on the respirator packaging and/or failure to wear the respirator during all times of exposure can reduce the respirator's effectiveness and result in sickness or death. Wearer must be trained in the proper care of any respirator. Refer to product literature and packaging for specific information regarding fit, use and/or limitations.

Joanne Burdette MD
PLHCP Signature
Joanne Burdette MD
PLHCP Name (printed)

7/9/20
Employee's Signature
Expiration Date

¹Physician or other Licensed Healthcare Professional

To be maintained in the employee's file with a copy to the employee

Patient Information

Name MICHAUDSTEVEN
 ID 043826976
 Age 32
 Height 5 ft 7 in
 Weight 195 lbs, BMI 30.6
 Gender MALE
 Ethnic CAUCASIAN
 Smoker NO
 Asthma NO

Test Information

Test Date/Time 07/09/2019 11:13am
 Post Time ---
 Test Mode DIAGNOSTIC
 Interpretation GOLD/Hardie
 Predicted Ref NHANES III
 Value Select BEST VALUE
 Tech ID
 Automated QC ON
 BTPS (IN/EX) --/ 1.02

Test Results

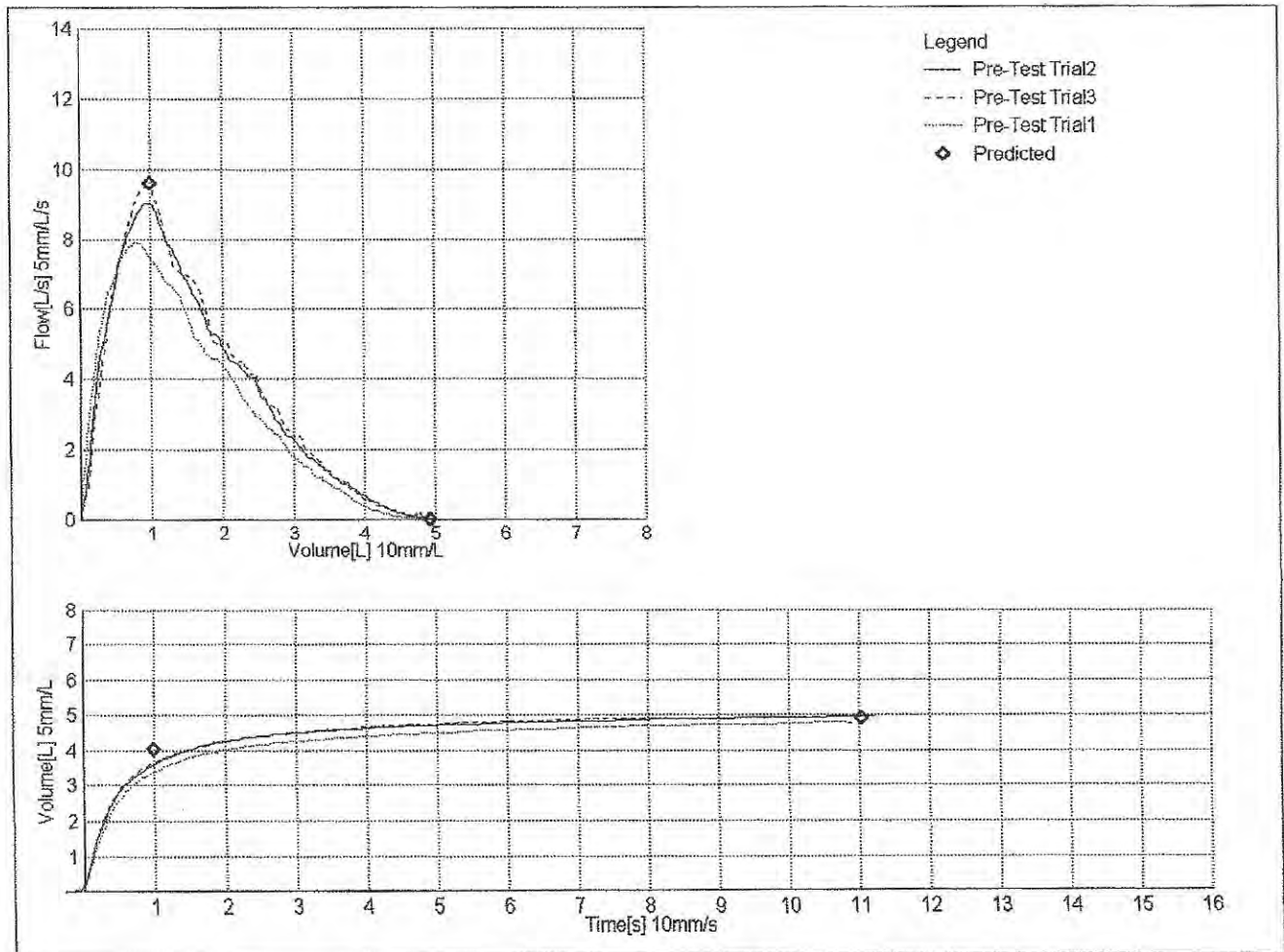
Your FEV1 is 92% Predicted

Parameter	Pre-Test					
	Best	Trial2	Trial3	Trial1	Pred	%Pred
FVC[L]	4.99	4.99	4.94	4.81	4.94	101
FEV1[L]	3.70	3.86	3.70	3.44	4.03	92
FEV1/FVC[%]	74.1	73.3	74.9	71.6*	81.4	91
PEF[L/min]	543.3	543.3	571.0	476.7	574.8	95
FEF25-75[L/s]	2.66	2.66	2.87	2.38*	4.09	85
FET[s]	11.03	11.03	8.04	10.59	--	--

* Indicates Below LLN or Significant Post Change

Pre-Test FEV1 Var=0.04L 1.1%; FVC Var=0.06L 1.1%; Session Quality A
 Interpretation Normal Spirometry

Handwritten signature



Appendix C

CTDPH Asbestos Abatement Notification Form



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH ASBESTOS ABATEMENT NOTIFICATION FORM

STATE USE ONLY

Post Mark Date	
Check #	
Amount	\$
Transmittal #	
Record #	

This form is to be completed and postmarked or hand delivered to the Connecticut Department of Public Health at least ten (10) days prior to the start of asbestos abatement, as required by the Regulations of Connecticut State Agencies, Section 19a-332a-3. In case of an emergency, this form is to be completed and postmarked within one (1) working day following the start of asbestos abatement. Faxed originals are not acceptable. Revisions may be faxed unless an additional fee payment is due.

1. TYPE OF NOTIFICATION:

A. NEW B. BLANKET C. CANCELLATION / POSTPONED C P
 D. REVISED (ITEMS REVISED) REVISION #
 E. EMERGENCY DESCRIBE NATURE OF EMERGENCY

2. ABATEMENT CONTRACTOR:

NAME: Selective Service LLC LICENSE # 53.000655
 ADDRESS: 555 Main Street
 CITY: Manchester STATE: CT ZIP: 06040
 PHONE # 860 649-5500 CONTACT PERSON: Joel Mrosek

3. FACILITY (OWNER'S NAME) OWNER/OPERATOR:

NAME: Town of Hebron
 ADDRESS: 15 Gilead Street
 CITY: Hebron STATE: CT ZIP: 06248
 PHONE # 860 228-5971 CONTACT PERSON: Andrew Tierney, Town Manager

4. NAME OF FACILITY:(FILL IN ADDRESS WHERE ABATEMENT PROJECT IS LOCATED)

ADDRESS: 92 Church Street (Hebron Elem School)
 CITY: Hebron STATE: CT ZIP: 06248

5.(A) ABATEMENT START DATE: 6/15/20 5.(B) COMPLETION DATE: 8/20/20
 6.(B) Month/Day/Year format Month/Day/Year format

(#6 only) TO BE COMPLETED IF PROJECT IS GREATER THAN 160 SQUARE FEET

Notification Fee Due: \$100.00 + 1% total asbestos abatement cost \$213.00

6. TOTAL ABATEMENT PROJECT COST: 11,300 *REVISED COST (ONLY FOR REVISIONS):

7. USE OF FACILITY:

A. SCHOOL (K-12)	<input checked="" type="checkbox"/>	B. PUBLIC BUILDING	<input type="checkbox"/>	C. MANUFACTURING	<input type="checkbox"/>	D. OFFICE	<input type="checkbox"/>	E. COLLEGE	<input type="checkbox"/>
F. COMMERCIAL	<input type="checkbox"/>	G. CHURCH/SYNAGOGUE	<input type="checkbox"/>	H. RESIDENTIAL, # OF DWELLINGS	<input type="text"/>	I. OTHER	<input type="text"/>	<input type="text"/>	<input type="text"/>
(I. SPECIFY)									



ADDRESS: _____

TOWN: _____

8. BUILDING DATA:

SQUARE FEET: 38,500 NUMBER OF FLOORS: 1 AGE: 1947

9. ABATEMENT CLASSIFICATION:

ORDERED DEMO (AGENCY ISSUING ORDER) MUST ATTACH COPY OF DEMO ORDER

RENOVATION DEMOLITION _____

10. ABATEMENT TECHNIQUE:

A. FULL CONTAINMENT WITH NEGATIVE AIR B. ALTERNATIVE WORK PRACTICE (PRE-APPROVAL REQUIRED)

(IF AWP, include) Project Designer & LICENSE # _____

C. EXTERIOR ABATEMENT _____ D. SPOT REPAIR (>25 SQ. FT. TOTAL) _____

11. ABATEMENT METHOD:

A. REMOVAL B. ENCAPSULATION _____ C. ENCLOSURE _____

12. TYPE OF DECONTAMINATION SYSTEM:

A. CONTIGUOUS _____ B. REMOTE _____ C. BOTH

13. TYPE AND AMOUNT OF ASBESTOS TO BE ABATED: (REPORTED IN SQUARE FEET)

FRIABLE MATERIAL

NONFRIABLE MATERIAL

A. SPRAYED /TROWELED ON: _____	Category I
B. BOILER INSULATION: _____	I. FLOOR COVERINGS/TILES: <u>Caulking 40'</u>
C. TANK INSULATION: _____	J. ROOFING, SPECIFY: _____
D. BREECHING INSULATION: _____	K. GASKETS, PACKINGS: _____

Category II

E. DUCT INSULATION: _____	L. TRANSITE BOARD: _____
F. CEILING TILES: _____	M. OTHER, SPECIFY: _____
G. OTHER, SPECIFY: _____	

H.* PIPE INSULATION:	<u>Use conversion table</u>	Total Square Feet
(Pipe diameter) "	Multiply LF by CF	= Total Square Feet
3"	133 * 1	133

14. WASTE DISPOSAL SITE (IF MULTIPLE SITES, LIST SEPARATELY)

NAME:	Minerva Enterprises
ADDRESS:	9000 Minerva Road
CITY, STATE, ZIP:	Waynesburg, OH 44688
OWNER, OPERATOR:	FRANK STUFANO

15. HAULER/ WASTE TRANSPORTER

NAME:	Red Technologies
ADDRESS:	10 Northwood Drive
CITY, STATE, ZIP:	Bloomfield, CT 06002

Signature and Title of Person Completing this Form: _____

Mail to:
DPH
ASBESTOS PROGRAM
410 CAPITOL AVENUE, MS # 51 AIR
PO BOX 340308
HARTFORD CT 06134-0308

Appendix D

PCM Final Air Clearance Reports



FUSS & O'NEILL

146 Hartford Road, Manchester, CT 06040 (860) 646-2469

PCM Air Monitoring Worksheet For Asbestos Analysis

Form 7400-05
Edition June 2019
Supersedes previous editions

Project Name: Hebron Elementary School
1963 Boys Laundry
Project Number: 20160168-030
Project Manager: K. Pene
Project Address: 92 Church St, Hebron

Rotometer Number: 101774 Cassette Lot#: 20181115
Rotometer Cal. Date: 2-12-20
Microscope Number: 101146
Phase Ring Aligned?: 8/N
HSE/NPL checked: 8/N

Sampler Name: Scott Masly
Analyst Name: Scott Masly AAR# 7652
Analyst Signature: [Signature]
Sample Date: 6/22/20 Analysis Date: 6/22/20

Sample ID Number	Sample Location	Activity Code/Comment	Sample Time		Sample Duration (Minutes)	Flow Rate (LPM)			Total Volume (Liters)	Limit of Det. Fib/cc Total Vol.)	Fiber Count Fib/Flds	Fiber Density (Fib/mm ²)	Fiber Conc. (Fibers/cc)
			On	Off		Pre	Post	Avg.					
06-22-20-01	Field Blank #1		Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.										
02	Field Blank #2		Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.										
08	IC-1963 Boys Laundry	4	1112	1244	92	13.4	13.4	13.4	1251.20	1.002	0/100	<7.01	<1.002
09	IC-1963 Boys Laundry	4	1112	1244	92	13.4	13.4	13.4	1251.20	1.002	0/100	<7.01	<1.002
10	IC-1963 Boys Laundry	4	1112	1244	92	13.4	13.4	13.4	1251.20	1.002	4/100	<7.01	<1.002
11	IC-1963 Boys Laundry	4	1113	1245	92	13.4	13.4	13.4	1251.20	1.002	6/100	7.64	1.0024
12	IC-1963 Boys Laundry	4	1113	1245	92	13.4	13.2	13.4	1251.20	1.002	45/100	<7.01	<1.002
4-22-20-04-10	Duplicate Count										4/100	<7.01	<1.002

IC	Inside Containment
OCB	Outside Critical Barrier
Decon	Decontamination Facility

Range	Intra Lab Sr	Inter Lab Sr
1 (5-20 fibers/100 fields)	0.40	0.50
2 (>20-50 Fibers/100 fields)	0.45	0.39
3 (>50 Fibers/100 fields)	0.26	0.35

Project Activity:	
Code	Type
1	Background
2	Setup
3	During
4	Clearance
5	Environmental
6	Personal
7	

Reference Method: NIOSH 7400 Issue 2, 8/15/94 Method Limit of Detection: 5.5 Fibers/100 Fields

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

FIBER DENSITY (Fibers/mm²) = $\frac{\text{SAMPLE fibers/field} - (\text{Average BLANK fibers/field})}{(0.00785 \text{ mm}^2 / \text{field})}$

CONCENTRATION (fibers/cc) = $\frac{\text{SAMPLE fibers/field} - (\text{Average BLANK fibers/field}) \times (385 \text{ mm}^3 / \text{liter})}{(0.00785 \text{ mm}^3 / \text{field}) \times \text{liters} \times 1000 \text{ cc/liter}}$



FUSS & O'NEILL

146 Hartford Road, Manchester, CT 06040 (860) 646-2469

PCM Air Monitoring Worksheet For Asbestos Analysis

Form 7400-05
Edition June 2019
Supersedes previous editions

Project Name: Helen Elementary School
1963 Girls Laundry
Project Number: 20160168-020
Project Manager: K. Pace
Project Address: 72 Church St, Helen

Rotometer Number: 101754 Cassette Lot#: 20181115
Rotometer Cal. Date: 2-12-20
Microscope Number: 101140
Phase Ring Aligned? X/N
HSE/NPL checked X/N

Sampler Name: Scott Mung
Analyst Name: Scott Mung AAR# 7018
Analyst Signature: [Signature]
Sample Date: 6/22/20 Analysis Date: 6/22/20

Sample ID Number	Sample Location	Activity Code/Comment	Sample Time		Sample Duration (Minutes)	Flow Rate (LPM)			Total Volume (Liters)	Limit of Det. Fib/cc (-2.7/ Total Vol.)	Fiber Count Fib/Flds	Fiber Density (Fib/mm ²)	Fiber Conc. (Fibers/cc)
			On	Off		Pre	Post	Avg.					
06-22-20-01	Field Blank #1		Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.										
02	Field Blank #2		Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.										
03	FC - 1963 Girls Laundry		1016	1147	91	13.4	13.2	13.4	1219.40	1.002	0/100	67.01	6.002
04	FC - 1963 Girls Laundry		1016	1147	91	13.4	13.2	13.4	1219.40	1.002	0/100	67.01	6.002
05	FC - 1963 Girls Laundry		1017	1148	91	13.4	13.4	13.4	1237.60	1.002	5/100	67.01	6.002
06	FC - 1963 Girls Laundry		1017	1148	91	13.4	13.4	13.4	1237.60	1.002	7.5/100	9.55	1.0030
07	FC - 1963 Girls Laundry		1017	1148	91	13.4	13.4	13.4	1237.60	1.002	5.5/100	7.01	1.0022
06-22-20-05	Duplicate Count										8/100	10.19	1.0032

Reference Method: NIOSH 7400 Issue 2, 8/15/94 Method Limit of Detection: 5.5 Fibers/100 Fields

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

FIBER DENSITY (Fibers/mm²) = (SAMPLE.fibers/field) - (Average BLANK fibers/field) (0.00785mm²/field)

CONCENTRATION (fibers/cc) = (SAMPLE.fibers/field) - (Average BLANK fibers/field) x (385) .mm²/field (0.00785mm²/field) x liters x 1000 cc/liter

IC	Inside Containment
OCB	Outside Critical Barrier
Decon	Decontamination Facility

Range	Intra Lab Sr	Inter Lab Sr
1 (5-20 fibers/100 fields)	0.40	0.50
2 (>20-50 fibers/100 fields)	0.45	0.39
3 (>50 fibers/100 fields)	0.26	0.35

Project Activity:

Code	Type
1	Background
2	Setup
3	During
4	Clearance
5	Environmental
6	Personal
7	



PCM Air Monitoring Worksheet For Asbestos Analysis

146 Hartford Road, Manchester, CT 06040 (860) 646-2469

Project Name: Hebron Elementary School Rotometer Number: 101817 Cassette Lot#: _____
 Sampler Name: Paul Sakonig Analyst Name: Paul Sakonig AAR# 7297
 Project Number: 20160108.W30 Task # _____ Microscope Number: 100782
 Project Manager: Hallebeek Paul Phase Ring Aligned? YN YN
 Project Address: 92 Church St Hebron CT HSE/NPL checked YN YN
 Analyst Signature: Paul Sakonig Analysis Date: 1/25/20

Sample ID Number	Sample Location	Activity Code/Comment	Sample Time		Sample Duration (Minutes)	Flow Rate (LPM)		Total Volume (Liters)	Limit of Det. Fib/cc (=2.7/Total Vol.)	Fiber Count Fib/Flds	Fiber Density (Fib/mm ²)	Fiber Conc. (Fibers/cc)
			On	Off		Pre	Avg.					
6.25 PPS 01	Field Blank #1	Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.										
02	Field Blank #2											
03	Front Left New Room	4	10:30	12:00	90	15	15	1350	.0020	12/100	15.3	.0044
04	Right Front	4	10:31	12:01	90	14.8	14.8	1332	.0020	10/100	12.7	.0037
05	Center	4	10:32	12:02	90	14.8	14.8	1332	.0020	14/100	17.8	.0051
06	Left rear	4	10:33	12:03	90	15	15	1350	.0020	11/100	14.0	.0040
07	Right rear	4	10:34	12:04	90	15	15	1350	.0020	15/100	19.1	.0054
	Duplicate Count									18/100	22.9	10065

Reference Method: NIOSH 7400 Issue 2, 8/15/94 Method Limit of Detection: 5.5 Fibers/100 Fields

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

FIBER DENSITY (Fibers/mm²) = (SAMPLE fibers/field) - (Average BLANK fibers/field) (0.00785mm²/field)

CONCENTRATION (fibers/cc) = (SAMPLE fibers/field) - (Average BLANK fibers/field) x (385)mm²/filter (0.00785mm²/field) x liters x 1000 cc/liter

IC	Inside Containment
OCB	Outside Critical Barrier
Decon	Decontamination Facility

Range	Intra Lab Sr	Inter Lab Sr
1 (5-20 fibers/100 fields)	0.40	0.50
2 (>20-50 Fibers/100 fields)	0.45	0.39
3 (>50 Fibers/100 fields)	0.26	0.35

Project Activity:

Code	Type
1	Background
2	Setup
3	During
4	Clearance
5	Environmental
6	Personal
7	



146 Hartford Road, Manchester, CT 06040 (860) 646-2469

PCM Air Monitoring Worksheet For Asbestos Analysis

Project Name: Hebron Elementary School Rotometer Number: 10882 Cassette Lot#: _____
Electrician's Closet in 88 South Rotometer Cal. Date: 5/14/20
 Project Number: 2016018-WSA Task # _____ Microscope Number: 100782
 Project Manager: Hathleen Pany Phase Ring Aligned? ON
 Project Address: 92 Church St Hebron, CT HSE/NPL checked ON
 Sampler Name: Paul Bakeman Analysis Date: 6/25/20
 Analyst Name: Paul Bakeman AAR# 3247
 Analyst Signature: Paul Bakeman

Sample ID Number	Sample Location	Activity Code/ Comment	Sample Time		Sample Duration (Minutes)	Flow Rate (LPM)			Total Volume (Liters)	Limit of Det. Fib/cc (=2.7/Total Vol.)	Fiber Count Fib/Flds	Fiber Density (Fib/mm ²)	Fiber Conc. (Fibers/cc)
			On	Off		Pre	Post	Avg.					
6-25-PB-02	Field Blank #1	Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.											
01	Field Blank #2												
13	Left front - rear Room	4	10:50	12:20	90	14.7	14.7	14.7	1323	.0020	6/100	7.6	.0022
14	Right front	4	10:51	12:21	90	15	15	15	1390	.0020	7/100	8.9	.0025
15	Center	4	10:52	12:22	90	14.7	14.7	14.7	1323	.0020	5/100	2.7	<.0020
16	Left rear	4	10:53	12:23	90	15	15	15	1350	.0020	4/100	2.7	<.0020
17	Right rear	4	10:54	12:24	90	15	15	15	1350	.0020	5/100	2.7	<.0020
	Duplicate Count										4/100	2.7	<.0020

Reference Method: NIOSH 7400 Issue 2, 8/15/94 Method Limit of Detection: 5.5 Fibers/100 Fields

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

FIBER DENSITY (Fibers/mm²) = (SAMPLE fibers/field) - (Average BLANK fibers/field) / (0.00785mm²/field)

CONCENTRATION (fibers/cc) = (SAMPLE fibers/field) - (Average BLANK fibers/field) x (385) mm²/filter / (0.00785mm²/field) x liters x 1000 cc/liter

IC	Inside Containment
OCB	Outside Critical Barrier
Decon	Decontamination Facility

Range	Intra Lab Sr	Inter Lab Sr
1 (5-20 fibers/100 fields)	0.40	0.50
2 (>20-50 Fibers/100 fields)	0.45	0.39
3 (>50 Fibers/100 fields)	0.26	0.35

Project Activity:

Code	Type
1	Background
2	Setup
3	During
4	Clearance
5	Environmental
6	Personal
7	



PCM Air Monitoring Worksheet For Asbestos Analysis

146 Hartford Road, Manchester, CT 06040 (860) 646-2469

Project Name: Hebron Elementary School Rotometer Number: 101817 Cassette Lot#: _____
Bulbrook #9 Rotometer Cal. Date: 5/4/00 Analyst Name: Paul B. Heman AAR# 7297
 Project Number: 30160630W30 Task # _____ Microscope Number: 100782 Analyst Signature: Paul B. Heman
 Project Manager: William Pine Phase Ring Aligned? Q/N Sample Date: 4/29/00 Analysis Date: 4/29/00
 Project Address: 97 Church St Hebron CT HSE/NPL checked YN

Sample ID Number	Sample Location	Activity Code/ Comment	Sample Time		Sample Duration (Minutes)	Flow Rate (LPM)			Total Volume (Liters)	Limit of Det. Fib/cc (=2.7/Total Vol.)	Fiber Count Fib/Flds	Fiber Density (Fib/mm ²)	Fiber Conc. (Fibers/cc)	
			On	Off		Pre	Post	Avg.						
6.29PB 01	Bulbrook #9 Field Blank #1	Submit at least 2 field blanks or 10% of the number of samples collected in 1 work shift.	4	10:50	12:20	15	15	15	1350	.002	0/10	0	0.0043	
6.29PB 02	Field Blank #2		4	10:51	12:10	15.3	15.3	15.3	1377	.002	0/10	0	0.0032	
03	Near Down		4	10:52	12:02	15	15	15	1350	.002	13/10	13.3	0.0047	
04	Left Front		4	10:53	12:02	15	15	15	1350	.002	13/10	13.3	0.0051	
05	Center		4	10:54	12:02	15.3	15.3	15.3	1377	.002	16/10	16.5	0.0036	
06	Left Rear													
07	Right Rear													
6.29PB	Duplicate Count										16/10	20.3	0.0063	

Reference Method: NIOSH 7400 Issue 2, 8/15/94 Method Limit of Detection: 5.5 Fibers/100 Fields

Sample Type: 25 mm 3 piece 0.8µ mixed cellulose ester PCM Air Monitor

FIBER DENSITY (Fibers/mm²) = (SAMPLE fibers/field) - (Average BLANK fibers/field) (0.00785mm²/field)

CONCENTRATION (fibers/cc) = (SAMPLE fibers/field) - (Average BLANK fibers/field) x (385) mm²/filter (0.00785mm²/field) x liters x 1000 cc/liter

IC	Inside Containment
OCB	Outside Critical Barrier
Decon	Decontamination Facility

Range	Intra Lab Sr.	Inter Lab Sr.
1 (5-20 Fibers/100 fields)	0.40	0.50
2 (>20-50 Fibers/100 fields)	0.45	0.39
3 (>50 Fibers/100 fields)	0.26	0.35

Project Activity:	
Code	Type
1	Background
2	Setup
3	During
4	Clearance
5	Environmental
6	Personal
7	

Appendix E

Fuss & O'Neill Site Logs



Daily Site Log

20160618. WSO

Project Name/Number: Hebron Elementary School Date: 6/29/20
 Project Address: 92 Church St Hebron, CT Page Number: 1 of 1
 Specific Work Area: Bathroom # 9
 On-Site Technician: Pamj Bulman

Time	Comments	Initials
10:05	PB on site. Selective Services is not on site at the moment.	
10:30	PB performs a final visual inspection on Bathroom # 9 where 24 LF of pipe insulation from the bathroom wall chase. All pipes floor walls and ceiling are free of debris	
10:50	The Area passes final visual inspection and PB sets up final air clearance samples 6.29PB03-07 in the area.	
12:20	PB dumpflow FAC samples 6.29PB03-07 and analyze them.	
12:50	FAC samples 6.29 PB03-07 are E.006 FAC. The bathroom 9 area passes PBM/JAC.	
1:00	PB observe tear-down of the bathroom # 9 containment	
11:30	PB performs a post tear down visual of the containment in bathroom # 9.	
11:45	All debris has been removed from the area	
2:00	PB leaves the site	

Appendix F

Fuss & O' Neill Sign-In Sheets



WORKER SIGN-IN LOG

Project Name/Address: Helen Elementary School Date: 6/22/20
92 Church St, Helen CT

Project No. 20160168-W30 Work Area: 1963 Boys, Girls, Staff Level

Worker's Name (Print Neatly) (Nombre del Trabajador - Escriba claramente)	Signature (Firma)	Social Security No.	Type of Work
1. Shawn Michaud			Abatement
2. Steve Michaud		6976	Abatement
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			



WORKER SIGN-IN LOG

Project Name: Hebron Elementary School

Date: 6/25/20

Project No. 20180148.W10

Work Area: Bath 819 + Electric Room


Worker's Name (Nombre del Trabajador)	Signature (Firma)	License # (Licencia #)
1. Steve Michaud		
2. Shawn Michaud		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		



WORKER SIGN-IN LOG

Project Name/Address: Hebron Elementary School Date: 6/29/20

Project No. 2016 0108, W30 Work Area: Ballroom #9

Worker's Name (Print Neatly) (Nombre del Trabajador - Escriba claramente)	Signature (Firma)	Social Security No.	Type of Work
1. Steven Michael		6976	Abatement
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

Appendix G

Contractor Sign-In Logs

Sign In Abatement 60's Wing

<u>Name</u>	<u>Date</u>	<u>Respirator</u>	<u>Time In</u>	<u>Time Out</u>
Steven Michaud	6/16/2020	half mask	7am	4:02pm
Sharon Michaud	6-16-2020	half mask	7:05 am	4:03pm
Steven Michaud	6/17/2020	half mask	7:06am	4:24pm
Sharon Michaud	6-17-2020	half mask	7:10 am	4:30pm
Steven Michaud	6/18/2020	half mask	6:10am	4:10pm
Sharon Michaud	6-18-2020	half mask	6:15am	4:10pm
Steven Michaud	6/22/2020	half mask	7:01am	4:29pm
Sharon Michaud	6-22-2020	half mask	7:05am	4:30pm

Sign In Abatement 40's Wing

<u>Name</u>	<u>Date</u>	<u>Respirator</u>	<u>Time In</u>	<u>Time Out</u>
Steve Michael	6/23/2020	PAPR / Half face	7am	4:06 pm
Shaun Michael	6-23-2020	Half mask	7:00 am	4:06 pm
Steve Michael	6/24/2020	PAPR	6:02 am	4:18 pm
Shaun Michael	6-24-2020	Paprr	6:20 am	4:30 pm
Steve Michael	6/25/2020	PAPR	10:25 am	4:20 pm
Shaun Michael	6-25-2020	Paprr	11:00 am	4:30 pm
Steve Michael	6/29/2020	PAPR	6:01 am	4:05 pm
Shaun Michael	6-29-2020	Paprr	6:30 am	4:30 pm

Appendix H

Contractor Daily Logs

Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steven Michael
Date: June 16 2020
Time In: 10 Time Out: 4:30pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: 75 Clear

Work Location: 2000 wing

Task: Removed block wall (no lead or asbestos present)

Issues: arrived from office about 10am

Employees On Site:

1. Shawn Michael
2. Steve Michael
- 3.
- 4.
- 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steve Michael
Date: June 16 2020
Time In: 6am Time Out: 4:30pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: High 70's Clear

Work Location: Room 8 & 9 (chase asbestos free), 2000 wing
Set up containment in 1960's wing

Task: Containment Setup, debris removal from 2000 wing (performed by Andy Gilmore)

Issues: N/A

Employees On Site:

1. Andy Gilmore
2. Steve Michael
3. Shaun Michael
- 4.
- 5.

Supervisor Signature: 

Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steven Michael
Date: June 17 2020
Time In: 6 Time Out: 4:30pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: Low 80's Clear

Work Location: 1960's wing , 2000 wing (work performed by Andy Gilmore)

Task: 1960's wing opened up large sections of wall to confirm no asbestos, removed sink & wrapped along w/ ass chaulking to be thrown away as asbestos waste, removed and bagged lead tile. Finished debris clean up of 2000 wing

Issues:

N/A

Employees On Site:

1. Steve Michael
2. Shawn Michael
3. Andy Gilmore
- 4.
- 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steve Michael
Date: June 18 2020
Time In: 6 Time Out: 4:30pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: 80's Clear

Work Location: 1960's wing, small bathroom in 40's wing with no asbestos,
small bathroom in 40's wing lead/wall removal

Task: 1960's wing final clean for clearance on Mon, removed lead tile from small
bathrooms bagged and dropped off in trailer, made exploratory holes in wall
no asbestos present in small bathrooms, Andy haul out CMU's

Issues: N/A

Employees On Site:

1. Shawn Michael
2. Steve Michael
3. Andy Gilmore
- 4.
- 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steve Michaud
Date: June 22 2020
Time In: 6 Time Out: 4:30 pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: low 90's Clear

Work Location: 60's wing, hygienist arrives, debris carry out from clean areas

Task: finished final clean of residual dust per Scott request, looked at class room
pipes from within tunnel, carried out debris, ^{visual} clearance for small bathrooms in 60's
wing ~~given by Scott~~ - given by Scott

Issues: N/A

Employees On Site:

1. Steve Michaud
2. Shawn Michaud
3. Derrick Smith
- 4.
- 5.

Supervisor Signature: 

Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction

Supervisor: Steve Michaud

Date: June 23 2020

Time In: 6 Time Out: 4:30 pm

Project: Lead/Asbestos Abatement

Project Location: Hebron Elementary School

Weather: Clear 80s

Work Location: Small solo bathroom beside class room (1960's wing), wall penetrations
Set Up Containment in 40's wing

Task: Cut wall penetrations in 2000's wing, began containment setup in 40's wing (contained
class room on opposite ^{off} wall inside class room in case of any mud breakage), along
with bathroom, cut wall penetrations in 2000 wing to access new pipe install

Issues: N/A

Employees On Site:

1. Steve Michaud
2. Shawn Michaud
3. Derek Smith
4. Andy Gilmore
- 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steven Michael
Date: June 24 2020
Time In: 6 Time Out: 4:30 pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: Clear low 90's

Work Location: Containment for vermiculite form, abatement in 40's wing
debris, crawl space

Task: Cut block and removed in boys room of 40's wing, removed asbestos insulation, bagged
and removed, in 80's wing small solo bathroom removed wall (no lead or asbestos)
Set up containment for vermiculite, remove tunnel asbestos

Issues: N/A

- Employees On Site:
1. Steven Michael
 2. Shawn Michael
 3. Andy Gilmore
 4. Derrick Smith
 - 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steve Mizkud
Date: June 25 2020
Time In: 6 Time Out: 4:30

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: 80s Clear

Work Location: 40's wing, more wall penetrations, debris haul out from solo bath room
in 80's wing, Vermiculite abatement

Task: P. abatement (physicist) cleared boys room, to be locked down & air test, continued
work in females, began Vermiculite abatement, test passed & men room tear down
debris haul out, tunnel passes visual, need lead results prior to removing trailer

Issues: N/A

Employees On Site:

1. Steve Mizkud
2. Shawn Michaels
- 3.
- 4.
- 5.

Supervisor Signature: 

Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steven Michael
Date: June 29 2020
Time In: 6:45 Time Out: 4:30pm

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather: Overcast 80's

Work Location: female bathroom 40's wing, vermiculite room

Task: final clean female 40 wing bathroom, and final clean vermiculite
both passed (final abatement hygienist), proceed with tear down in
both areas

Issues: N/A

Employees On Site:

1. Steve Michael
2. Shawn Michael
- 3.
- 4.
- 5.

Supervisor Signature:



Selective Service LLC
555 Main St
Manchester Ct 06040

GC: Nutmeg Construction
Supervisor: Steve Michaud
Date: ~~July 1st~~ 2020 July 1st
Time In: 6 Time Out: 4:30

Project: Lead/Asbestos Abatement
Project Location: Hebron Elementary School
Weather:

Work Location: 40's wall channels

Task: returned to
cut channels in brick for new pipes

Issues: ~~None~~ saw wouldn't co-op

Employees On Site:

1. Steve Michaud
2. Shawn Michaud
- 3.
- 4.
- 5.

Supervisor Signature:



Appendix I

Contractor Personal Air Sample Results

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/16/2020 Supervisor Name: Steve Michael

Abatement Site: Hebron Elementary Work Area: 60 Wing Supervisor Signature: [Signature]
Boy/Girl Room

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 COA	1	PR	Steve Michael	7am / 2.4LPM	7.4am / 2.4	98.4LPM
2 COB	1	PR	Sharon Michael	8am / 2.4LPM	4:02pm / 2.4	1156.8LPM
3 Blank						
4 Blank						
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/17/20 Supervisor Name: Steve Michael

Abatement Site: Hebron Elementary Work Area: Boys Restroom Supervisor Signature: [Signature]

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1	GOC	EX	Steve Michael	7:00am / 2.4	7:35am / 2.4	81.6 LPM
2	GOD	GR	Steve Michael	7:15am / 2.4	4:24 pm / 2.4	1310.4 1310.4 LPM
3	Blank					
4	Blank					
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/18/20 Supervisor Name: Steve Michael

Abatement Site: Hebron Elementary Work Area: GC Wing Supervisor Signature: [Signature]
Boy/Girl Room Entrance

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 GC E	1	EX	Steve Michael	6:42am / 2.4	6:42am / 2.4	76.5 LPM
2 GC F	1	GR	Steve Michael	7:05am / 2.4	4:10pm / 2.4	1303 LPM
3 Blank						
4 Blank						
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/22/20 Supervisor Name: Steve Michael

Abatement Site: Hebron Elementary Work Area: Co wing Supervisor Signature: [Signature]
Final Clean

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 <u>60G</u>	<u>1</u>	<u>FC</u>	<u>Steve Michael</u>	<u>7:00am / 2.4LPM</u>	<u>7:47am / 2.4LPM</u>	<u>98.4 LPM</u>
2 <u>60H</u>	<u>1</u>	<u>FC</u>	<u>Steve Michael</u>	<u>7:00am / 2.4LPM</u>	<u>4:29pm / 2.4LPM</u>	<u>1363.2 LPM</u>
3 <u>Blank</u>						
4 <u>Blank</u>						
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/23/20 Supervisor Name: Steve Michaud

Abatement Site: Hebron Elementary Work Area: 40 Wing Bay / Girl Supervisor Signature: Steve Michaud

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 40A	1	PR	Steve Michaud	7:00 AM / 2.4 LPM	7:45 AM / 2.4	1152 LPM
2 40B	1	PR	Steve Michaud	7:55 AM / 2.4 LPM	4:06 PM / 2.4	1245.4 LPM
3 Blank						
4 Blank						
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/24/20 Supervisor Name: Steve Michael

Abatement Site: Hebron Elementary Work Area: 4c wing Supervisor Signature: Steve Michael
Continued

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume	
1	40C	3	EX	Shawn Michael	6:22am / 2.4LPM	6:40am / 2.4	91.2 LPM
2	40D	3	GR	Steve Michael	7:24am / 2.4LPM	4:18pm / 2.4	1329.6 LPM
3	Blank						
4	Blank						
5							
6							
7							
8							
9							

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/25/2020 Supervisor Name: Steven Michael

Abatement Site: Hebron Elementary Work Area: vermiculite room / 40 wing Supervisor Signature: STM

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 VA	1	GR	Steven Michael	6:40am / 2.4	10:10am / 2.4	504 LPM
2 VB	1	EX	Steve Michael	6:00am / 2.4	6:30am / 2.4	72 LPM
3 Blank VA						
4 Blank VB						
5 40 E	3	RA GR	Steve Michael	10:45am / 2.4	4:20pm / 2.4	804 LPM
6 40 F	3	EX	Steven Michael	10:25am / 2.4	10:50am / 2.4	74.4 LPM
7 Blank						
8 Blank						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Selective Service LLC

555 Main Street

Manchester, CT 06040

Project #: HES Date: 6/29/20 Supervisor Name: Steven Michael

Abatement Site: Hebron Elementary Work Area: 40 WING Supervisor Signature: [Signature]
Final clean

Sample #	Resp In Use	Abate Activity	Name SS #	Time Start Flow Start	Time Finish Flow Finish	Volume
1 40G	1	FC	Steven Michael	6:01am / 2.4	6:35am / 2.4	81.6 LPM
2 40H	1	FC	Steven Michael	6:20am / 2.4	4:05pm / 2.4	1404 LPM
3						
4						
5						
6						
7						
8						
9						

Sample	Results (F/CC)
1	
2	
3	
4	
5	

Sample #	Results (F/CC)
6	
7	
8	
9	
10	

Addition Activies:

Work Ara Prep (PR)

Gross Removal (GR)

Gross Removal Excursion (EX)

Final Clean (FC)

Respirator Type:

½ Face Neg Pressure 1

Full Face Neg Pressure 2

Power Air Positive Pressure 3

SAR/Continuous Flow 4

Appendix J

TCLP Lead Laboratory Result and Chain of Custody Form



202005548

www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

SAMPLE LOG FOR TCLP BULKES

Sheet No. 1 of 1

Project Name: Hebron Elementary School
Building: 92 Church Street

Project Number: 20160168-430 Tash 15
Project Manager: Kathleen Pano

Sample ID Number	Sample Location/Building	Material Type	Result (ppm)	Lab Number
6-25 PB 01	Bathroom 72 Hebron E.S.	4" ceramic wall tile		

Analysis Method: TCLP Lead Turnaround Time 48 hrs

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill on or before this date: _____
Please call the Fuss & O'Neill EnviroScience laboratory at 860-646-2469 if analyses will be late.

Fax Results To: Fuss & O'Neill Laboratory at 888-838-1160

Special Instructions: _____

Samples Collected By: Paul Butman Date: 6/25/20 Time: _____
Samples Rec'd/Sent By: Paul Butman Date: 6/25/20 Time: _____
Samples Received By: [Signature] EFX Date: 6/26/20 Time: 10:45 am

Shipped To: EMSL (State) NJ Other _____

Method of Shipment: Fed Ex. UPS Overnight UPS Ground Other _____

Per project name, CT sample - 6/24/20 (8) Per client, 1wk TAT - 6/26/20 FLAA (8)



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 786-5974

<http://www.EMSL.com>

cinnaminsonleadlab@emsl.com

EMSL Order:	202005548
CustomerID:	ENVI54
CustomerPO:	20160168.W30
ProjectID:	

Attn: **Kathleen Pane**
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
 Fax:
 Received: 06/26/20 12:37 PM
 Collected: 6/25/2020

Project: 20160168.W30 Task 15 / Hebron Elementary School / 92 Church St

Test Report: Toxicity Characteristic Leachate Procedure (1311/7000B)

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
6-25PB01	202005548-0001	6/25/2020	7/1/2020	<0.40 mg/L
Site: Bathroom 72 / Hebron E.S.				

Phillip Worby, Lead Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367

Initial report from 07/03/2020 15:46:22

Appendix K

Final Visual Inspection Forms



FUSS & O'NEILL

Final Visual Inspection Form

Asbestos Abatement

Date: 6/22/20 Removal Encapsulation Enclosure Repair Cleanup

PROJECT NAME: Helen Elementary School PROJECT NO.: 20160168.W3

SITE LOCATION: 92 Church St, Hebron, CT BUILDING: _____

WORK AREA: 1963-Girls Laundry PASS

CONTRACTOR: Selective Services FAIL

Neg Pressure Contain. Mini-Enclosure Glovebag Other (Describe Below) None

MATERIALS ABATED IN THIS SPECIFIC WORK AREA:

1. <u>White ceiling at counter top/wall</u>	QTY:	<u>200</u>	2.	QTY:	
3.	QTY:		4.	QTY:	
5.	QTY:		6.	QTY:	
7.	QTY:		8.	QTY:	
9.	QTY:		10.	QTY:	

SUSPECT ACM REMAINING IN CONTAINMENT NOT SPECIFIED FOR REMOVAL

1.	QTY:		2.	QTY:	
3.	QTY:		4.	QTY:	

SURFACES INSPECTED

Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.

- Floor Horizontal Surfaces Pipes Mechanical Equipment
- Duct Work Vertical Surfaces Decon Unit Contractor's Equipment
- Fixtures Enclosed Items Waste Load Out Other:

FIELD OBSERVATIONS

No TSI insulation observed at wet wall ceiling / chow

WORK AREA CLEARANCE: PCM TEM Visual Only None Performed

ACKNOWLEDGEMENT

I acknowledge that I inspected this work area on this day.

Fuss & O'Neill Inspector: Scott Mosp PRINTED [Signature] SIGNATURE

I have read and understand the inspection results.

Contractor's Supervisor: Steve Michaud PRINTED [Signature] SIGNATURE



FUSS & O'NEILL

Final Visual Inspection Form

Asbestos Abatement

Date: 6/22/20 Removal Encapsulation Enclosure Repair Cleanup

PROJECT NAME: Hebron Elementary School PROJECT NO.: 20160168.W30

SITE LOCATION: 92 Church St., Hebron CT BUILDING: _____

WORK AREA: 1963 Boys Locker PASS

CONTRACTOR: Selective Services FAIL

Neg Pressure Contain. Mini-Enclosure Glovebag Other (Describe Below) None

MATERIALS ABATED IN THIS SPECIFIC WORK AREA:

1. <u>White caulking of counter top/wall</u>	QTY:	<u>20 Lb</u>	2.	QTY:	
3.	QTY:		4.	QTY:	
5.	QTY:		6.	QTY:	
7.	QTY:		8.	QTY:	
9.	QTY:		10.	QTY:	

SUSPECT ACM REMAINING IN CONTAINMENT NOT SPECIFIED FOR REMOVAL

1.	QTY:		2.	QTY:	
3.	QTY:		4.	QTY:	

SURFACES INSPECTED

Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.

- Floor Horizontal Surfaces Pipes Mechanical Equipment
- Duct Work Vertical Surfaces Decon Unit Contractor's Equipment
- Fixtures Enclosed Items Waste Load Out Other:

FIELD OBSERVATIONS

No TSI observed at wet wall cavity / clean

WORK AREA CLEARANCE: PCM TEM Visual Only None Performed

ACKNOWLEDGEMENT

I acknowledge that I inspected this work area on this day.

Fuss & O'Neill Inspector: Scott Mossy PRINTED [Signature] SIGNATURE

I have read and understand the inspection results.
Contractor's Supervisor: [Signature] PRINTED Steven Michael SIGNATURE



FUSS & O'NEILL

Final Visual Inspection Form

Asbestos Abatement

Date: 4/25/20 Removal Encapsulation Enclosure Repair Cleanup

PROJECT NAME: Hebron Elementary School PROJECT NO.: 20160168.W30

SITE LOCATION: 92 Church St, Hebron Ct BUILDING: 1947 Section Bathroom PASS

WORK AREA: Bath 8, in Plumbing Walk FAIL

CONTRACTOR: Selective Services

Neg Pressure Contain. Mini-Enclosure Glovebag Other (Describe Below) None

MATERIALS ABATED IN THIS SPECIFIC WORK AREA: Bathroom 8

1. Pipes and Mudded	QTY:	15 LF	2.	QTY:	
Insulation	QTY:		4.	QTY:	
5.	QTY:		6.	QTY:	
7.	QTY:		8.	QTY:	
9.	QTY:		10.	QTY:	

SUSPECT ACM REMAINING IN CONTAINMENT NOT SPECIFIED FOR REMOVAL

1.	QTY:		2.	QTY:	
3.	QTY:		4.	QTY:	

SURFACES INSPECTED

Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.

- Floor Horizontal Surfaces Pipes Mechanical Equipment
- Duct Work Vertical Surfaces Decon Unit Contractor's Equipment
- Fixtures Enclosed Items Waste Load Out Other:

FIELD OBSERVATIONS

WORK AREA CLEARANCE: PCM TEM Visual Only None Performed

ACKNOWLEDGEMENT

I acknowledge that I inspected this work area on this day.

Fuss & O'Neill Inspector: Paul Burkman Paul Burkman
PRINTED SIGNATURE

I have read and understand the inspection results.

Contractor's Supervisor: Steven Michaud Steven Michaud
PRINTED SIGNATURE



Final Visual Inspection Form

Asbestos Abatement

Date: 6/25/20 Removal Encapsulation Enclosure Repair Cleanup

PROJECT NAME: Hebron Elementary School PROJECT NO.: 20160168.W30

SITE LOCATION: 92 Church St Hebron CT BUILDING: 1947 Section PASS

WORK AREA: Electrical Work in 1988 Section FAIL

CONTRACTOR: Selective Services

Neg Pressure Contain. Mini-Enclosure Glovebag Other (Describe Below) None

MATERIALS ABATED IN THIS SPECIFIC WORK AREA:

1. Vermiculite Wall	QTY:	15 SF	2.	QTY:
2. Insulation	QTY:		4.	QTY:
5.	QTY:		6.	QTY:
7.	QTY:		8.	QTY:
9.	QTY:		10.	QTY:

SUSPECT ACM REMAINING IN CONTAINMENT NOT SPECIFIED FOR REMOVAL

1.	QTY:		2.	QTY:
3.	QTY:		4.	QTY:

SURFACES INSPECTED

Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.

- Floor Horizontal Surfaces Pipes Mechanical Equipment
- Duct Work Vertical Surfaces Decon Unit Contractor's Equipment
- Fixtures Enclosed Items Waste Load Out Other:

FIELD OBSERVATIONS

WORK AREA CLEARANCE: PCM TEM Visual Only None Performed

ACKNOWLEDGEMENT

I acknowledge that I inspected this work area on this day.

Fuss & O'Neill Inspector: Paul Byrdman (PRINTED) Paul Byrdman (SIGNATURE)

I have read and understand the inspection results.

Contractor's Supervisor: Steven Michaud (PRINTED) Steven Michaud (SIGNATURE)

GENERAL NOTES

1. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR THE IDENTIFICATION OF ALL HAZARDOUS MATERIALS AND FOR NOTIFYING THE LOCAL DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL PRIOR TO REMEDIATION WORK.
2. REMEDIATION AREAS REPRESENTED ON THIS DRAWING ARE TO BE REMEDIATED IN ACCORDANCE WITH THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS AND THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS. THE CONTRACTOR SHALL REFER TO THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS FOR ADDITIONAL INFORMATION.
3. ALL HAZARDOUS MATERIALS ABATEMENT OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS AND THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE LOCAL DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL PRIOR TO REMEDIATION WORK.
4. ALL HAZARDOUS MATERIALS ABATEMENT OPERATIONS SHALL BE CONDUCTED IN ACCORDANCE WITH THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS AND THE HAZARDOUS MATERIALS ABATEMENT REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE LOCAL DEPT. OF HEALTH AND ENVIRONMENTAL CONTROL PRIOR TO REMEDIATION WORK.

ASBESTOS ABATEMENT NOTES

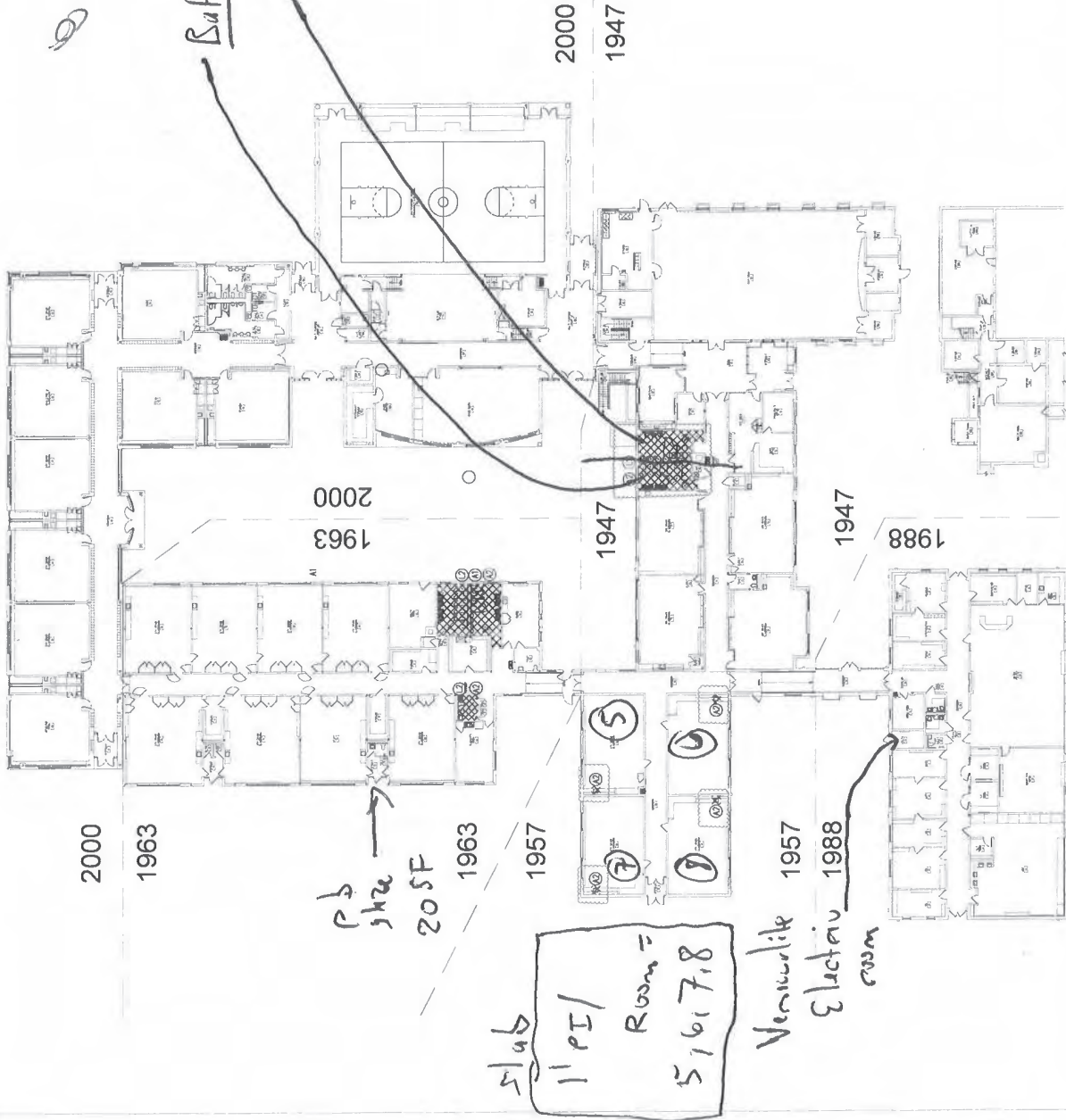
1. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ASBESTOS CONTAINING MATERIALS AS SHOWN ON THIS DRAWING.
2. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ASBESTOS CONTAINING MATERIALS AS SHOWN ON THIS DRAWING.

LEAD ABATEMENT NOTES

1. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL LEAD CONTAINING MATERIALS AS SHOWN ON THIS DRAWING.
2. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL LEAD CONTAINING MATERIALS AS SHOWN ON THIS DRAWING.

LEGEND

- ☒ HAZARDOUS ABATEMENT WORK AREA
- ⊙ ACTIVITY



Project No. **HM-01**
 Date: **12/20/13**
 Scale: **1/8" = 1'-0"**
 Drawing No. **017 004P.CY**

HAZARDOUS MATERIALS ABATEMENT PLAN

FUSS & O'NEILL
 14 HARTFORD ROAD
 06108-2946
 TEL: 203 230 9907 FAX: 203 230 8247
 www.fussandoneill.com

SILVER / PETRUCELLI + ASSOCIATES
 Architects/Engineers/Interior Architects
 3100 Wilbur Avenue, Hartford, CT 06184-2946
 One Penn Hill Place, New London, CT 06320
 TEL: 203 230 9907 FAX: 203 230 8247
 www.petruccelli.com

Hebron Elementary School
 Contaminated Water Piping Replacement
 92 Church Street
 Hebron, Connecticut 06248



FUSS & O'NEILL

Final Visual Inspection Form

Asbestos Abatement

Date: 6/29/20 Removal Encapsulation Enclosure Repair Cleanup

PROJECT NAME: Hebron Elementary School PROJECT NO.: 201601168-W30

SITE LOCATION: 92 Church St Hebron CT BUILDING: 1947 Section - Bath PASS

WORK AREA: Bathroom 9 in Plumbing wall FAIL

CONTRACTOR: Selective Services

Neg Pressure Contain. Mini-Enclosure Glovebag Other (Describe Below) None

MATERIALS ABATED IN THIS SPECIFIC WORK AREA:

1. <u>Pipe and mudded</u>	QTY: <u>215^{lb}</u>	2.	QTY:
<u>insulation</u>	QTY: <u>2415^{lb}</u>	4.	QTY:
5.	QTY:	6.	QTY:
7.	QTY:	8.	QTY:
9.	QTY:	10.	QTY:

SUSPECT ACM REMAINING IN CONTAINMENT NOT SPECIFIED FOR REMOVAL

1.	QTY:	2.	QTY:
3.	QTY:	4.	QTY:

SURFACES INSPECTED

Instructions: Check surfaces that pass. Circle surfaces that fail. Strike through N/A.

- Floor Horizontal Surfaces Pipes Mechanical Equipment
- Duct Work Vertical Surfaces Decon Unit Contractor's Equipment
- Fixtures Enclosed Items Waste Load Out Other:

FIELD OBSERVATIONS

WORK AREA CLEARANCE: PCM TEM Visual Only None Performed

ACKNOWLEDGEMENT

I acknowledge that I inspected this work area on this day.

Fuss & O'Neill Inspector: Paul Bateman [Signature]
PRINTED SIGNATURE

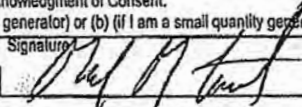
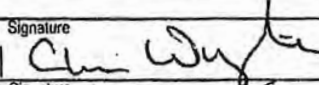
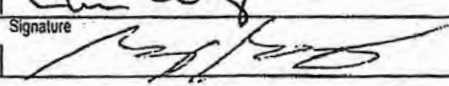
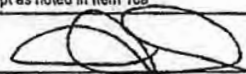
I have read and understand the inspection results.

Contractor's Supervisor: Steve Michaud [Signature]
PRINTED SIGNATURE

Appendix L

Waste Shipment Record

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CTP0000334308	2. Page 1 of 1	3. Emergency Response Phone 1 800 424 9100 424 9300	4. Manifest Tracking Number 012004557 FLE	
5. Generator's Name and Mailing Address Town of Hebron 25 Gilead Street Hebron, CT 06248			Generator's Site Address (if different than mailing address) Town of Hebron 93 Church Street Hebron, CT 06248			
Generator's Phone: 860-307-7562			U.S. EPA ID Number CTR000505958			
6. Transporter 1 Company Name RED Technologies, LLC. (Portland)			U.S. EPA ID Number NY F006 00003			
7. Transporter 2 Company Name EQ Northeast TRANSPORT ROUTE LLC			U.S. EPA ID Number MAD084814136			
8. Designated Facility Name and Site Address Stallex Canada Inc. 760 Boulevard Industriel Blainville, QC J7C3V4			U.S. EPA ID Number NYD980756415			
Facility's Phone: 450.430.9230						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
		No.	Type			
1.	UN3077, Waste Environmentally hazardous substances, solid, X n.o.s. (LEAD), 9, III, RQ	001	CF	300	P	D08 0008
2.						
3.						
4.						
14. Special Handling Instructions and Additional Information Document D22998 Sales Order 3634 Job 20-001; Weight is estimated RED Technologies, LLC is acting as intermediary to facilitate export 1) Profile#AOC 02361811E19020 LEAD DEBRIS DOTERG#171						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offlor's Printed/Typed Name Mark M. FitzGerald					Signature 	
					Month Day Year 17 20 2020	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name Chris Winkler					Signature 	
					Month Day Year 7 20 20	
Transporter 2 Printed/Typed Name SERGE BOUKHY					Signature 	
					Month Day Year 7 22 20	
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number: _____						
18b. Alternate Facility (or Generator)					U.S. EPA ID Number	
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator)					Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H132		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name MARCEL DOZAS					Signature 	
					Month Day Year 10 23 20	



EMERGENCY CONTACT 800-424-9300 (CCN 836445)

173 Pickering Street
Portland, CT 06480
(860) 342-1022
Fax: (860) 342-1042

EPA New England
1 Congress Street
Boston, MA 02114-2023
(617) 918-1111

EPA Region 2
290 Broadway, 26th Floor
New York, NY 10007-1866
(212) 264-6770

392404

TK# 127938

WASTE SHIPMENT RECORD

MassDEP Asbestos Notification Number

Job Number _____ P.O. # _____
 Contractor SELECTIVE SERVICE, LLC
 Address 555 MAIN ST
 City MANCHESTER State CT Zip 06040
 Contact Name JOEL Telephone 860 324-8000
 Date Container Del. _____ Date of Pickup _____
 Type of Container GAYLORD BOX
VOLUME WY 3 CY Non-Friable
MUST BE IN CUBIC YARDS
 Friable - RQ, NA2212, Asbestos, 9, PG, III
 Bag Drum Cubic Yard Box
 Wrapped Other

GENERATOR/BUILDING OWNER
TOWN OF HEBRON, CT
 Address _____
15 GILEAD ST
 City HEBRON State CT Zip 06248
 Phone Number 860 228-5971

WORKSITE / GENERATING LOCATION
HEBRON ELEMENTARY SCHOOL
 Address _____
12 CHURCH ST
 City HEBRON State CT Zip 06248
 Phone Number 860 228-5971

I certify the above named material does not contain free liquid as defined by 40 CFR part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to NESHAP standards for asbestos waste disposal found in 40 CFR part 61.150.

Shipper's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national government regulations.

AUTHORIZED SIGNATURE [Signature]

Transporter 1: SAME AS TRANSPORTER 2
 Name _____ Address _____ Telephone # _____
 Driver: [Signature] JOEL MROSOX Registration #: CO62000 CT State / # _____ Date: 7/20/20
 Signature _____
 Transporter 1 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state, and local regulation."

Transporter 2: RED Technologies LLC, 10 Northwood Drive Bloomfield, CT 06002 Telephone # 860-218-2428
 Name N/A Address _____ Telephone # _____
 Driver: _____ Registration #: _____ State / # _____ Date: _____
 Signature _____
 Transporter 2 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state, and local regulation."

Transfer Facility: RED Technologies LLC, 203 Pickering Street, Portland, CT 06480 Telephone # 860-342-1022
 By: [Signature] W. Parker Transfer Date: 7/20/20 Permit # 11301113-PO
 Telephone # _____

Discrepancy: _____
Transfer Facility: Certification of transfer of materials covered by this manifest

Transporter 3: North Star Telephone # 3309497424
 Name _____ Address _____ Telephone # _____
 Driver: [Signature] Registration #: _____ State / # _____ Date: 7/21/20
 Signature _____
 Transporter 3 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state, and local regulation."

Landfill Name: Minerva Enterprises
 Location: 9000 Minerva Rd. Waynesburg, OH 44688
 Ph: 330-866-3435 Permit # P0104984

OTHER
 Landfill Name: _____
 Location: _____
 Ph: _____ Permit # _____

Approximate Volume of Asbestos Received: _____
 Discrepancy If Any: _____
 Received by: [Signature] Date: 7/22/20
 Certification of transfer of materials covered by this manifest

DESIGNATED FACILITY TO GENERATOR

Silver Petrucelli & Associates, Inc.

3190 Whitney Avenue, Bldg 2

Hamden, CT 06518

2032309007

bpetrucci@silverpetrucelli.com

<http://www.silverpetrucelli.com>



INVOICE

INVOICE # 20-2041

DATE 09/01/2020

DUE DATE 10/01/2020

TERMS Net 30

BILL TO

Town of Hebron

Mr. Andrew Tierney

15 Gilead Street

Hebron, CT 06248

PLEASE DETACH TOP PORTION AND RETURN WITH YOUR PAYMENT.

SP&A JOB NUMBER

19.003

PROJECT MANAGER

KE

ACTIVITY	FEE AMOUNT	RATE	AMOUNT
Services	7,750	1.00	7,750.00
Grant pre-application services			
SD-Schematic Design	9,200	1.00	9,200.00
Schematic Design			
CD-Const Docs	22,900	1.00	22,900.00
Construction Documents			
BID	3,600	1.00	3,600.00
Bid Phase			
CA-Const Admin	17,500	0.95	16,625.00
Construction Administration 95% completed, 5% billed this month			
Total Fee	60,950		
Total Fee			
Add. Services	530		
cost per meeting beyond those specified in the RFP			
Add. Services	820		
costs per week for CA beyond the schedule in the Construction CD			
Printing Services	800	1.681275	1,345.02
printing previously invoiced			
Consultant	70,188.60	0.9648356	67,720.46
Fuss&O'Neill CO1, CO2, Hazmat svc, CA, Health Risk Assessmt			
-Fuss and O'Neill \$2468.14 billed this month			2,468.14
Previously Billed			-128,265.48

Drinking water-contamination remediation project
Hebron Elementary School
<mailto:EGriffin@hebronct.com> EMAIL

BALANCE DUE

\$3,343.14

			AIA DOCUMENT G703			
				INVOICE NO:	20-2041	
				INVOICE DATE:	9/1/2020	
				PERIOD TO:	8/31/2020	
Hebron Elementary School				ARCHITECT'S PROJECT NO:	19.003	
A	B	C	D	E		F
DESCRIPTION OF WORK	CONTRACT	WORK COMPLETED		TOTAL	%	
	AMOUNT	PREVIOUSLY	THIS	COMPLETED		
BASE CONTRACT		BILLED	INVOICE	TO DATE		
SCHEDULE OF VALUES						
		Includes 10% markup on F&O fees	Includes 10% markup on F&O fees		BALANCE TO COMPLETION	
Grant pre-application	\$ 7,750.00	\$ 7,750.00		\$ 7,750.00	100.00%	\$ -
Schematic Design	\$ 9,200.00	\$ 9,200.00		\$ 9,200.00	100.00%	\$ -
Construction Documents	\$ 22,900.00	\$ 22,900.00		\$ 22,900.00	100.00%	\$ -
Bid	\$ 3,600.00	\$ 3,600.00		\$ 3,600.00	100.00%	\$ -
Construction Administration	\$ 17,500.00	\$ 15,750.00	\$ 875.00	\$ 16,625.00	95.00%	\$ 875.00
Add. Service/cost per meeting beyond specified \$530.00	\$ -					
Add. Service/cost per week for CA beyond schedule \$820.00	\$ -					
Printing Services	\$ 800.00	\$ 1,349.09	\$ -	\$ 1,349.09	168.64%	\$ -
CONSULTANT: F&O Addendum #1 (Hazmat Svc & CA)	\$ 29,755.00	\$ 27,776.10	\$ 1,978.90	\$ 29,755.00	100.00%	\$ -
CONSULTANT: F&O Addendum #2 (Heath Risk Assessmt)	\$ 34,293.60	\$ 33,966.54	\$ 327.06	\$ 34,293.60	100.00%	\$ -
CONSULTANT: F&O Addendum #3 (Water Sampling+PM)	\$ 6,140.00	\$ 5,977.82	\$ 162.18	\$ 6,140.00	100.00%	\$ -
Totals	\$ 131,938.60	\$ 128,269.55	\$ 3,343.14	\$131,612.69	99.75%	\$ 875.00

Addendum #3 - 6/7/2019 - Lead in Water Consulting Services

<u>Task</u>	<u>Total Fee:</u>	<u>Previously Billed</u>	<u>This Period:</u>	<u>Balance to Completion:</u>
Task: 10 (Prop 2) Water Sampling - Labor	\$ 2,150.00	\$ 2,188.00	\$ -	\$ (38.00)
Task: 15 (Prop 3) Laboratory Analysis	\$ 220.00	\$ 143.90	\$ 21.10	\$ 55.00
Task: 34 (Prop 2) Project Management & Meetings	\$ 2,071.50	\$ 2,147.00	\$ -	\$ (75.50)
Task: 35 (Prop 1) Building Committee Meetings	\$ 1,140.00	\$ 1,081.50	\$ -	\$ 58.50
F&O Totals:	\$ 5,581.50	\$ 5,560.40	\$ 21.10	\$ 0.00
Totals Including 10% S/P+A Markup	\$ 6,140.00	\$ 5,977.82	\$ 162.18	\$ 0.00

Note: \$138.63 of the \$162.18 above is for the markup that was not collected due to the town paying F&O directly on F&O's first invoice under Amd #3, which did not include S/P+A markup.

Addendum 1 - 9/17/2019 - Additional Services to Provide Hazmat Consulting Services

<u>Task</u>	<u>Total Fee:</u>	<u>Previously Billed</u>	<u>This Period:</u>	<u>Balance to Completion:</u>
Task: 10 (A1+A3) Inspection, Labor and Report	\$ 7,950.00	\$ 7,950.00	\$ -	\$ -
Task: 15 (A2) Laboratory Analysis	\$ 6,850.00	\$ 6,320.00	\$ 92.25	\$ 437.75
Task: 22 (B1+B2) Pre-Bid Meeting/RFIs	\$ 824.00	\$ 1,223.00	\$ -	\$ (399.00)
Task: 25 (B3) Specifications	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -
Task: 28 (B4) Contractor Submittal Review	\$ 412.00	\$ 721.00	\$ -	\$ (309.00)
Task: 30 (C1) Project Monitoring	\$ 3,920.00	\$ 2,853.60	\$ -	\$ 1,066.40
Task: 34 (C3) Project Management	\$ 2,060.00	\$ 4,183.40	\$ 428.55	\$ (2,551.95)
Task: 36 (C1.1+C1.2) PCM Bkgrnd/Final Air Analysis	\$ 850.00	\$ -	\$ -	\$ 850.00
Task: 38 (C2+C4) Air Samp Pumps/Reimb. Expenses	\$ 675.00	\$ -	\$ -	\$ 675.00
Task: 40 (C5) Documentation Report	\$ 1,500.00	\$ -	\$ 1,269.20	\$ 230.80
F&O Totals:	\$ 27,041.00	\$ 25,251.00	\$ 1,790.00	\$ -
Totals Including 10% S/P+A Markup	\$ 29,755.00	\$ 27,776.10	\$ 1,978.90	\$ 0.00

Addendum 2 - 10/9/2019 - Health Risk Assessment

<u>Task</u>	<u>Total Fee:</u>	<u>Previously Billed</u>	<u>This Period:</u>	<u>Balance to Completion:</u>
Task: 10 Gradient Corporation plus 15% Markup	\$ 29,900.00	\$ 29,893.42	\$ 6.58	\$ 0.00
Task: 20 Fuss & O'Neill Meeting Support	\$ 1,276.00	\$ 985.25	\$ 290.75	\$ -
F&O Totals:	\$ 31,176.00	\$ 30,878.67	\$ 297.33	\$ 0.00
Totals Including 10% S/P+A Markup	\$ 34,293.60	\$ 33,966.54	\$ 327.06	\$ 0.00



FUSS & O'NEILL, INC.

Remit to: Fuss & O'Neill, Inc. 146 Hartford Road Manchester, CT 06040 t 860.646.2469 f 860.649.6883 For EFT/ACH: Bank of America ABA 011900254 Acct 385016029253 FEIN: 06-0845648 INVOICE

Beth Petrucelli Silver/ Petrucelli + Associates 3190 Whitney Avenue Building 2 Hamden, CT 06518

September 17, 2020 Invoice No: 0225426 Project Manager Kathleen Pane

Purchase Order:

Invoice Total \$927.00 + 10% S/P Markup = \$1,019.70

Project 20160168.W30 Hebron Elementary School-Hazardous Materials Consulting Services

Professional Services through August 22, 2020

Task 000034 Project Management

Professional Personnel

Table with columns: Associate, Name, Hours, Rate, Amount, Total Labor, Total this Task, Total this Invoice

Outstanding Balances as of Invoice Date

Table with columns: Number, Date, Balance

Table with columns: Invoiced to Date, Current, Prior, Total

Net 30 days unless otherwise agreed-1.5% service charge on invoice balance over 30 days (18% per year). All applicable sales tax included.

Hungerfords Incorporated

Pump Service

PO Box 748
North Haven, CT 06473-0748
Phone (203)248-5541 Fax (203) 230-4799
www.HungerfordsPumpService.com

SERVICE INVOICE

Date	Invoice #
8/31/2020	87091

CT Lic# P1-0204646

Bill To:

Hebron Board of Education
580 Gilead Street
Hebron, CT 06248

Service Site:

Hebron Elementary
92 Church Street
Hebron, CT

Service Date	P.O. Number	Terms	Due Date	Rep	Account #	Project
8/25/2020		NET	8/31/2020	BR		
Description		Quantity	Serviced	Price Each	Amount	
Commercial Service Call Ordered sample bottles and pulled samples from five locations. Wayne will take care of getting samples to the lab.			8/25/2020	540.00	540.00	
OK TO PAY						
_____ PO/Account Number						
_____ Date						
_____ Signature						
				Subtotal	\$540.00	
				Sales Tax (0.0%)	\$0.00	
				Total	\$540.00	
Payments/Credits			\$0.00	Balance Due	\$540.00	



Invoice

Invoice #:	876476
Invoice Date:	09/04/20

From: Phoenix Environmental Laboratories, Inc
 587 E. Middle Turnpike, Box 370
 Manchester, CT 06045-0370
 (860) 812-0270 Fax (860) 645-0823

Cust Code:	HEBRON
Cust Id:	H17302
Quote #:	
Page:	1 of 2

To: Attn: Accounts Payable
 Hebron Board of Ed
 580 Gilead Street
 Hebron, CT 06248

Submittal Date:	08/25/20	Project Manager:	Mr. Wayne Durocher
Purchase Order #:			
Turnaround Time:	Standard		
Lab SDG:	GCG60881		
Project ID:	SPECIAL WELL SAMPLING		
Sample ID:	CG60881, CG60882, CG60883, CG60884		

The following charges are due for the indicated samples(s) which were submitted to this laboratory.

Description	Qty	Unit Price	Total Price
Field Services	1	\$45.00	\$45.00
Tot. Diss. Solids	4	\$12.00	\$48.00
Sulfate	4	\$15.00	\$60.00
Silica	4	\$85.00	\$340.00
pH	4	\$10.00	\$40.00
Manganese	4	\$12.00	\$48.00
Lead	4	\$12.00	\$48.00
Iron	4	\$12.00	\$48.00
Free Chlorine	4	\$12.00	\$48.00
CT EDI Reporting	1	\$10.00	\$10.00
Copper	4	\$12.00	\$48.00
Conductivity	4	\$12.00	\$48.00
Chlorine Residual	4	\$12.00	\$48.00
Chloride	4	\$15.00	\$60.00
Calcium	4	\$12.00	\$48.00
Alkalinity-CaCO3	4	\$14.00	\$56.00
Hardness (CaCO3)	4	\$14.00	\$56.00

Continued on Next Page...

Remit To:

Phoenix Environmental Laboratories, Inc
 Box 370
 Manchester, CT 06045-0370
 FID#: 06-1240980

ACH (Updated Oct 2018):

Sylena Edlund
 accountsreceivable@phoenixlabs.com
 (860) 647-1785

Invoice Inquiries:

Sarah Bell
 sarah@phoenixlabs.com
 (860) 558-0726

For each ACH transfer please note invoices to be paid and email accounts receivable at accountsreceivable@phoenixlabs.com
 Interest at 1.5% per month charged to accounts due over 30 days. Collection expenses incurred will be charged.



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Invoice Total	\$1,099.00

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