

| HOOD INFORMATION | | | | | | | | | | | | | | | | | |
|------------------|--------------|-----------|-----------------------|-----------------|-------------------|----------------------|----------------------------|-----------|-------------------|--------|------|------|-------|---------|--------|-------------------|------------------|
| HOOD NO. | MARK | MODEL | HOOD DIMENSIONS (IN.) | | | HOOD CONSTR. | COOKING LOAD / DUTY RATING | TOTAL CFM | EXHAUST COLLAR(S) | | | | | SUPPLY | | TOTAL WEIGHT LBS. | SECTION LOCATION |
| | | | LENGTH | WIDTH | HEIGHT | | | | WIDTH | LENGTH | DIA. | CFM | S.P. | MUA CFM | AC CFM | | |
| 1 | GRIDDLE HOOD | XGEP-64-S | 64 | TOP 23 BOT 8 | FRT 12 BACK 36 | 430 SS WHERE EXPOSED | MEDIUM | 1500 | 12 | 12 | | 1500 | 1.918 | | | 136.8 | SINGLE |

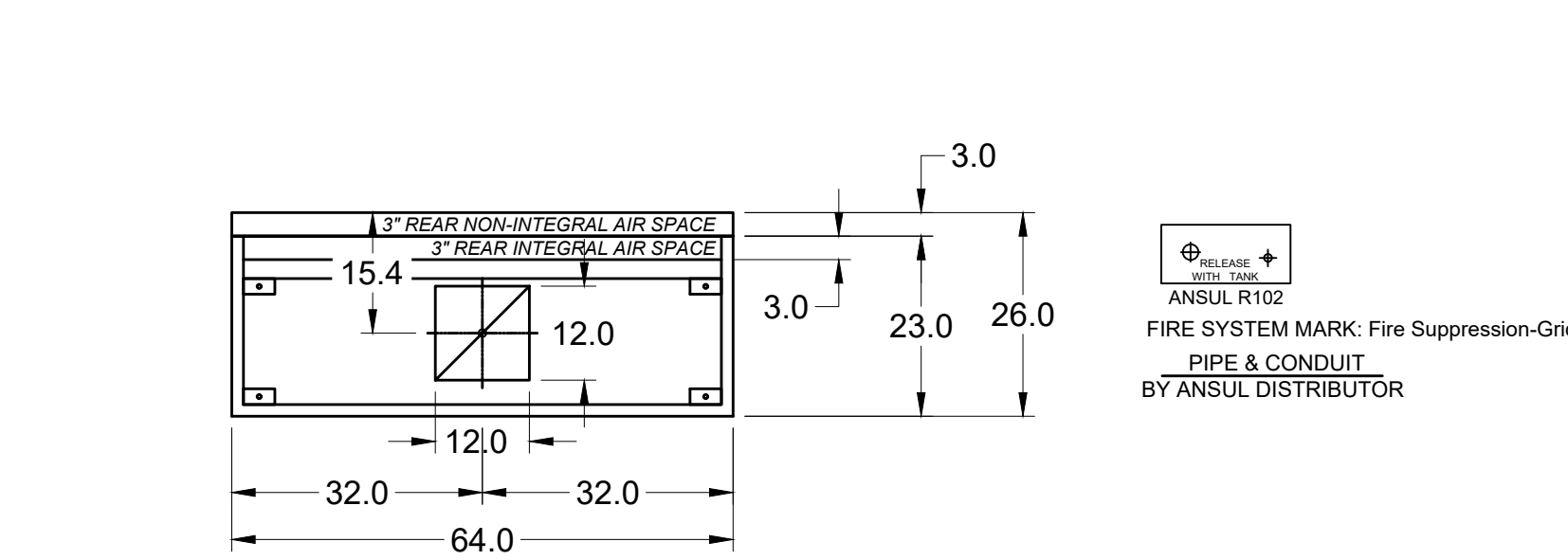
| HOOD INFORMATION | | | | | | | | | | | | | | | | |
|------------------|--------------|------------------|-----|--------------|---------------------------|-----|------------|--------------------|-------------|------|-------|----------|-----------|------|-------|-----------|
| HOOD NO. | MARK | LIGHTING DETAILS | | | GREASE FILTRATION DETAILS | | | UTILITY CABINET(S) | | | | | | | | |
| | | FIXTURE TYPE | QTY | FOOT CANDLES | TYPE / MODEL | QTY | SIZE (IN.) | LOCATION | FIRE SYSTEM | SIZE | MODEL | CONTROLS | INTERFACE | TYPE | MODEL | INTERFACE |
| 1 | GRIDDLE HOOD | | | | GREASE GRABBER | 4 | 16 | | | | | | | | | |
| | | | | | STAINLESS STEEL | 0 | 20 | 16 | | | | | | | | |

| HOOD OPTIONS | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|
| UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625 | | | | | | | | | | SPECIAL DESIGN REQUESTS | | | | |
| BACK NON-INTEGRAL AIR SPACE - 3 IN WIDE | | | | | | | | | | SDR #K1100145 - FLUE BYPASS HOOD | | | | |
| 26 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED | | | | | | | | | | SDR #K1800144 - CULVERS 4VAT 2FIRE PROCESS - GRIDDLE HOOD | | | | |
| FACTORY MOUNTED EXHAUST COLLAR(S) | | | | | | | | | | | | | | |
| PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY | | | | | | | | | | | | | | |
| STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH | | | | | | | | | | | | | | |

| Direct Drive Upblast Centrifugal Roof Exhaust Fan | | | | | | | | | | | | | | |
|---|-------------------|-------------|-----------------|---------------------------|---------|----------------------|--------------|-------------------|----------|-----------|-----------|----------|----------|--|
| MARK INFORMATION | | | FAN INFORMATION | | | | | MOTOR INFORMATION | | | | | | |
| QTY | MARK | MODEL | VOLUME (CFM) | TOTAL EXTERNAL SP (IN WG) | FAN RPM | OPERATING POWER (HP) | WEIGHT (LB.) | SIZE (HP) | V/C/P | ENCLOSURE | MOTOR RPM | WINDINGS | NEC FLA* | |
| 1 | PRV-2 Griddle Fan | XCUE-140-VG | 1,500 | 1.801 | 1,725 | 0.83 | 92 | 1 | 115/60/1 | OP | 1725 | 1 | 16 | |

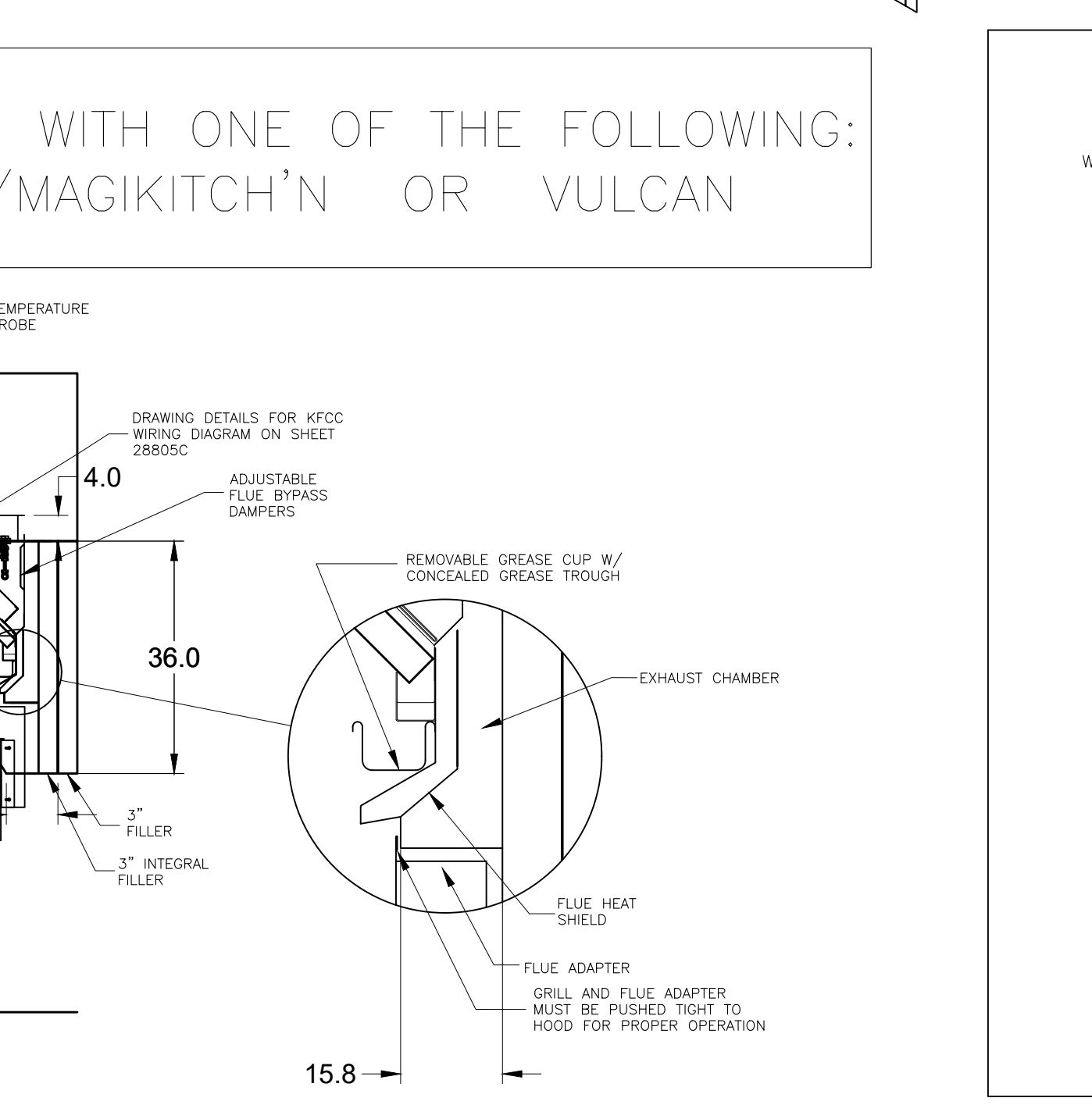
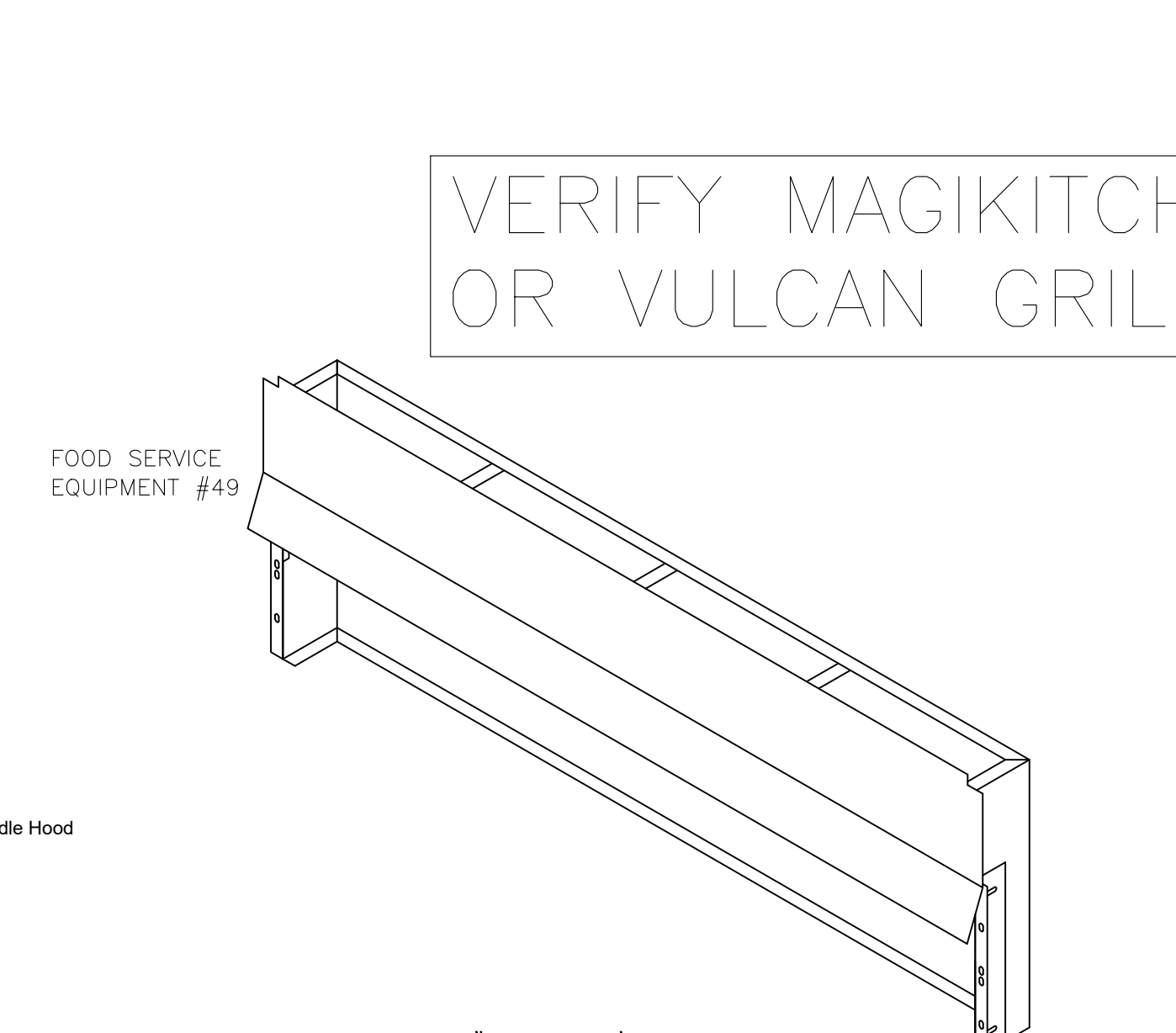
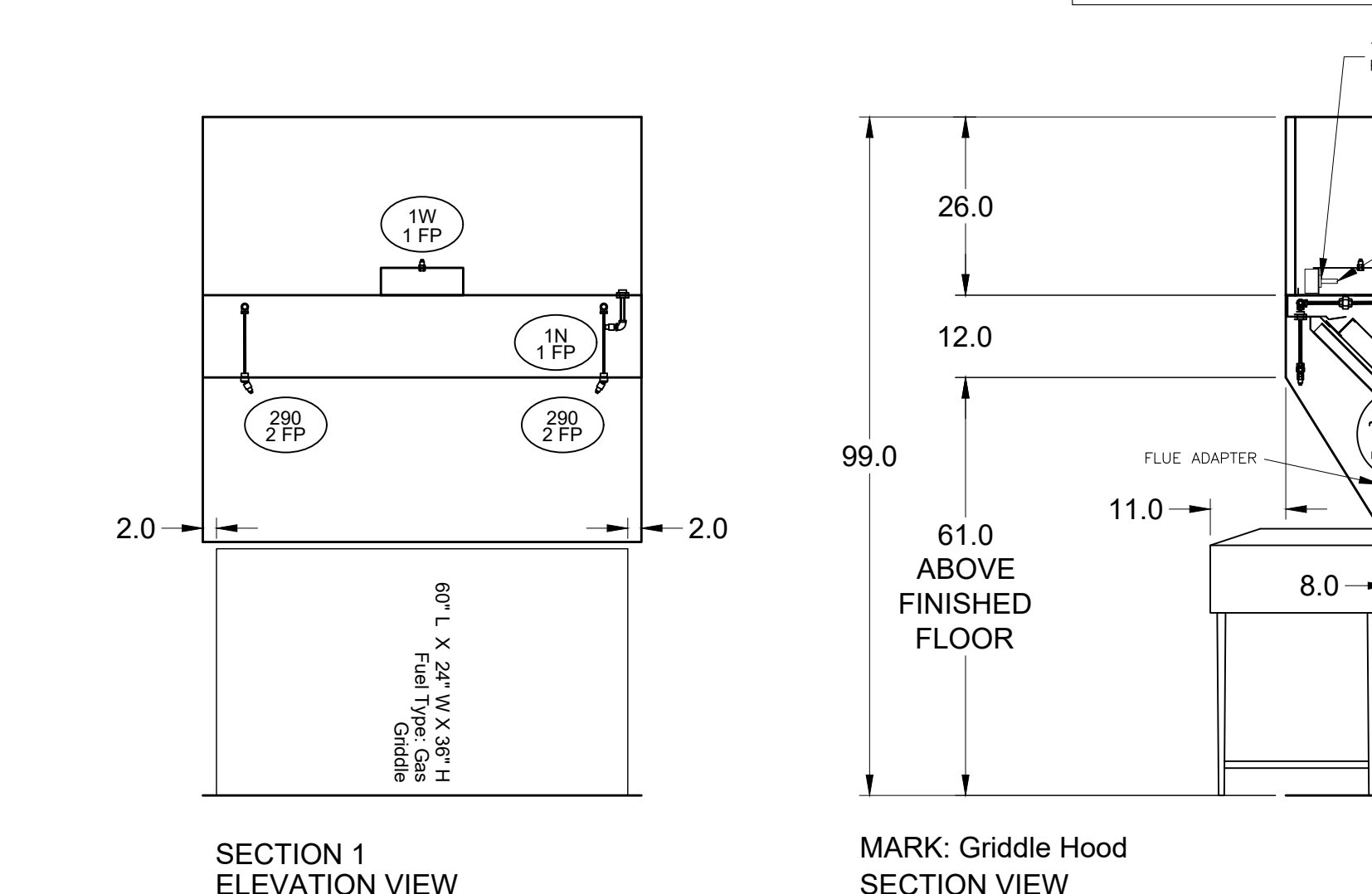
*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

| PRV-2 Griddle Fan : SELECTED OPTIONS AND ACCESSORIES | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| One piece fully welded windband | | | | | | | | | | | | | | |
| Tapered bushing wheel hub | | | | | | | | | | | | | | |
| Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95) | | | | | | | | | | | | | | |
| Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480) | | | | | | | | | | | | | | |
| Larger Curb Cap Size - 26 Square | | | | | | | | | | | | | | |
| UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762) | | | | | | | | | | | | | | |
| Switch, NEMA-3R, Toggle, Shipped with Unit | | | | | | | | | | | | | | |
| Hinge, Factory Installed | | | | | | | | | | | | | | |
| High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached) | | | | | | | | | | | | | | |
| Grease Trap (PN 475538) | | | | | | | | | | | | | | |
| Clean-out Port - Factory Installed | | | | | | | | | | | | | | |



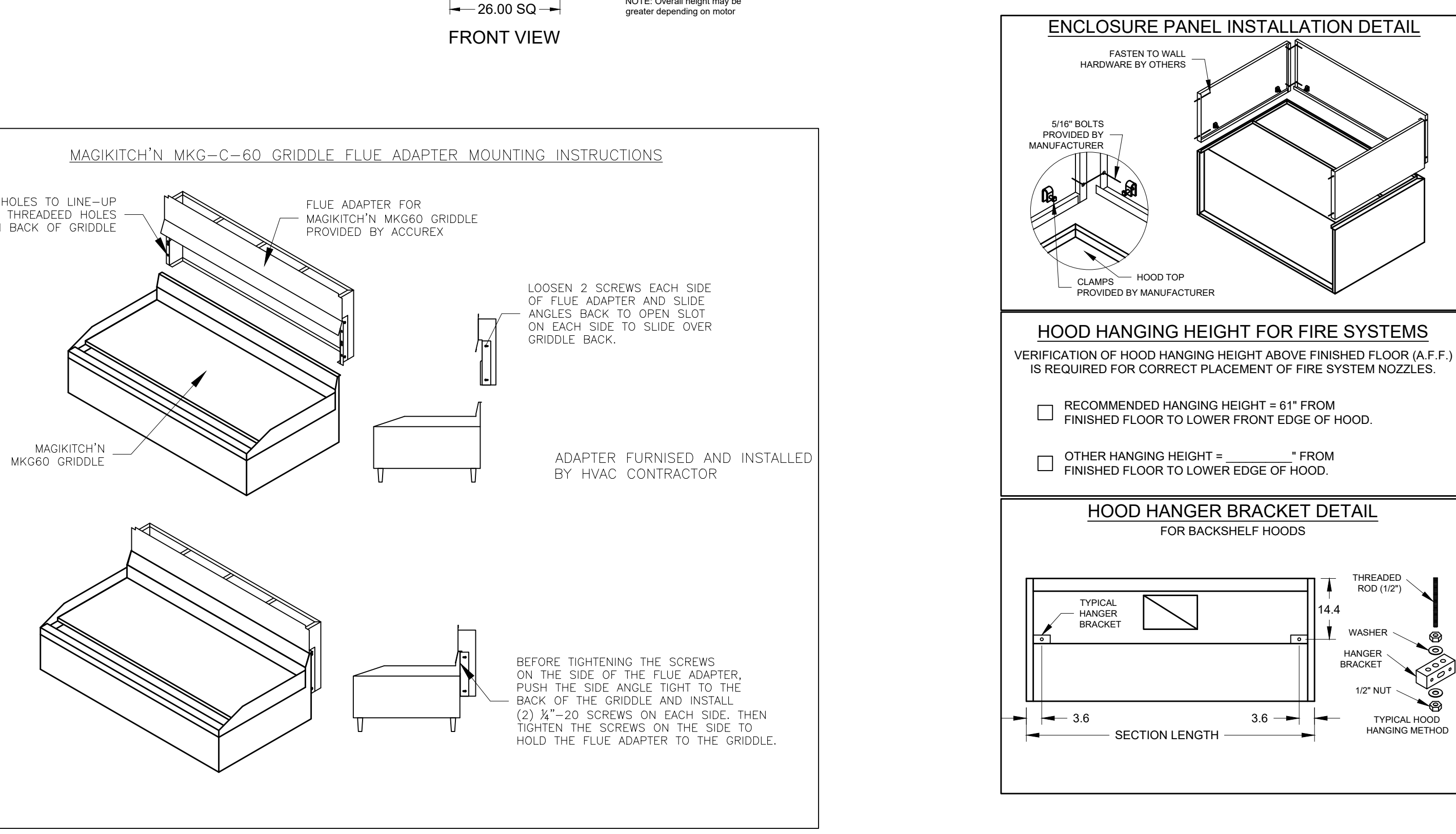
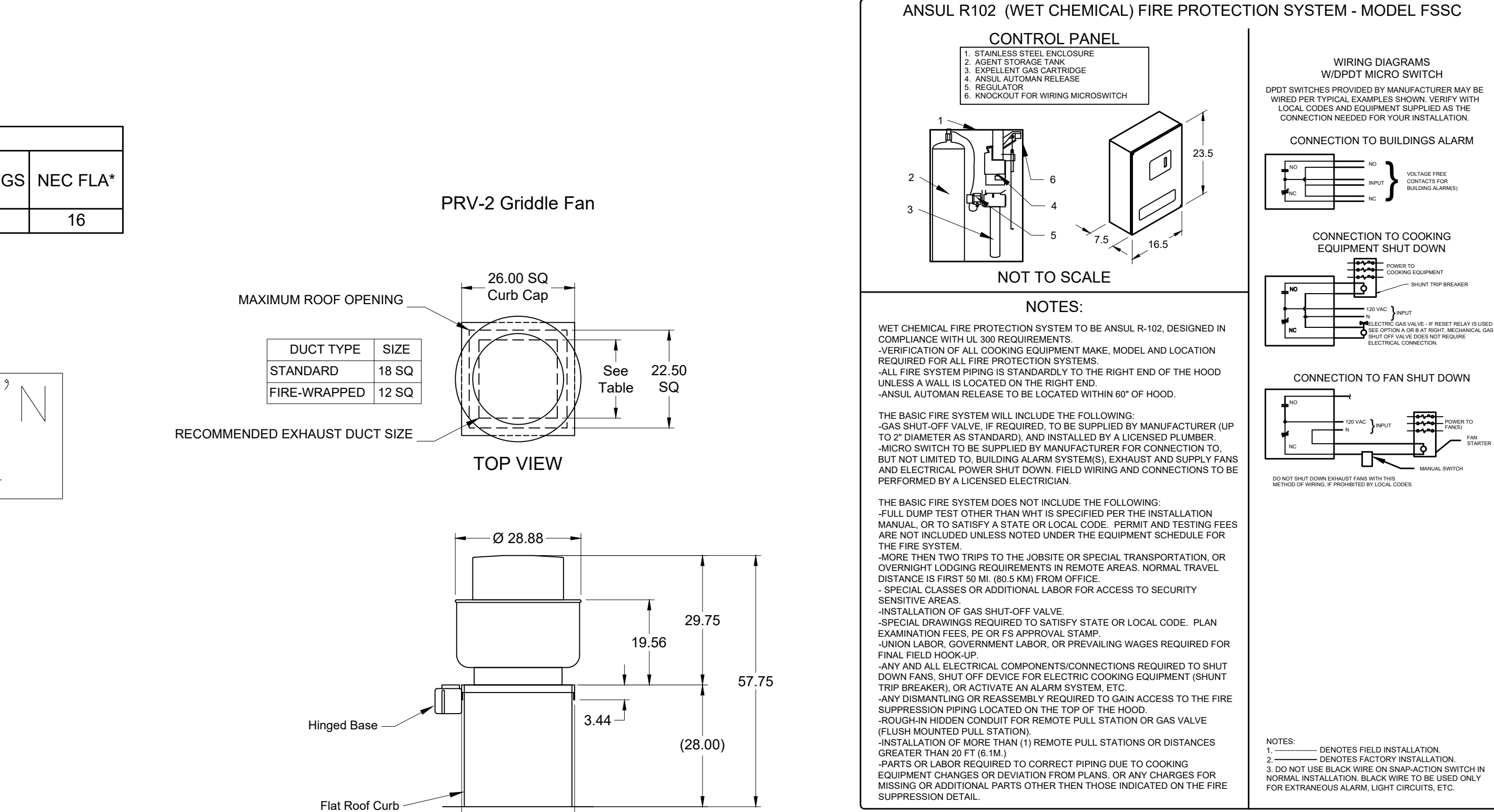
MARK: Griddle Hood - SECTION 1 PLAN VIEW

MUST USE WITH ONE OF THE FOLLOWING: STAR/MAGIKITCH'N OR VULCAN



| FIRE SYSTEM INFORMATION | | | | | | | | | | | | | | |
|-------------------------------|--------------------------|----------------|-------------|--------------|-------------|--------------|----------------------------------|--|--|--|--|--|--|--|
| MARK | MODEL | LOCATION | FLOW POINTS | | SUPPLY LINE | DETECTION | MARK(S) PROTECTED BY FIRE SYSTEM | | | | | | | |
| | | | HOODS | PCU | | | | | | | | | | |
| FIRE SUPPRESSION-GRIDDLE HOOD | ANSUL R-102 WET CHEMICAL | REMOTE MOUNTED | 6 UTILIZED | 11 AVAILABLE | CONTINUOUS | FUSIBLE LINK | GRIDDLE HOOD SECTION 1 | | | | | | | |

FIRE SYSTEM OPTIONS AND ACCESSORIES
 FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
 CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
 METAL BLOW-OFF CAPS - INCLUDED
 HOOD SUPPRESSION AGENT - INCLUDED - 3 GAL. - [(1) 3.0 TANK(S)]
 REMOTE PULL STATION - STANDARD - INSTALLATION AT SINGLE POINT OF EGRESS



| HOOD INFORMATION | | | | | | | | | | | | | | | | | |
|------------------|------------|-----------|-----------------------|-----------------|-------------------|----------------------|----------------------------|-----------|-----------|----|--|------|-------|---------|--------|-------------------|------------------|
| HOOD NO. | MARK | MODEL | HOOD DIMENSIONS (IN.) | | | HOOD CONSTR. | COOKING LOAD / DUTY RATING | TOTAL CFM | EXHAUST | | | | | SUPPLY | | TOTAL WEIGHT LBS. | SECTION LOCATION |
| | | | LENGTH | WIDTH | HEIGHT | | | | COLLAR(S) | | | CFM | S.P. | MUA CFM | AC CFM | | |
| 1 | FRYER HOOD | XXEP-83-S | 83 | TOP 23 BOT 3 | FRT 12 BACK 36 | 430 SS WHERE EXPOSED | MEDIUM | 1500 | 12 | 12 | | 1500 | 0.518 | | | 169.1 | SINGLE |

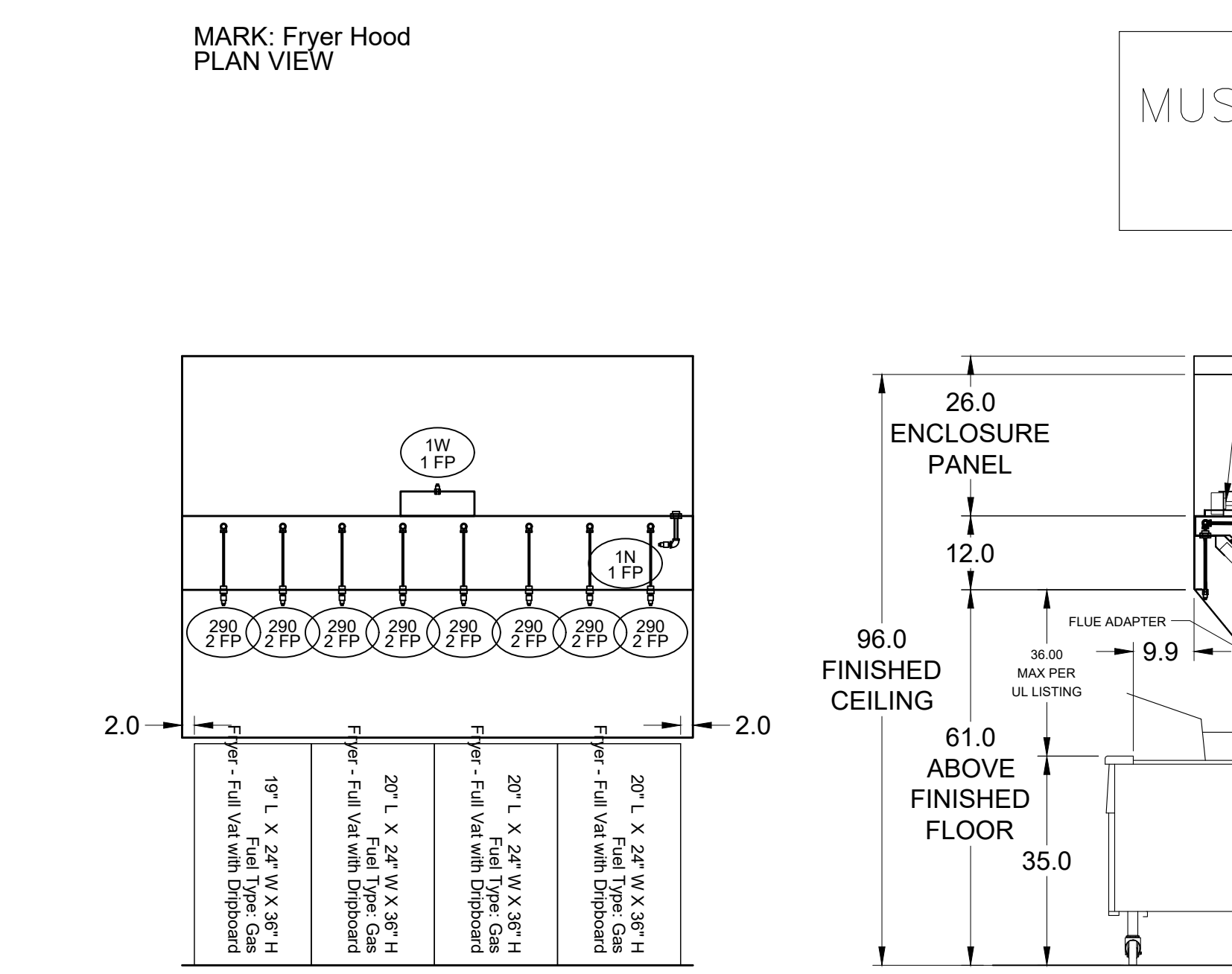
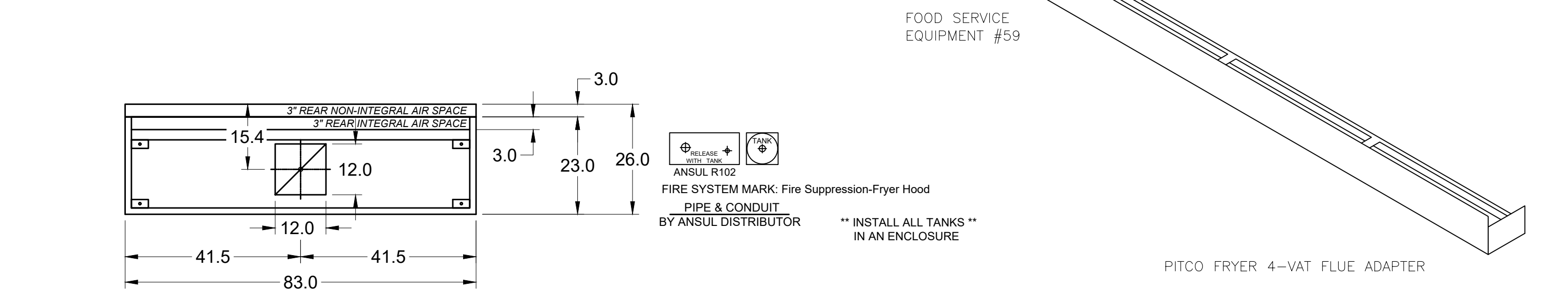
| HOOD INFORMATION | | | | | | | | | | | | | | | | | |
|------------------|------------|------------------|-----|--------------|---------------------------|-----|------------|--------------------|-------------|--|----------|--|--|--|--|--|--|
| HOOD NO. | MARK | LIGHTING DETAILS | | | GREASE FILTRATION DETAILS | | | UTILITY CABINET(S) | | | | | | | | | |
| | | FIXTURE TYPE | QTY | FOOT CANDLES | TYPE / MODEL | QTY | SIZE (IN.) | LOCATION | FIRE SYSTEM | | CONTROLS | | | | | | |
| 1 | FRYER HOOD | | | | X-TRACTOR | 5 | 16 | | | | | | | | | | |
| | | | | | STAINLESS STEEL | 0 | 20 | 16 | | | | | | | | | |

| HOOD OPTIONS | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|
| UL 710 LISTED W/ OUT EXHAUST FIRE DAMPER - UL #R25625 | | | | | | | | | | SPECIAL DESIGN REQUESTS | | | | |
| BACK NON-INTEGRAL AIR SPACE - 3 IN WIDE | | | | | | | | | | SDR #K1100559 - NEW PITCO 4L FRYER FLUE BYPASS SYSTEM | | | | |
| 26 IN HIGH CEILING ENCLOSURES - FRONT LEFT RIGHT - FIELD INSTALLED | | | | | | | | | | SDR #K1700974 - CULVERS 4VAT 2FIRE PROCESS - FRYER HOOD | | | | |
| FACTORY MOUNTED EXHAUST COLLAR(S) | | | | | | | | | | SDR #K1800795 - FIRE SYSTEM DEDUCT | | | | |
| PERFORMANCE ENHANCING LIP (PEL) TECHNOLOGY | | | | | | | | | | | | | | |
| STANDING SEAM CONSTRUCTION FOR SUPERIOR STRENGTH | | | | | | | | | | | | | | |

| Direct Drive Upblast Centrifugal Roof Exhaust Fan | | | | | | | | | | | | | | |
|---|-----------------|-------------|--------------|---------------------------|-----------------|----------------------|--------------|-----------|----------|-------------------|-----------|----------|----------|--|
| MARK INFORMATION | | | | | FAN INFORMATION | | | | | MOTOR INFORMATION | | | | |
| QTY | MARK | MODEL | VOLUME (CFM) | TOTAL EXTERNAL SP (IN WG) | FAN RPM | OPERATING POWER (HP) | WEIGHT (LB.) | SIZE (HP) | VIC/P | ENCLOSURE | MOTOR RPM | WINDINGS | NEC FLA* | |
| 1 | PRV-3 Fryer Fan | XCUE-140-VG | 1,500 | 1 | 1,365 | 0.46 | 92 | 1 | 115/60/1 | OP | 1725 | 1 | 16 | |

*NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory"

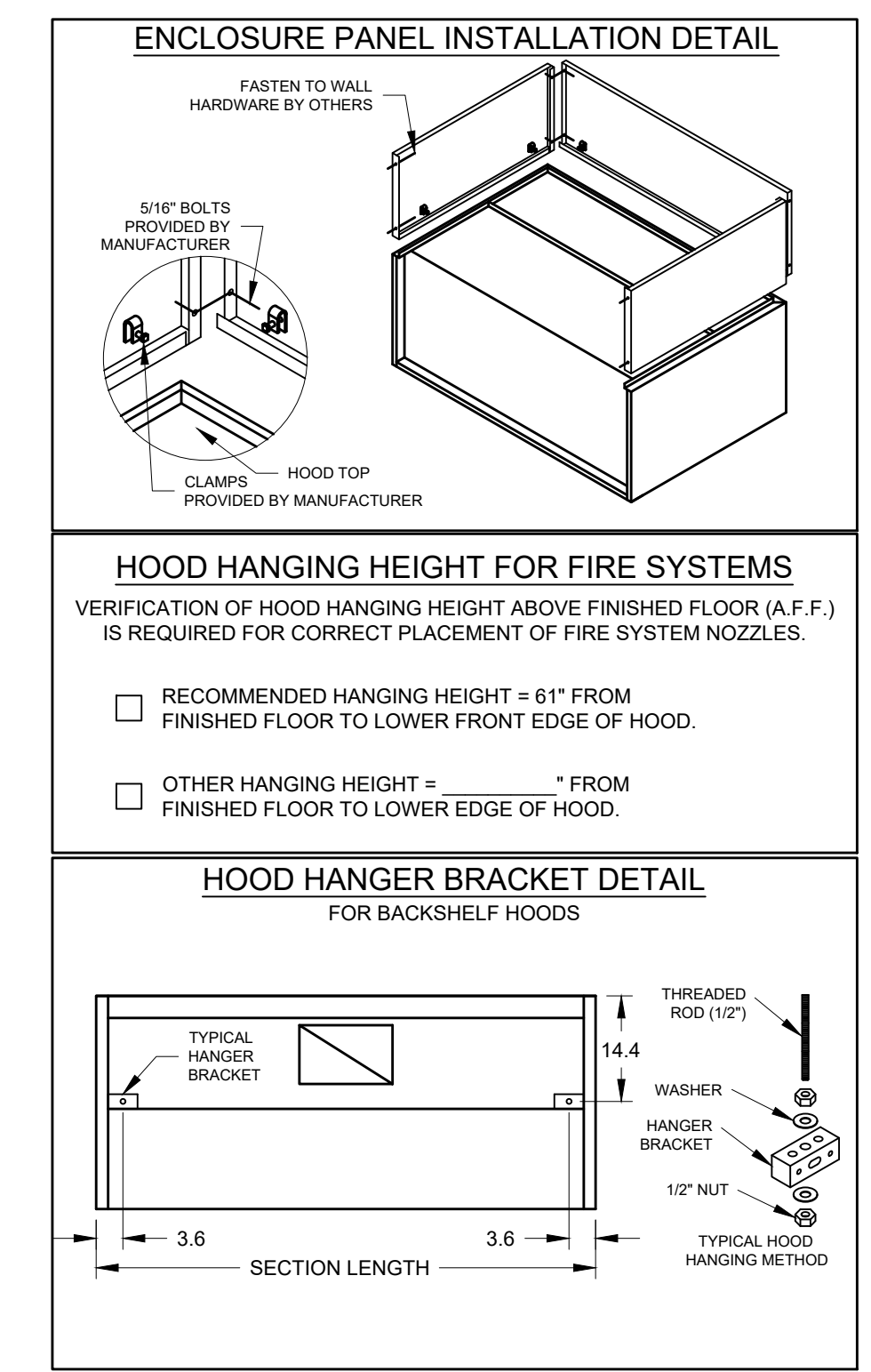
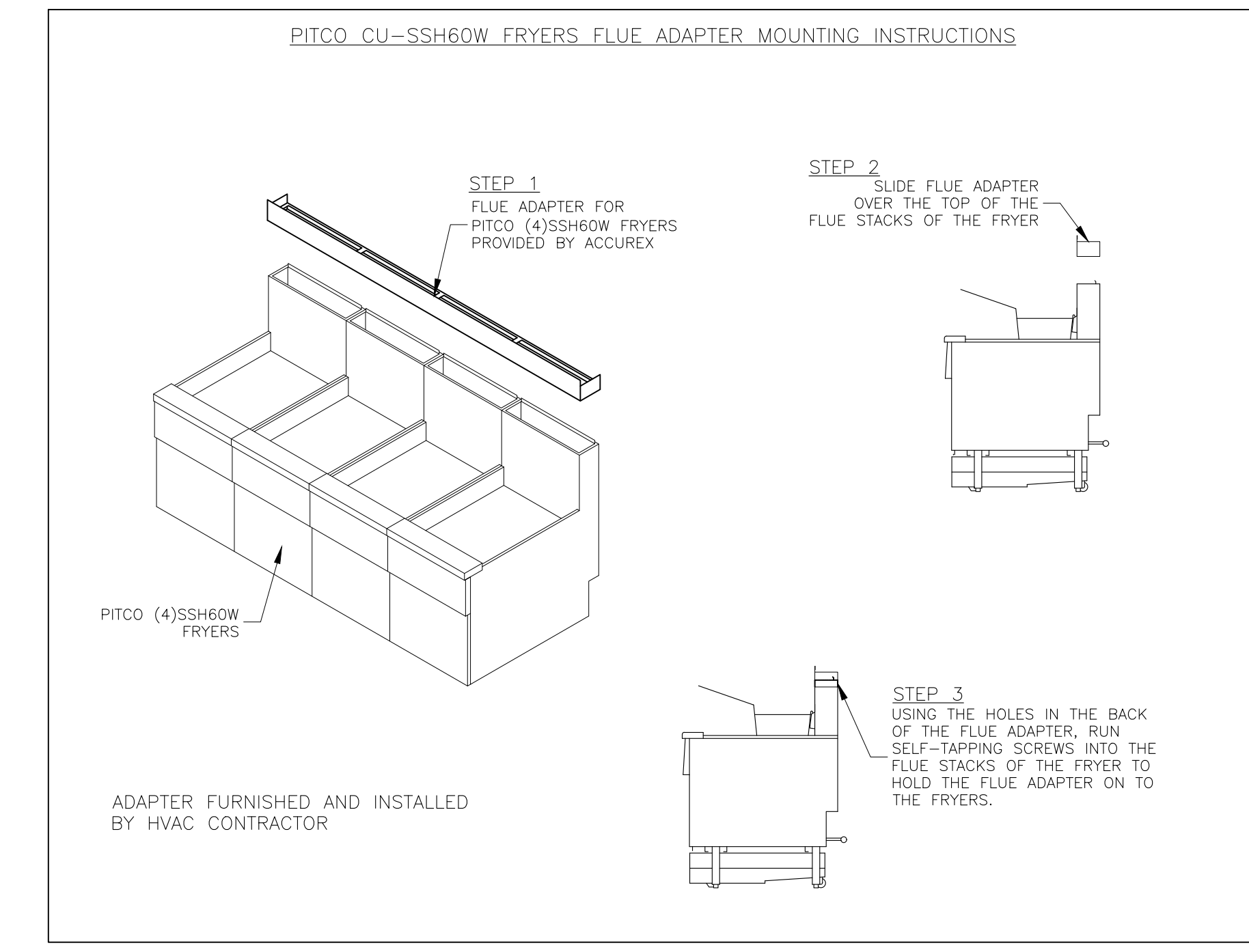
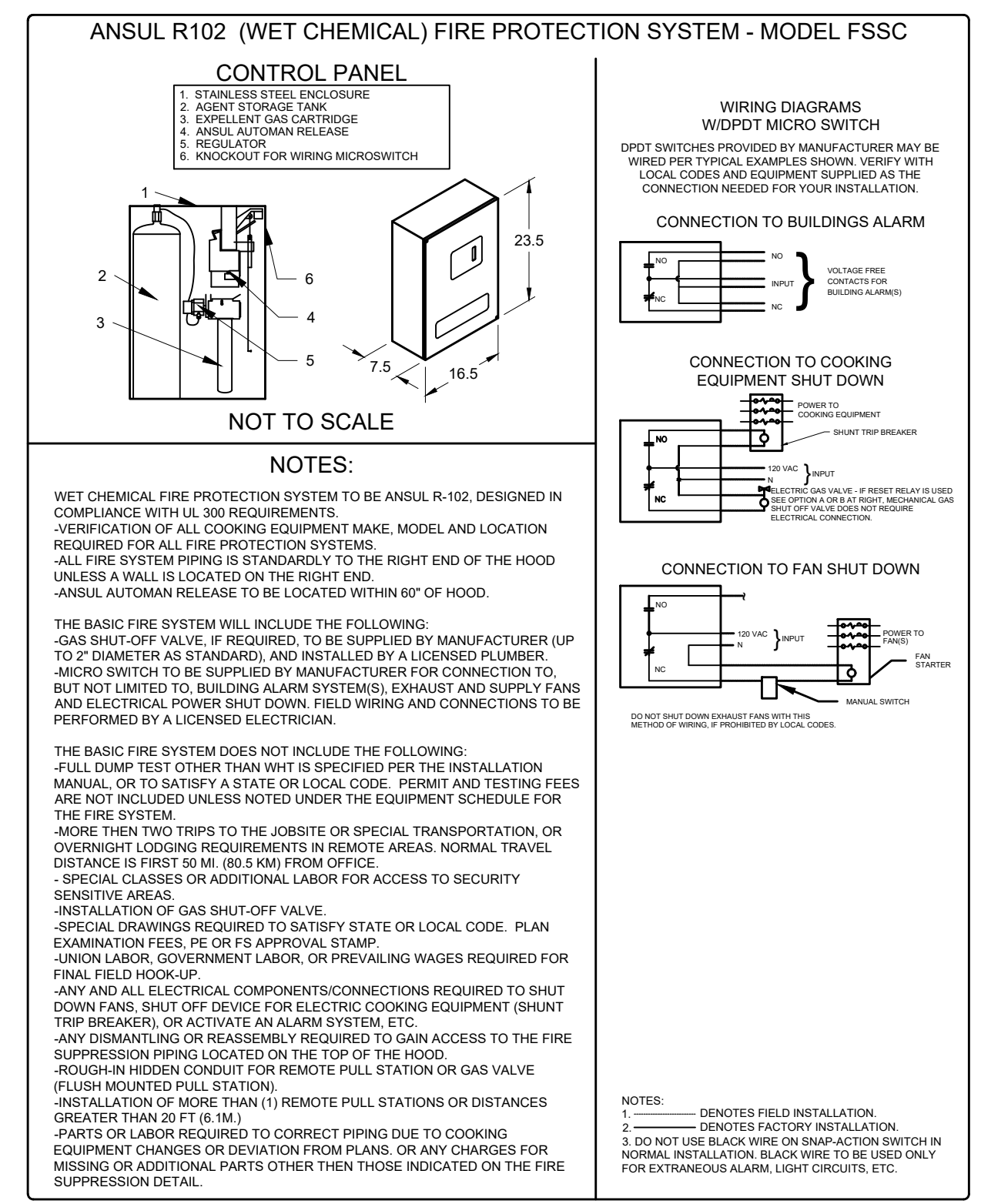
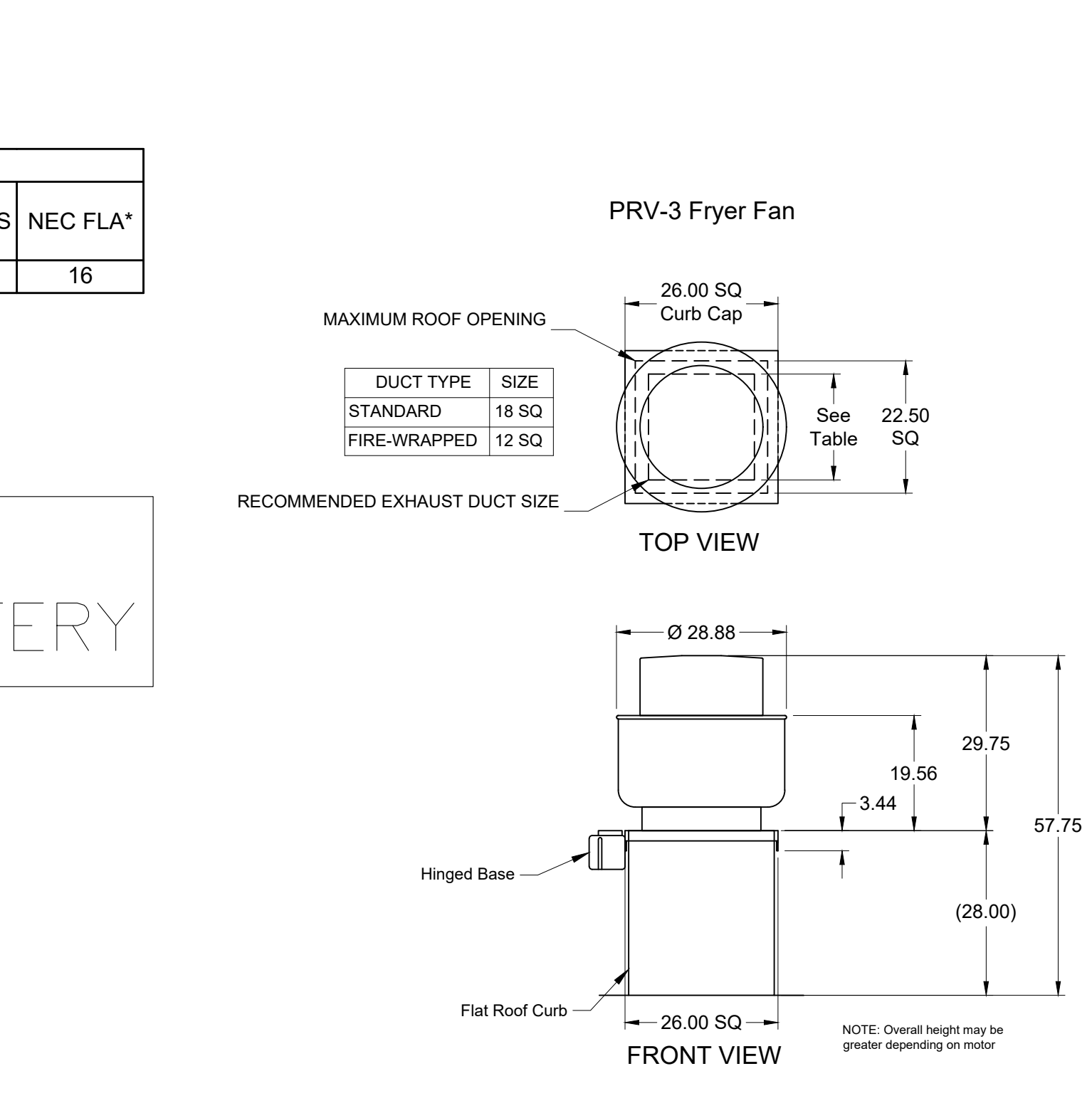
| PRV-3 Fryer Fan : SELECTED OPTIONS AND ACCESSORIES | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| One piece fully welded windband | | | | | | | | | | | | | | |
| Tapered bushing wheel hub | | | | | | | | | | | | | | |
| Breather tube outlet area min. 4.4 sq. in. (sizes 99-480), 2.0 sq. in. (sizes 60-95) | | | | | | | | | | | | | | |
| Min. windband material thickness: 0.051" aluminum (060-240), 0.064" aluminum (240HP, 240XP), 0.080" aluminum (sizes 300-480) | | | | | | | | | | | | | | |
| Larger Curb Cap Size - 26 Square | | | | | | | | | | | | | | |
| UL/cUL 705 Listed - Supplement SC - "Power Ventilators for Restaurant Exh. Appliances" (Formerly UL 762) | | | | | | | | | | | | | | |
| Switch, NEMA-3R, Toggle, Shipped with Unit | | | | | | | | | | | | | | |
| Hinge, Factory Installed | | | | | | | | | | | | | | |
| High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached) | | | | | | | | | | | | | | |
| Grease Trap (PN 475538) | | | | | | | | | | | | | | |
| Clean-out Port - Factory Installed | | | | | | | | | | | | | | |



SECTION 1 ELEVATION VIEW
MARK: ITEM #59
SECTION VIEW

| FIRE SYSTEM INFORMATION | | | | | | | | | |
|-----------------------------|--------------------------|----------------|-------------|--------------|-------------|--------------|----------------------------------|--|--|
| MARK | MODEL | LOCATION | FLOW POINTS | | SUPPLY LINE | DETECTION | MARK(S) PROTECTED BY FIRE SYSTEM | | |
| | | | HOODS | PCU | | | FRYER HOOD SECTION 1 | | |
| FIRE SUPPRESSION-FRYER HOOD | ANSUL R-102 WET CHEMICAL | REMOTE MOUNTED | 18 UTILIZED | 22 AVAILABLE | CONTINUOUS | FUSIBLE LINK | | | |

FIRE SYSTEM OPTIONS AND ACCESSORIES
 FULL INSTALLATION (INCLUDES PRE-PIPED HOOD(S) WITH DETECTION AND FACTORY COORDINATED INSTALL)
 CHROME SLEEVES FOR FACTORY PROVIDED APPLIANCES DROPS - INCLUDED
 METAL BLOW-OFF CAPS - INCLUDED
 GAS VALVE - INCLUDED - MECHANICAL SHUTOFF VALVE, 1.5", (ANSUL) - PART# ANSULMECHSHUTOFFVALVE150
 HOOD SUPPRESSION TANK - INCLUDED - 6 GAL. - (2) 3.0 TANK(S))
 REMOTE PULL STATION - STANDARD - FIELD INSTALLATION AT SINGLE POINT OF EGRESS
 TANK ENCLOSURES (STAINLESS STEEL) FOR REMOTE MOUNTING - INCLUDED



| HOOD NO. | MARK | MODEL | HOOD DIMENSIONS (IN.) | | | HOOD CONSTR. | COOKING LOAD / DUTY RATING | TOTAL CFM | EXHAUST COLLAR(S) | | | | | MUA CFM | AC CFM | TOTAL WEIGHT LBS. | SECTION LOCATION |
|----------|-------------------------|----------|-----------------------|-------|--------|--------------|----------------------------|-----------|-------------------|--------|------|-----|-------|---------|--------|-------------------|------------------|
| | | | LENGTH | WIDTH | HEIGHT | | | | WIDTH | LENGTH | DIA. | CFM | S.P. | | | | |
| 1 | ITEM 25 CONDENSATE HOOD | XD3-42-S | 42.0 | 42 | 24 | 300 SS 100% | | 350 | 7 | 7 | | 350 | 0.127 | | | 110 | SINGLE |

| HOOD NO. | MARK | LIGHTING DETAILS | | | BAFFLE FILTRATION DETAILS | | | UTILITY CABINET(S) | | | | |
|----------|-------------------------|------------------|-----|--------------|---------------------------|-----|------------|--------------------|-------------|------|-------|----------|
| | | FIXTURE TYPE | QTY | FOOT CANDLES | TYPE / MODEL | QTY | SIZE (IN.) | LOCATION | FIRE SYSTEM | SIZE | MODEL | CONTROLS |
| 1 | ITEM 25 CONDENSATE HOOD | | | | | | | | | | | |

HOOD OPTIONS
FACTORY MOUNTED EXHAUST COLLAR(S)

Direct Drive Centrifugal Roof Exhaust Fan

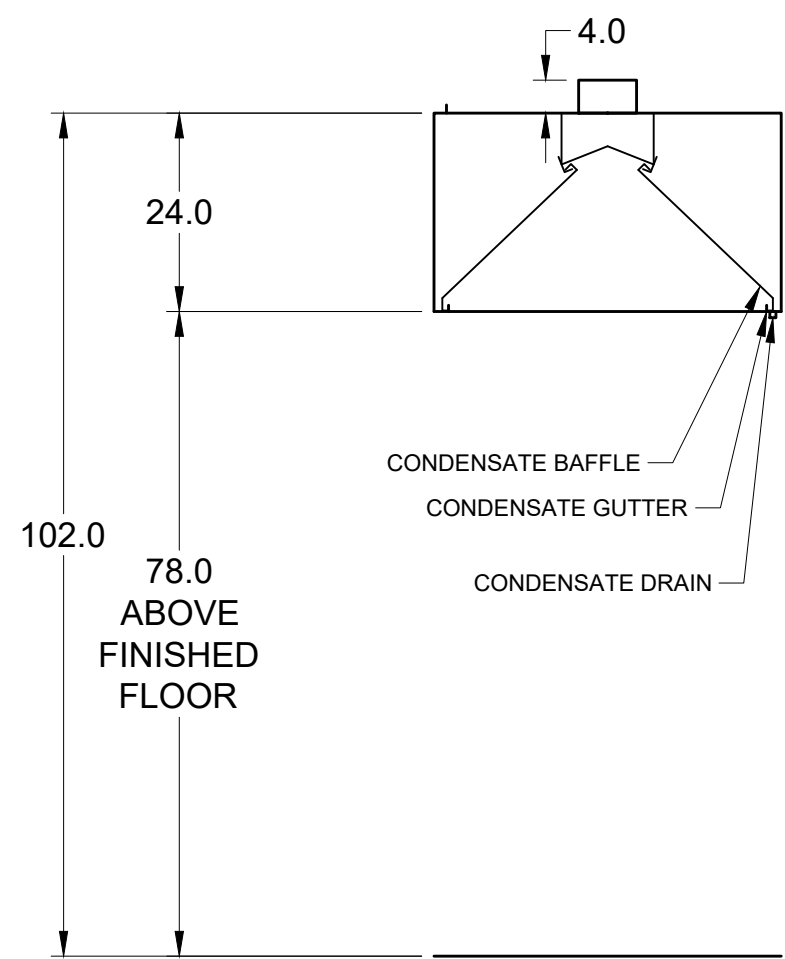
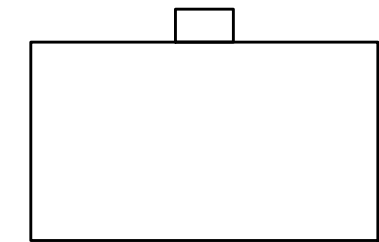
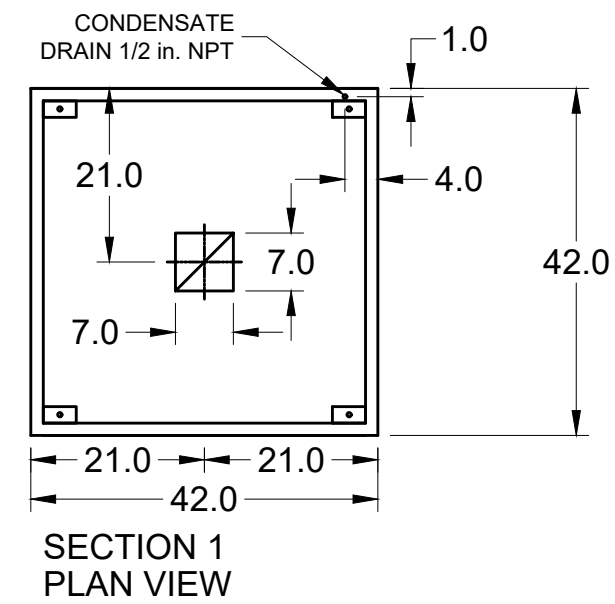
| MARK INFORMATION | | | FAN INFORMATION | | | | | MOTOR INFORMATION | | | | | |
|------------------|----------------------|-------------|-----------------|---------------------------|---------|----------------------|--------------|-------------------|----------|-----------|-----------|----------|----------|
| QTY | MARK | MODEL | VOLUME (CFM) | TOTAL EXTERNAL SP (IN WG) | FAN RPM | OPERATING POWER (HP) | WEIGHT (LB.) | SIZE (HP) | V/C/P | ENCLOSURE | MOTOR RPM | WINDINGS | NEC FLA* |
| 1 | PRV-1 Restroom | XRED-090-VG | 375 | 0.5 | 1,466 | 0.06 | 31 | 0.1 | 115/60/1 | TN | 1725 | 1 | NA |
| 1 | PRV-4 Condensate Fan | XRED-095-VG | 350 | 0.6 | 1,487 | 0.09 | 34 | 0.167 | 115/60/1 | TN | 1725 | 1 | 4.4 |

NEC FLA - Based on table 430.250 or 430.248 of National Electrical Code 2020. Actual motor FLA may vary for sizing thermal overload, consult factory

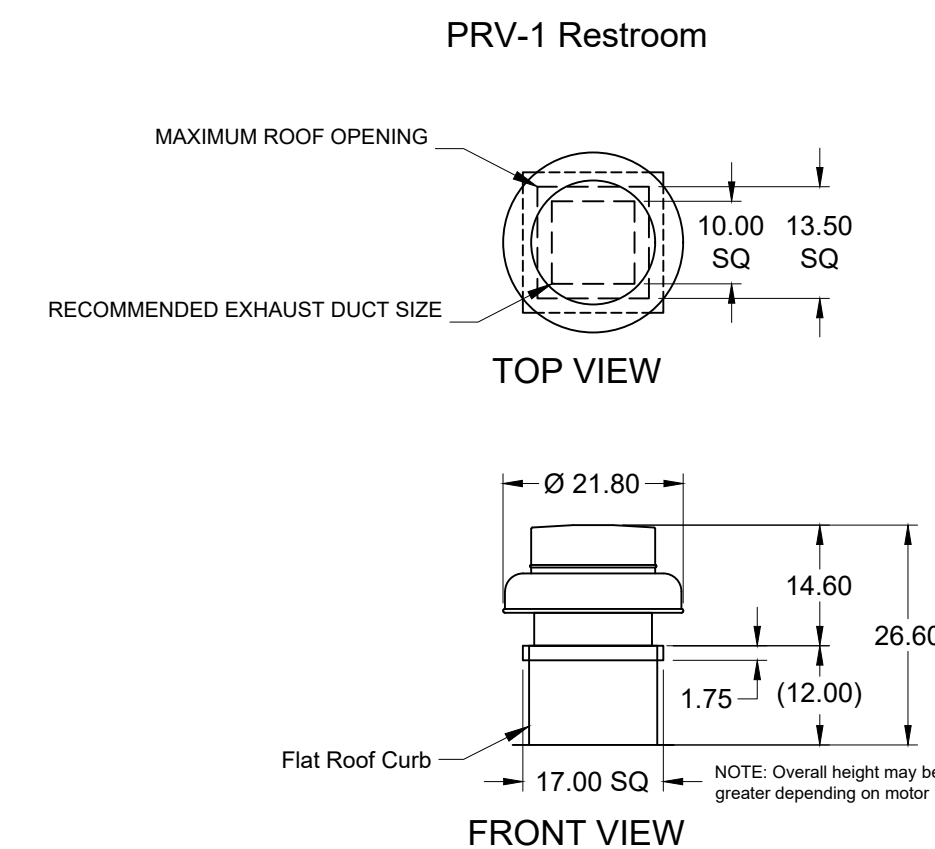
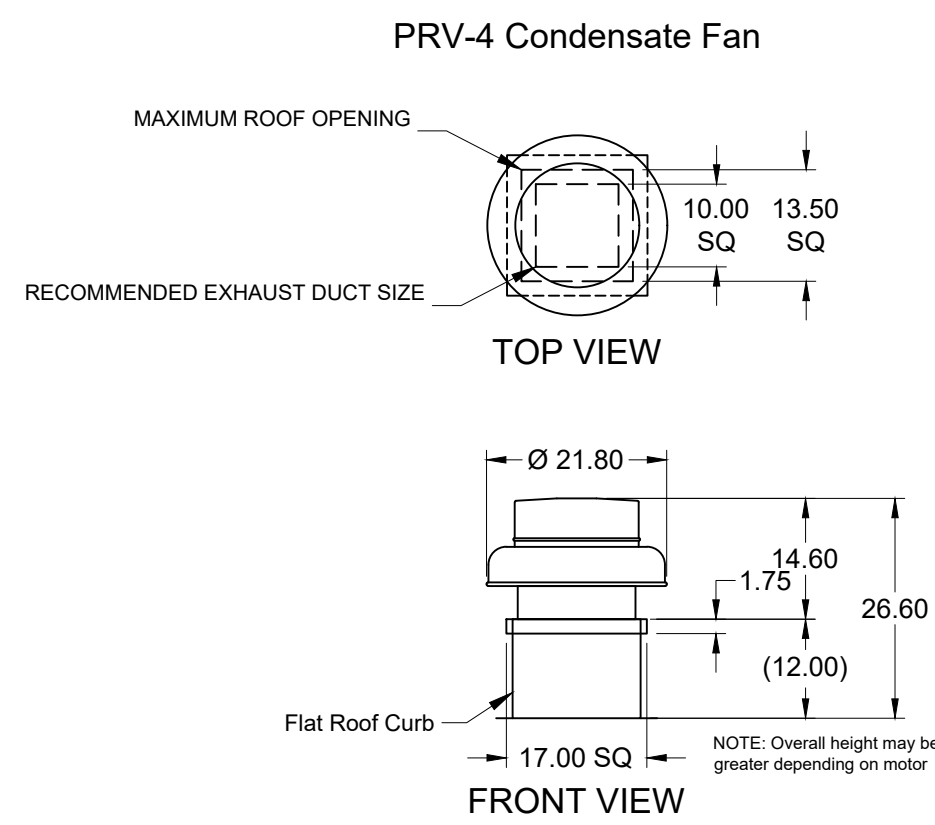
| PRV-1 Restroom : SELECTED OPTIONS AND ACCESSORIES | | | | PRV-4 Condensate Fan : SELECTED OPTIONS AND ACCESSORIES | | | |
|---|--|--|--|---|--|--|--|
| Standard Curb Cap Size - 17 Square | | | | Standard Curb Cap Size - 17 Square | | | |
| UL/cUL 705 Listed - "Power Ventilators" | | | | UL/cUL 705 Listed - "Power Ventilators" | | | |
| Switch, NEMA-1, Toggle, Shipped with Unit | | | | Switch, NEMA-1, Toggle, Shipped with Unit | | | |
| Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size | | | | Damper Shipped Loose, BD-100-PB-10X10, Gravity Operated, Not Coated, Nominal Size | | | |
| Birdscreen: Galvanized, nom. 84% Free Area | | | | Birdscreen: Galvanized, nom. 84% Free Area | | | |
| Composite Wheel Material | | | | Composite Wheel Material | | | |

| Ceiling Exhaust Fan | | | FAN INFORMATION | | | | | MOTOR INFORMATION | | | | |
|---------------------|-------|---------|-----------------|---------------------------|---------|----------------------|--------------|-------------------|----------|-----------|-----------|----------|
| QTY | MARK | MODEL | VOLUME (CFM) | TOTAL EXTERNAL SP (IN WG) | FAN RPM | OPERATING POWER (HP) | WEIGHT (LB.) | SIZE (HP) | V/C/P | ENCLOSURE | MOTOR RPM | WINDINGS |
| 1 | EF-1A | XCR-B80 | 75 | 0.125 | 881 | 0.01 | 10 | 0 | 115/60/1 | OP | 900 | 1 |

EF-1A : SELECTED OPTIONS AND ACCESSORIES
UL/cUL 507 Listed - Electric Fan
Solid State Speed Control, 6 Amp, Mounted and Wired Internally
Round Hooded Wall Cap, (PN: WC-6) Shipped Loose
Round Duct Connection
Adjustable easy installation mounting bracket
Standard Grille
Polypropylene Wheel Material
Can Be Used to Comply with: ASHRAE 62.2 and Washington State Energy Code



MARK: Item 25 Condensate Hood SECTION VIEW

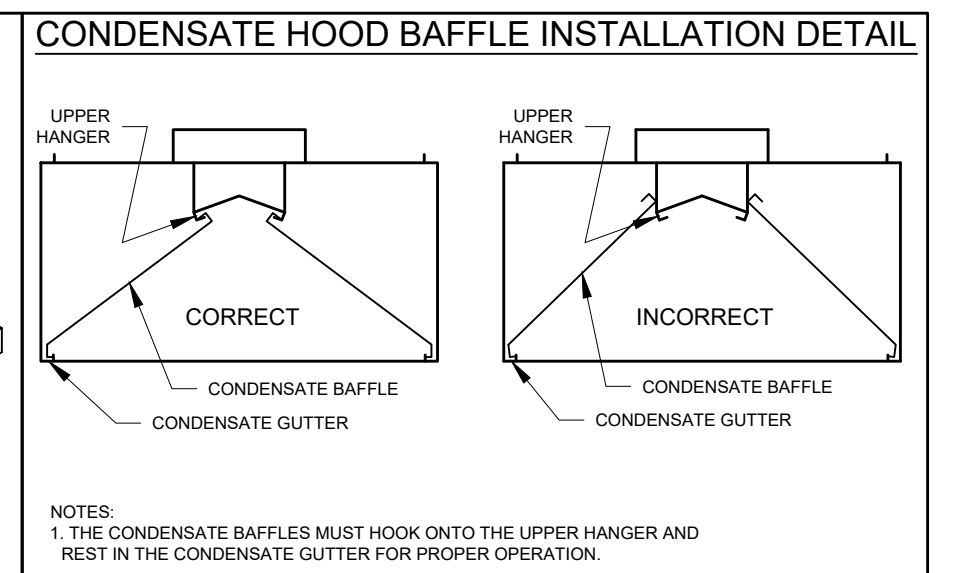
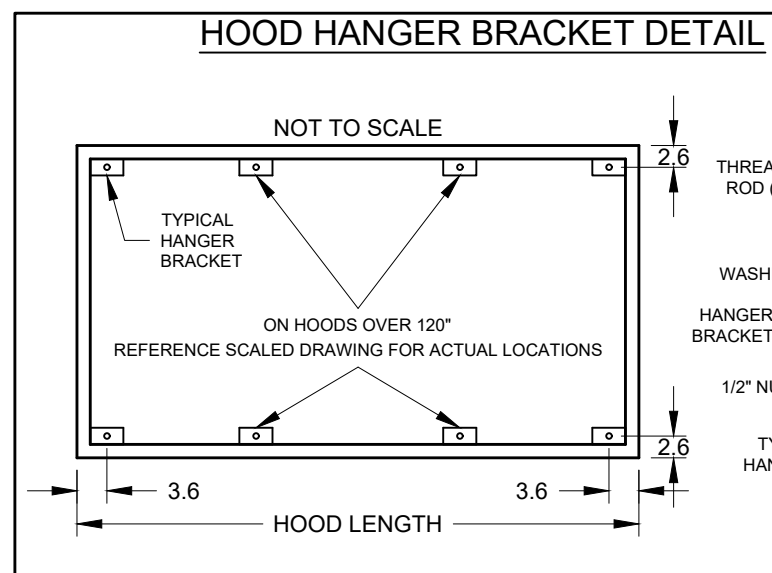
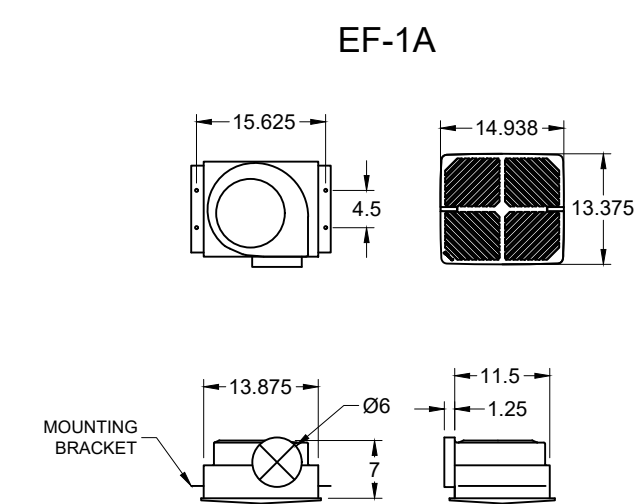
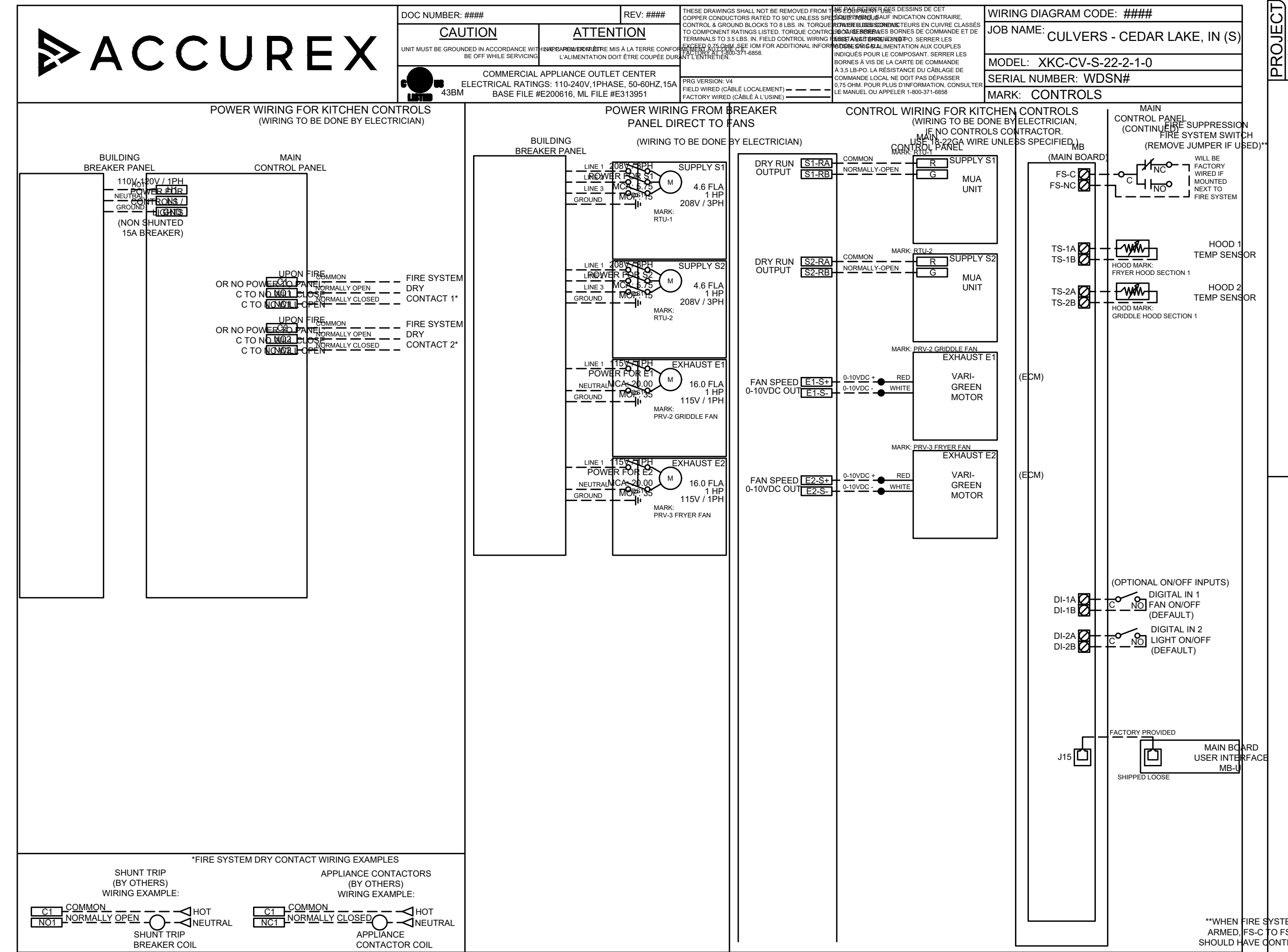


| CONTROL INFORMATION | | | | | | | | | | | | |
|---------------------|----------------------------|----------------------|------------------------|------------|----------------|--|--|--|--|--|--|--|
| MARK | ELECTRICAL CONTROL PACKAGE | | | | USER INTERFACE | | | | | | | |
| | MODEL | LOCATION | TYPE | LOCATION | | | | | | | | |
| CONTROLS | XKC-CV-S-22-2-1-0 | SHIP LOOSE ENCLOSURE | FULL COLOR TOUCHSCREEN | SHIP LOOSE | | | | | | | | |

| FANS CONTROLLED | | | | | | | | | | | |
|-----------------|---------|-----|-------------------|------|------|----------|------------|-------|-------------|------------------------|--------------|
| FAN # | TYPE | FAN | FAN MARK | ZONE | CFM | MOTOR HP | MOTOR VOLT | CYCLE | MOTOR PHASE | MOTOR STARTER IN PANEL | VFD IN PANEL |
| 1 | SUPPLY | S1 | RTU-1 | 1 | 1500 | 1 | 208 | 60 | 3 | NO | NO |
| 2 | SUPPLY | S2 | RTU-2 | 2 | 1500 | 1 | 208 | 60 | 3 | NO | NO |
| 3 | EXHAUST | E1 | PRV-2 GRIDDLE FAN | 2 | 1500 | 1 | 115 | 60 | 1 | NO | NO |
| 4 | EXHAUST | E2 | PRV-3 FRYER FAN | 1 | 1500 | 1 | 115 | 60 | 1 | NO | NO |

CONTROL FEATURES
TEMP SENSORS (FACTORY INSTALLED) - QTY. 2
DRY FIRE CONTACTS - QTY. 2
EXHAUST MAX DURING FIRE
SUPPLY OFF DURING FIRE

SPECIAL DESIGN REQUESTS
SDR #K2000462 - CULVERS CONTROL PANEL - EXTRA SET OF FIRE CONTACTS - REVISE WIRING DIAGRAMS



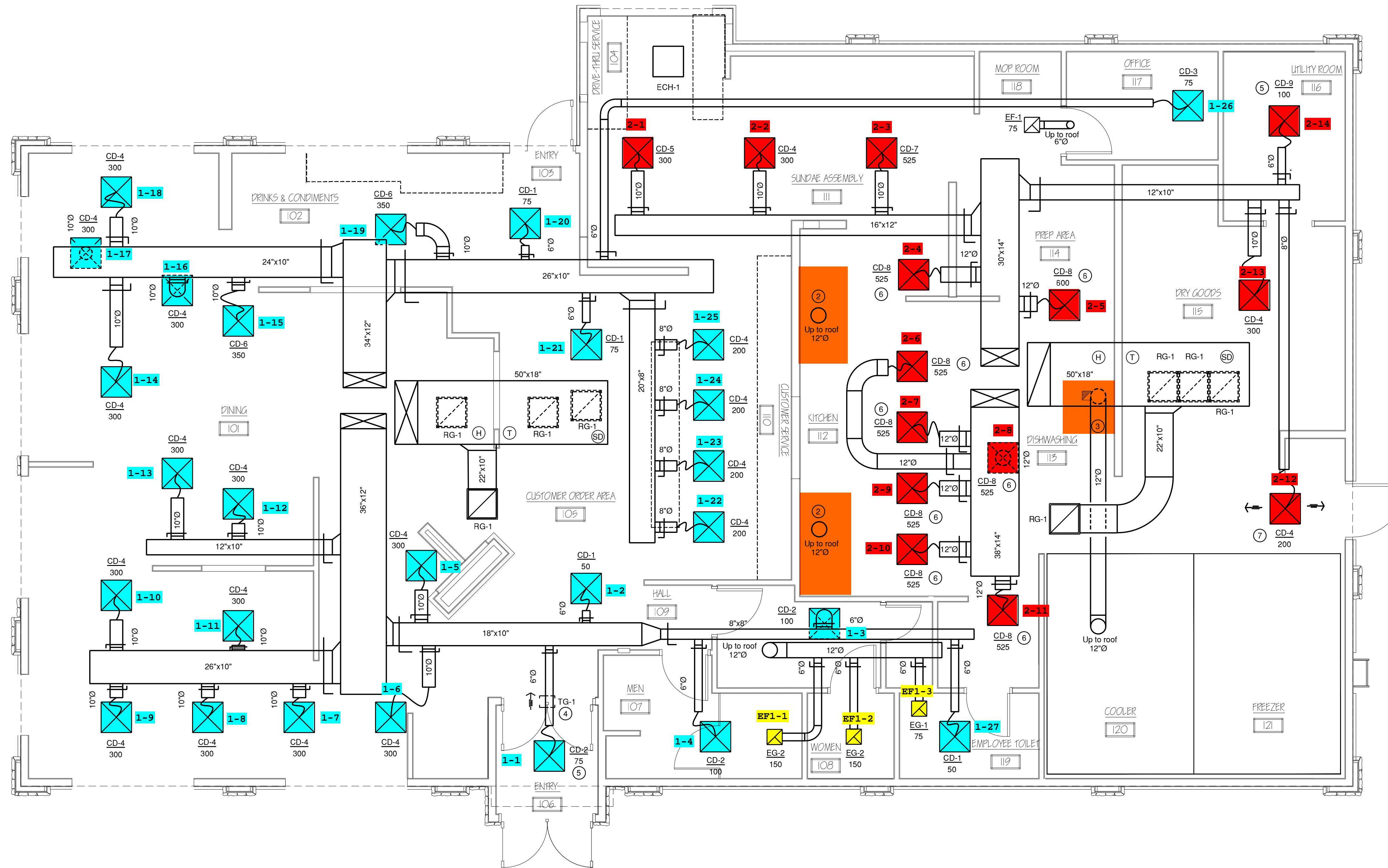
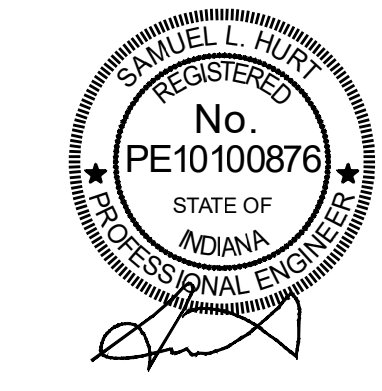
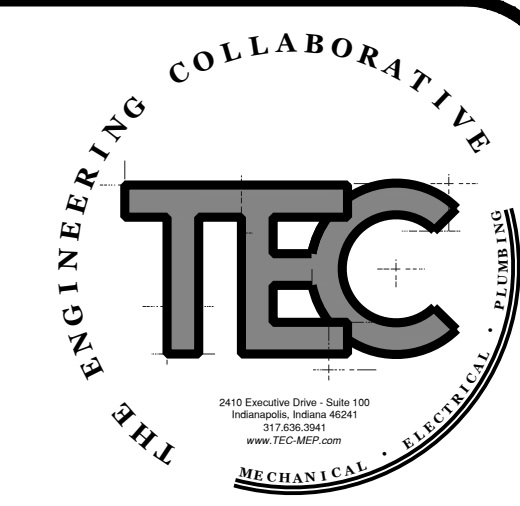
PROJECT: 12/4/2019
MARK: ITEM 25 CONDENSATE HOOD PRV-1 RESTROOM EF-1A CONTROLS
ACCUREX - W.I.A PHILLIP KRAFT
PHILLIP.KRAFT@ACCUREX.COM 262-227-7865
ACCUREX
50 FT. CABLE
SHIPPED LOOSE
MAIN BOARD USER INTERFACE MB-J

General Notes:

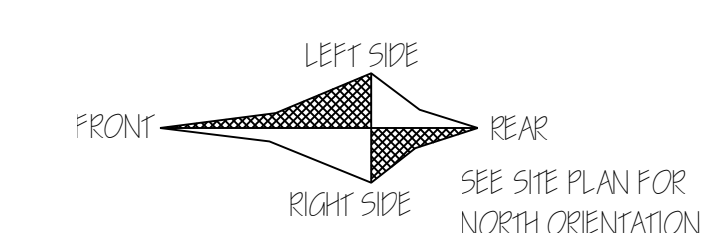
- These plans are diagrammatic in nature, and do not represent every necessary offset and fitting. Contractor shall install his work in a manner that will conform with the structure. Contractor shall avoid obstructions, preserve head room and maintain maximum clearance without additional cost to the owner.
- Conceal all linesets, piping, power wiring, control wiring and control components unless otherwise noted. If concealment is not possible, contact Engineer for alternatives prior to fabrication.
- Insulate all interior linesets with 1/2" thick, flexible elastomeric insulation. Insulate exterior linesets with 1" thick flexible elastomeric insulation with external .020" aluminum protective jacket.
- Sheet metal supply ductwork in concealed spaces shall be insulated with 1 1/2" thick, .75 PCF density, fiberglass ductwrap. All ductwork in unconditioned spaces shall be insulated with 2" thick, 1.0 PCF density, fiberglass ductwrap. (Min R6)
- Phenolic duct by Pal-Duct or Kool-Duct is an acceptable alternative to sheetmetal duct and insulation in concealed spaces. Use flanged joints.
- Keep all ductwork, duct system and equipment openings covered with adhesive duct protective wrap like VentureTape 1512, until system start-up. This is to prevent intrusion of construction dirt and debris into the duct system, and HVAC equipment.
- If any questions arise concerning the HVAC requirements of these documents, please contact The Engineering Collaborative at (317) 636-3941, prior to bidding, fabrication or installation of equipment.
- Sheet metal transitions by Sheet Metal Contractor.
- Refer to detail sheets M-5 thru M-6 for additional requirements and information that applies to this project.

Plan Notes:

- Grease duct.
- Connect duct to dish hood.
- Center above door.
- 3-Way diffuser.
- Perforated diffuser.
- 2-Way diffuser.



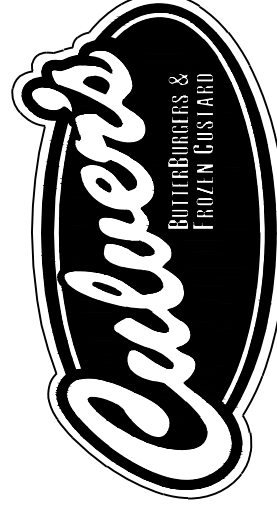
HVAC PLAN
SCALE: 1/4" = 1'-0"



WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC

| Date | Revision | By |
|------|----------|----|
| | | |
| | | |
| | | |

Culver Franchising System, LLC
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980



CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
9717 WEST 133RD AVE

Sheet Contents:
HVAC PLAN

| | |
|-------------|---------------|
| Project No. | 220200 |
| Drawn By | EZY |
| Date | Feb. 24, 2023 |

Sheet
M-2

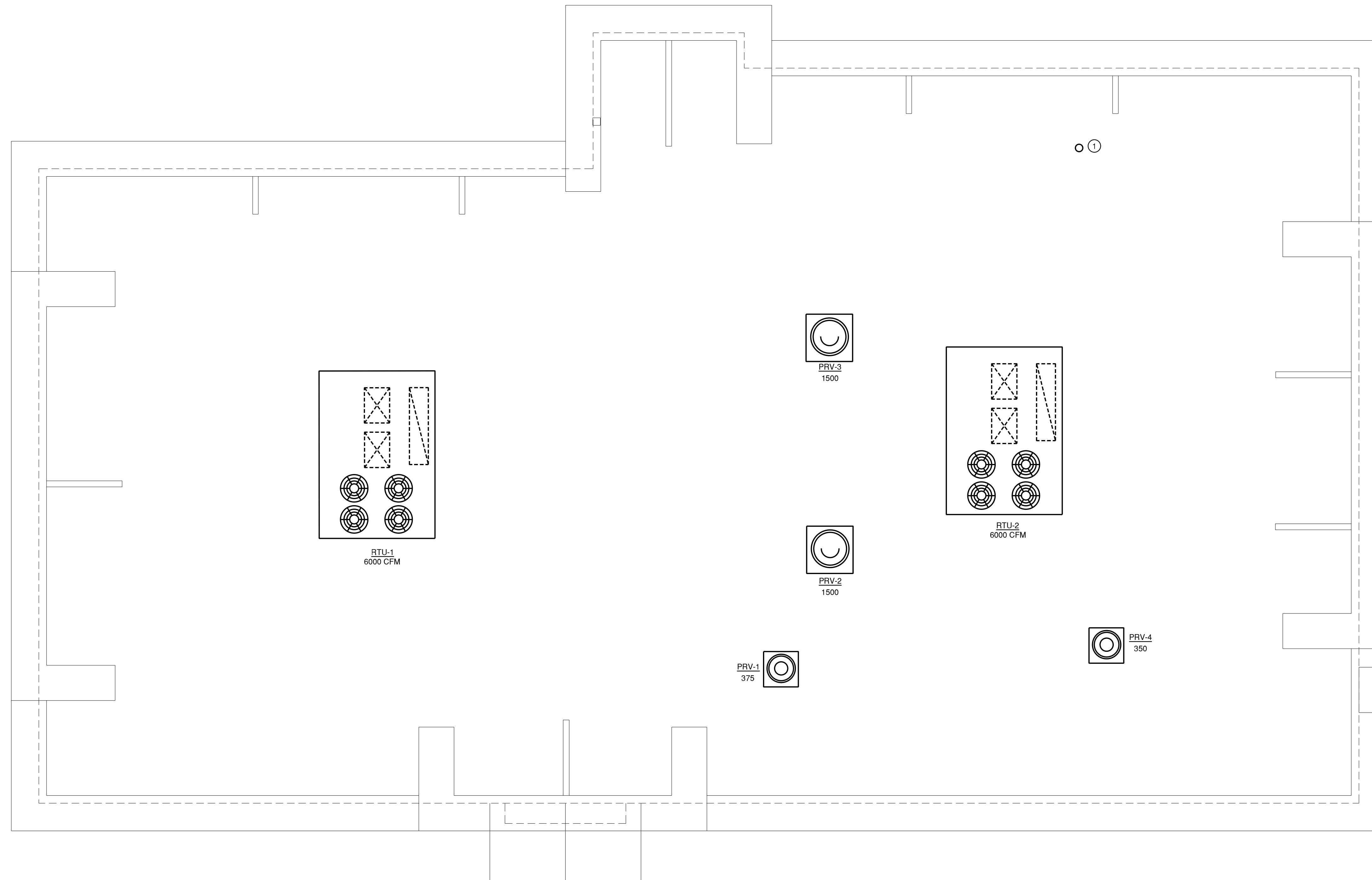
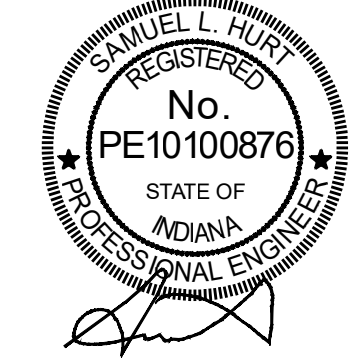
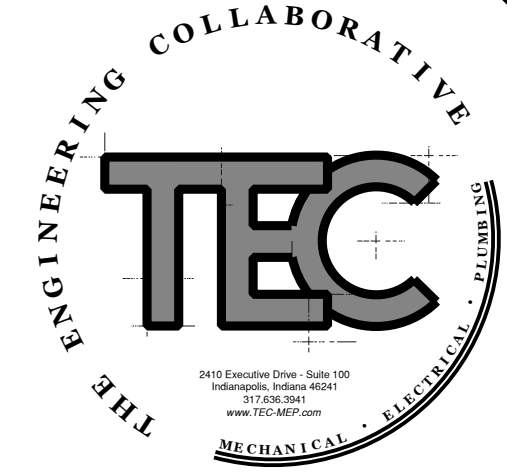
General Notes:

1. These plans are diagrammatic in nature, and do not represent every necessary offset and fitting. Contractor shall install his work in a manner that will conform with the structure. Contractor shall avoid obstructions, preserve head room and maintain maximum clearance without additional cost to the owner.
2. Conceal all linesets, piping, power wiring, control wiring and control components unless otherwise noted. If concealment is not possible, contact Engineer for alternatives prior to fabrication.
3. Insulate all interior linesets with 2" thick, flexible elastomeric insulation. Insulate exterior linesets with 1" thick flexible elastomeric insulation with external .020" aluminum protective jacket.
4. Sheet metal supply ductwork in concealed spaces shall be insulated with 1/2" thick, .75 PCF density, fiberglass ductwrap. All ductwork in unconditioned spaces shall be insulated with 2" thick, 1.0 PCF density, fiberglass ductwrap. (Min R6)

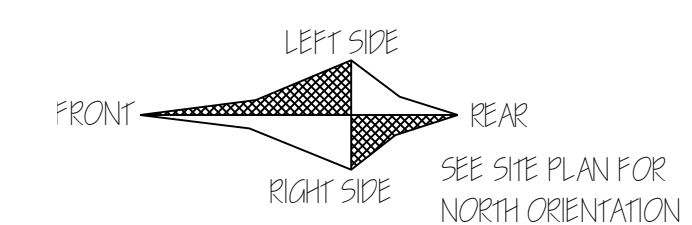
5. Phenolic duct by Pal-Duct or Kool-Duct is an acceptable alternative to sheetmetal duct and insulation in concealed spaces. Use flanged joints.
6. Keep all ductwork, duct system and equipment openings covered with adhesive duct protective wrap like VentureTape 1512, until system start-up. This is to prevent intrusion of construction dirt and debris into the duct system, and HVAC equipment.
7. If any questions arise concerning the HVAC requirements of these documents, please contact The Engineering Collaborative at (317) 636-3941, prior to bidding, fabrication or installation of equipment.
8. Sheet metal transitions by Sheet Metal Contractor.
9. Refer to detail sheets M-5 thru M-6 for additional requirements and information that applies to this project.

Plan Notes:

- ① Provide gravity relief on roof like Greenheck model GRSR-8.



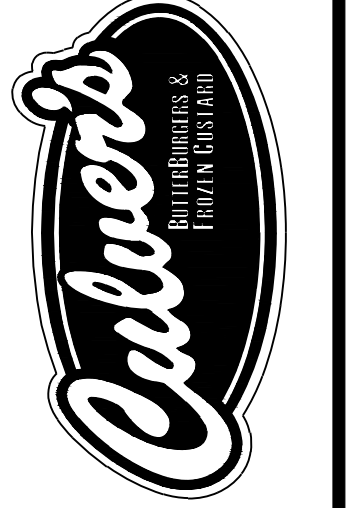
HVAC ROOF PLAN
SCALE: 1/4" = 1'-0"



WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC

| Date | Revision | By |
|------|----------|----|
| | | |
| | | |
| | | |

Culver Franchising System, LLC
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980



CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
9717 WEST 133RD AVE

Sheet Contents:

| |
|---------------------|
| HVAC ROOF PLAN |
| Project No: 220200 |
| Drawn By: EZY |
| Date: Feb. 24, 2023 |

Sheet
M-3

LENNOX SETTINGS FOR CULVERS

Kitchen Unit

Parameter 3.01 HEAT DELAY NEEDS TO BE SET TO "DISABLED". CONTROL PARAMETER 3.01=0 Pg. 92
 ECONOMIZER DIP SWITCHES A56 (EM1) NEED TO BE SET TO "GLOBAL" MODE. 1=ON 2=OFF (PG. 5 FIG 8)
 ECONOMIZER MIN POSITION POTENTIOMETER NEEDS TO BE DETERMINED AND SET BY AIR BALANCER. (Pg. 52 FIG 33)
 BOTH THE THERMOSTAT AND THE HOOD FANS MUST BE TIED INTO TB1 TERMINAL 8&9 FOR OCC/UNOCC CONTROL.
 FRESH AIR TEMPERING (HEATING) CONTROL PARAMETER 6.20=160 "-55F" (KITCHEN IS USUALLY IN COOLING MODE)
 (PARAMETER 6.20 Pg 99; x CHARTS Pg 109)

Dining Room Unit

PARAMETER 3.01 HEAT DELAY NEEDS TO BE SET TO "DISABLED". CONTROL PARAMETER 3.01=0 Pg 92
 ECONOMIZER DIP SWITCHES A56 (EM1) NEED TO BE SET TO ECONOMIZER TYPE PURCHASED/INSTALLED. 1=? 2=?
 (Pg 5 FIGURE 8)
 ECONOMIZER MIN POSITION POTENTIOMETER NEEDS TO BE DETERMINED AND SET BY AIR BALANCER. (Pg 52 FIGURE 33)
 THE THERMOSTAT MUST BE TIED INTO TB1 TERMINAL 8&9 FOR OCC/UNOCC CONTROL
 FRESH AIR TEMPERING (HEATING) CONTROL PARAMETER 6.20=142 "68F" (ROOM NEUTRAL)
 (PARAMETER 6.20 PAGE 99; x CHARTS PAGE 109)

OTHER PARAMETERS THAT WE DIDN'T SET, BUT ARE PART OF START-UP:

- ROOM SET POINT
- REMOTE SENSOR OPERATION
- TEMP DEADBANDS

CHECK FOR CORRECT OPERATION AND WIRING OF ALL SENSORS.

NATIONAL ACCOUNT PROGRAM

1. LENNOX INDUSTRIES, INC. - ROOFTOP HVAC EQUIPMENT

National Accounts Sales: (800) 367-6285 Option #1 lennoxind.com

National Account Technical Support: (800) 367-6285 Option #2 lennoxind.com

2. ACCUREX/ GREENHECK FAN CORPORATION - KITCHEN HOODS, EXHAUST FANS, ROOF CURBS, ANSUL SYSTEMS, ACCESSORIES AND TEST AND BALANCE

CONTACT Phillip Kraft @ 1-262-227-7865 or phillip.kraft@accurex.com
 Secondary contact Brad Borchardt 1-715-551-0809 brad.borchardt@accurex.com or Abdy Jacobs andy.jacobs@accurex.com
 ACCUREX WILL PROVIDE BALANCED AIRFLOW AND FUNCTIONAL CHARACTERISTICS OF THE HVAC AS THEY RELATE TO AIRFLOW AND RESISTANCE ONLY.
 SERVICES TO BE PERFORMED BY A CERTIFIED NEBB FIRM AND ITS MANAGING GROUP - NATIONAL TAB

3. CARNES COMPANY - DIFFUSERS AND GRILLES

National Accounts Sales: Chris Stratton @ (608) 845-6411 cstratton@carnes.com
 National Accounts Rep: Brian Baker @ (608) 845-6411 bbaker@carnes.com

CONTROL NOTES

1. WIRE RTU-1, RTU-2 TO SHUT-DOWN & EXHAUST HOOD FANS TO CONTINUE TO RUN UPON ACTIVATION OF THE ANSUL SYSTEM.
2. WIRE RTU-1 & RTU-2 TO SHUT-DOWN UPON ACTIVATION OF ANY IN-DUCT SMOKE DETECTOR.
3. OCCUPIED MODE: FANS IN RTU-1 & RTU-2, EXHAUST FANS PRV-1, 2 & 3 AND EF-1 TO RUN CONTINUOUSLY.
4. UNOCCUPIED MODE: FANS IN RTU-1 & RTU-2 TO RUN ONLY WHEN COOLING OR HEATING IS CALLED FOR.

| Terminal Outlets | | | | | | | |
|------------------|------------------|--------------|---------------------|-----------------|-----------------|--------------|---------|
| Mark | Function | Carnes Model | Airflow Range (CFM) | Face Size (in.) | Neck Size (in.) | Color | Remarks |
| CD-1 | Supply Diffuser | SFTB24 | 50-140 | 24 x 24 | 60 | By Architect | 1,2,3 |
| CD-2 | Supply Diffuser | SKSA | 50-140 | 24 x 24 | 60 | By Architect | 1,2,3 |
| CD-3 | Supply Diffuser | SJTB24 | 50-140 | 24 x 24 | 60 | By Architect | 1,2,3,4 |
| CD-4 | Supply Diffuser | SFTB24 | 201-325 | 24 x 24 | 100 | By Architect | 1,2,3 |
| CD-5 | Supply Diffuser | SJTB24 | 201-325 | 24 x 24 | 100 | By Architect | 1,2,3,4 |
| CD-6 | Supply Diffuser | SFTB24 | 326-475 | 24 x 24 | 120 | By Architect | 1,2,3 |
| CD-7 | Supply Diffuser | SFTB24 | 476-650 | 24 x 24 | 140 | By Architect | 1,2,3 |
| CD-8 | Supply Diffuser | SPRB22414 | 476-650 | 24 x 24 | 140 | By Architect | 1,2,3 |
| CD-9 | Supply Diffuser | SKEA | 50-140 | 24 x 24 | 60 | By Architect | 1,2,3 |
| EG-1 | Exhaust Register | RAPAH | 0-100 | 12 X 12 | 60 | By Architect | 1,2,3 |
| EG-2 | Exhaust Register | RTLAH | 101-200 | 12 X 12 | 60 | By Architect | 1,2,3,5 |
| RG-1 | Return Grille | RAPMF | 1001-1500 | 24 X 24 | 22 X 22 | By Architect | 1,2,3,7 |
| TG-1 | Transfer Grille | RSABH | 0 | 12 X 4 | 12 X 4 | By Architect | 1,2,3,6 |

Notes:
 1. Provide factory extended panel for any diffuser which is smaller than the grid in which it is installed.
 2. Sound baffle by Sheet Metal Contractor.
 3. Provide plaster frame for diffusers, registers and grilles installed in gypsum board.
 4. Provide KXDA extension rod with knob.
 5. Provide with adjustable opposed blade damper.
 6. Mount so the occupant can not see into the duct.
 7. Removable core diffusers

| Rooftop Unit Schedule | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-------|------------------|--------------|------------------|-------------------|---------------------------------|---------------------|----------|----------|----------|----------------------------|-------------------------|----------|----------|-----------------------|------------------|-------------|-----------|--------------|---------|-----|------|-------------|----------------|
| Mark | Space | Model | Nominal Tons | Air Volume (CFM) | Outside Air (CFM) | External Static Pressure (w.g.) | Cooling Performance | | | | Heating Performance | | | | Electrical Connection | | | | Weight (lbs) | Remarks | | | | |
| | | | | | | | EDB (°F) | EWB (°F) | LDB (°F) | LWB (°F) | Net Sensible Cooling (MBH) | Net Total Cooling (MBH) | EDB (°F) | LDB (°F) | Gas Input (MBH) | Gas Output (MBH) | Voltage (V) | Phase (Ø) | | | MCA | MOCP | Starter By: | Disconnect By: |
| RTU-1 | Roof | Lennox LGT180H4M | 15 | 6000 | 1950 | 0.75 | 80.4 | 66.8 | 58.3 | 56.9 | 178.5/136.8 | 187.6/145.8 | 44.5 | 103.8 | 480/312 | 384/249.6 | 208 | 3 | 74 | 90 | MFR | MFR | 2504 | See Notes |
| RTU-2 | Roof | Lennox LGT180H4M | 15 | 6000 | 1950 | 0.75 | 80.4 | 66.8 | 58.3 | 56.9 | 178.5/136.8 | 187.6/145.8 | 44.5 | 103.8 | 480/312 | 384/249.6 | 208 | 3 | 74 | 90 | MFR | MFR | 2504 | See Notes |

Notes:
 1. Gas pressure regulator suitable for site gas pressure.
 2. Coordinate exact location with roof structure.
 3. R/A smoke detector.
 4. Provide 7 day occupied / un-occupied controller
 5. Install RTU on curb provided by Fan MFR.
 6. Humiditrol.
 7. Stainless steel heat exchangers.
 8. Single enthalpy economizer with barometric relief and hoods.
 9. 2" MERV 13 filters.
 10. Mesh hail guard.

Acceptable Manufacturers:
 1. Rapid
 2. Green Heck

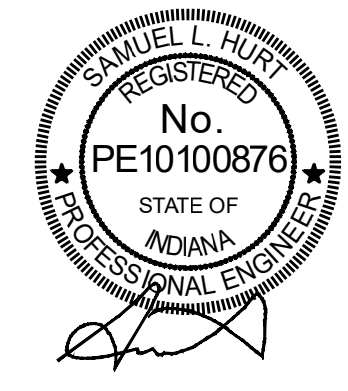
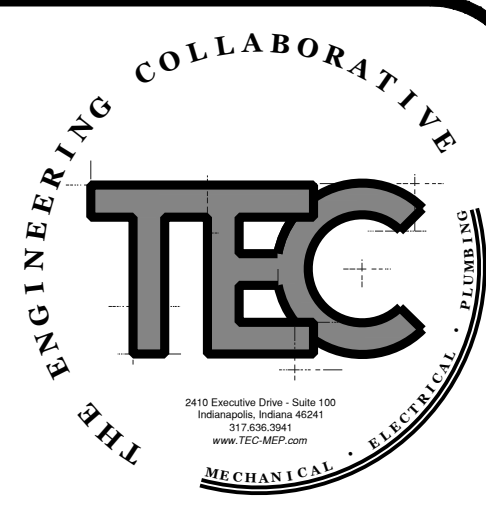
| Exhaust Fan Schedule | | | | | | | | | |
|----------------------|--------------|-----------------|---------------|----------------------------|-----------------------|-----------|---------------|--------------|-----------|
| Mark | Area Served | Model | Airflow (CFM) | Static Pressure (in. w.g.) | Electrical Connection | | | Weight (lbs) | Remarks |
| | | | | | Voltage (V) | Phase (Ø) | Power (Watts) | | |
| EF-1 | 118 Mop Room | Accurex XCR-B80 | 75 | 0.125 | 115 | 1 | 18 | 9 | See Notes |

Notes:
 1. Direct drive with solid state speed controller.
 2. Disconnect by Fan MFR.
 3. Fan to run contentiously.

| Electric Ceiling Heater Schedule | | | | | | | | | | |
|----------------------------------|------------------------|--------------|----------------|-----------------------|-------------|-----------|---------|------------|---------|--|
| Mark | Area Served | Model | Type | Electrical Connection | | | | Disconnect | Remarks | |
| | | | | Power (Watts) | Voltage (V) | Phase (Ø) | MCA (A) | | | |
| ECH-1 | 104 Drive Thru Service | Qmark CDF548 | Ceiling Heater | 4000 | 208 | 1 | 19.2 | MFR | 1,2,3 | |

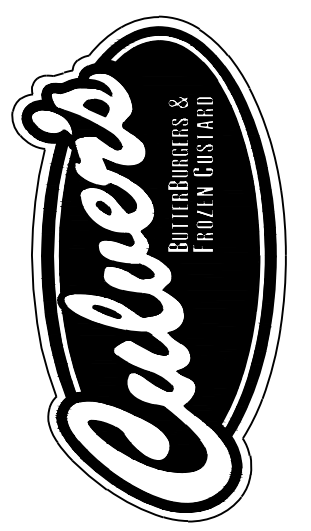
Notes:
 1. Radiant Heater.
 2. Wall T-Stat.
 3. Mount into ceiling grid.

Acceptable Manufactures:
 1. Raywall
 2. QMark
 3. Indeeco
 4. Marley



| By | Date | Revision |
|----|------|----------|
| | | |
| | | |
| | | |
| | | |

Culver Franchising System, LLC
 1240 Water Street
 Prairie du Sac, WI 53578
 608-643-7980



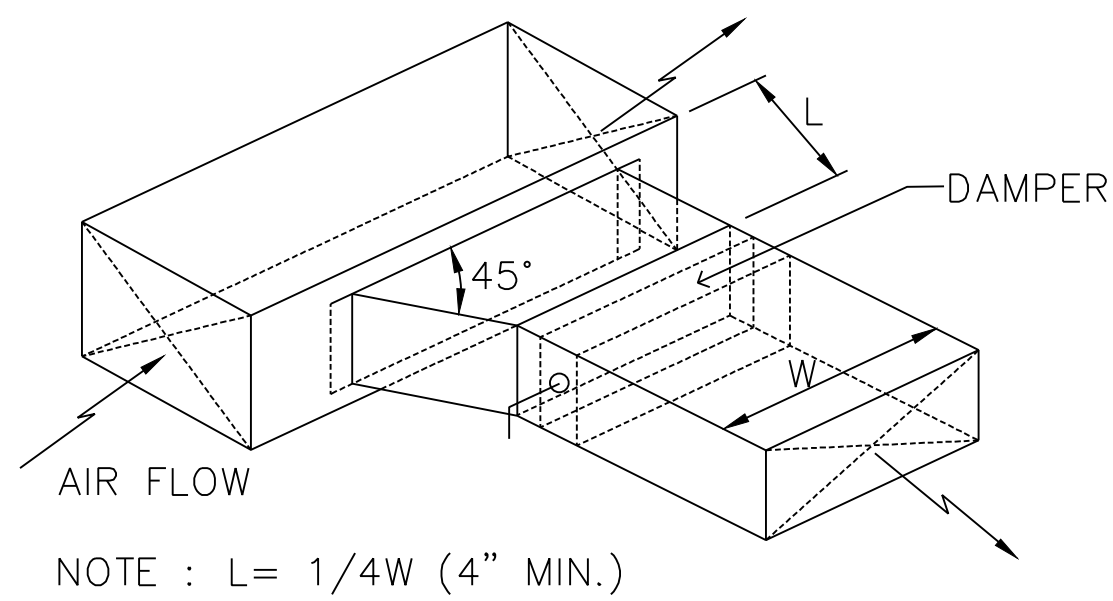
CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
 9717 WEST 133RD AVE

Sheet Contents:
HVAC SCHEDULES

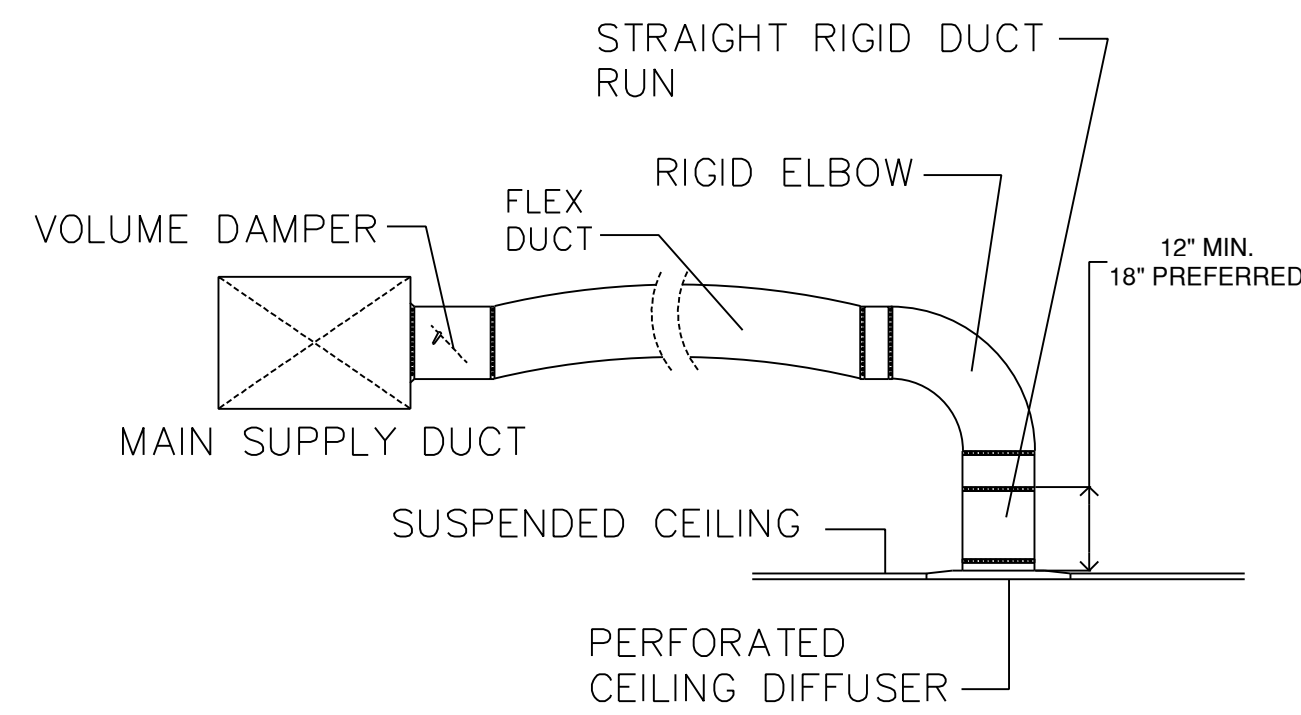
Project No: 220200
 Drawn By: EZY
 Date: Feb. 24, 2023

Sheet
M-4

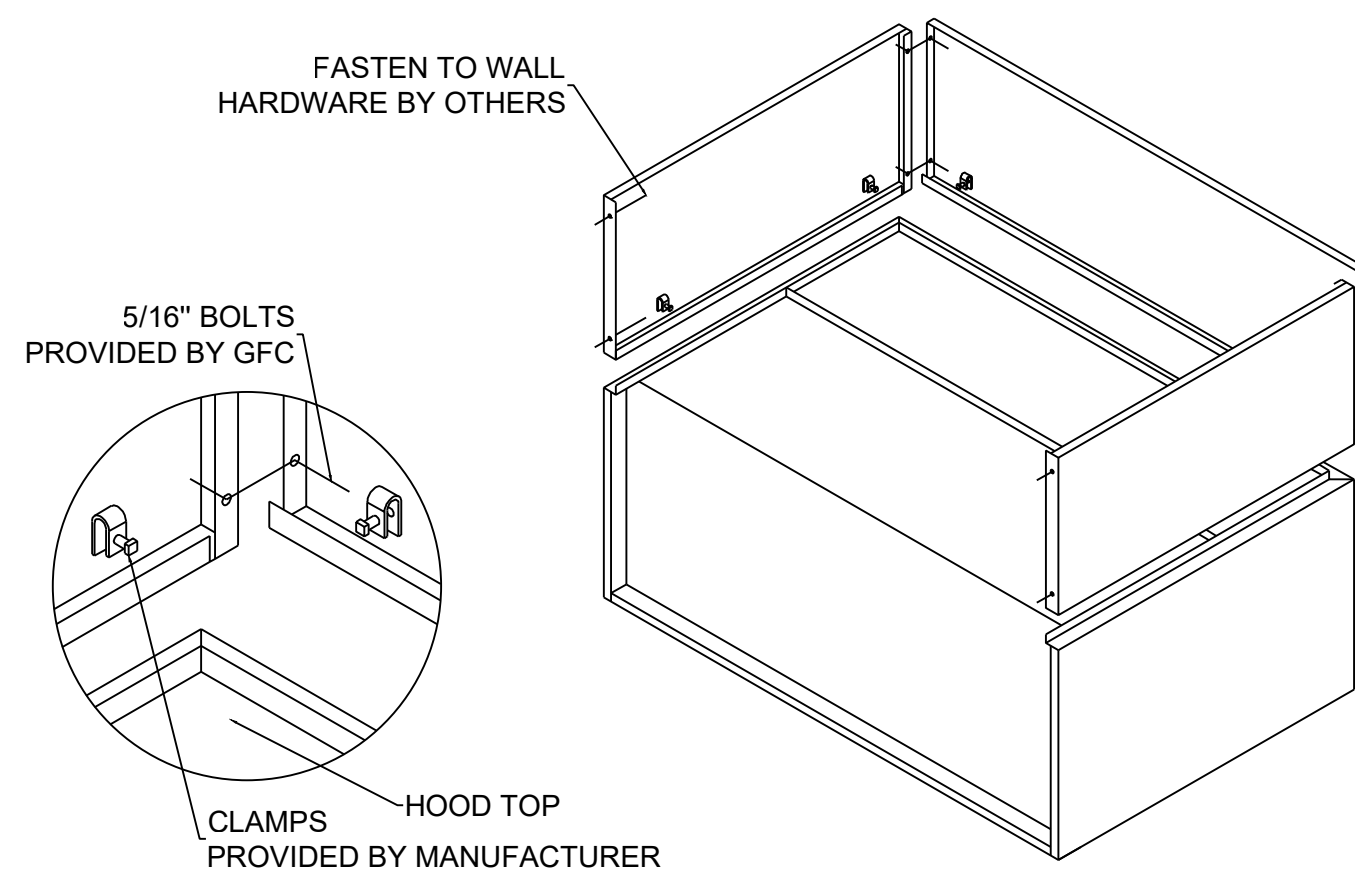
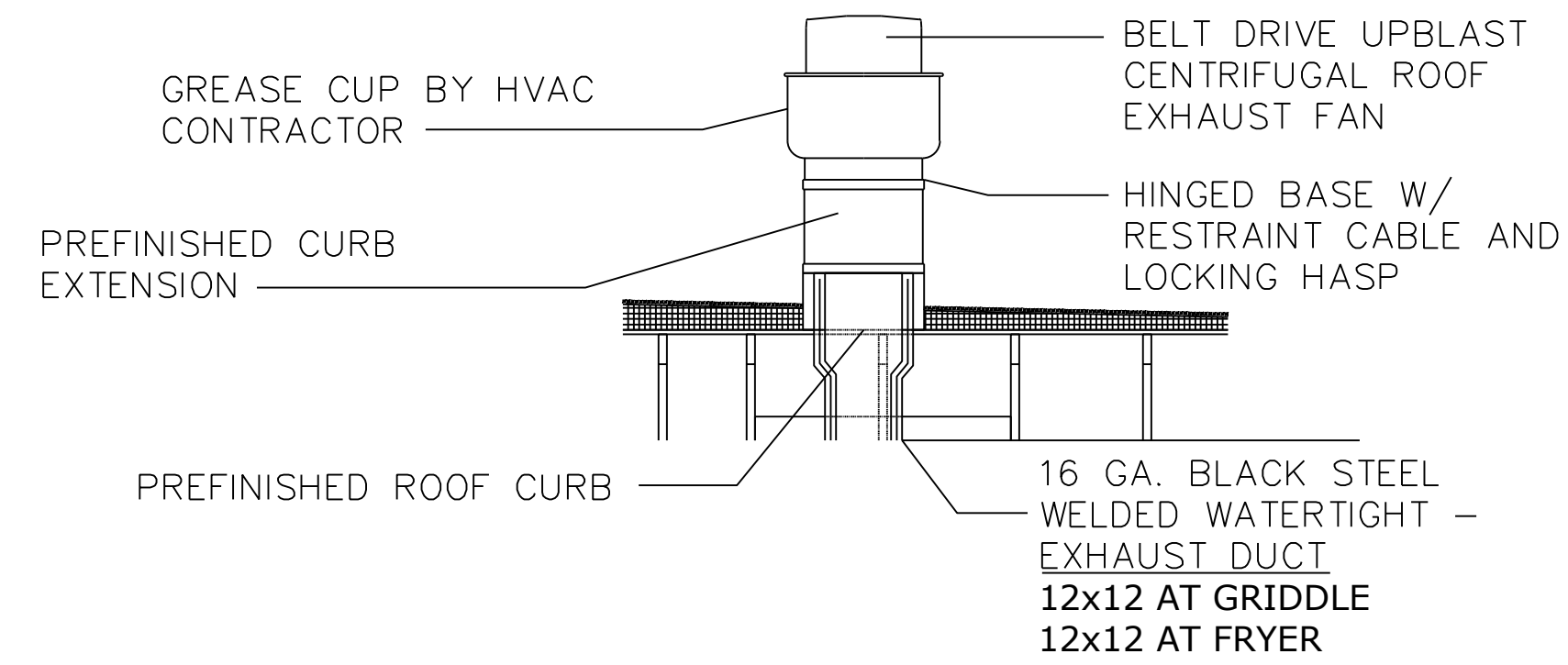
WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC



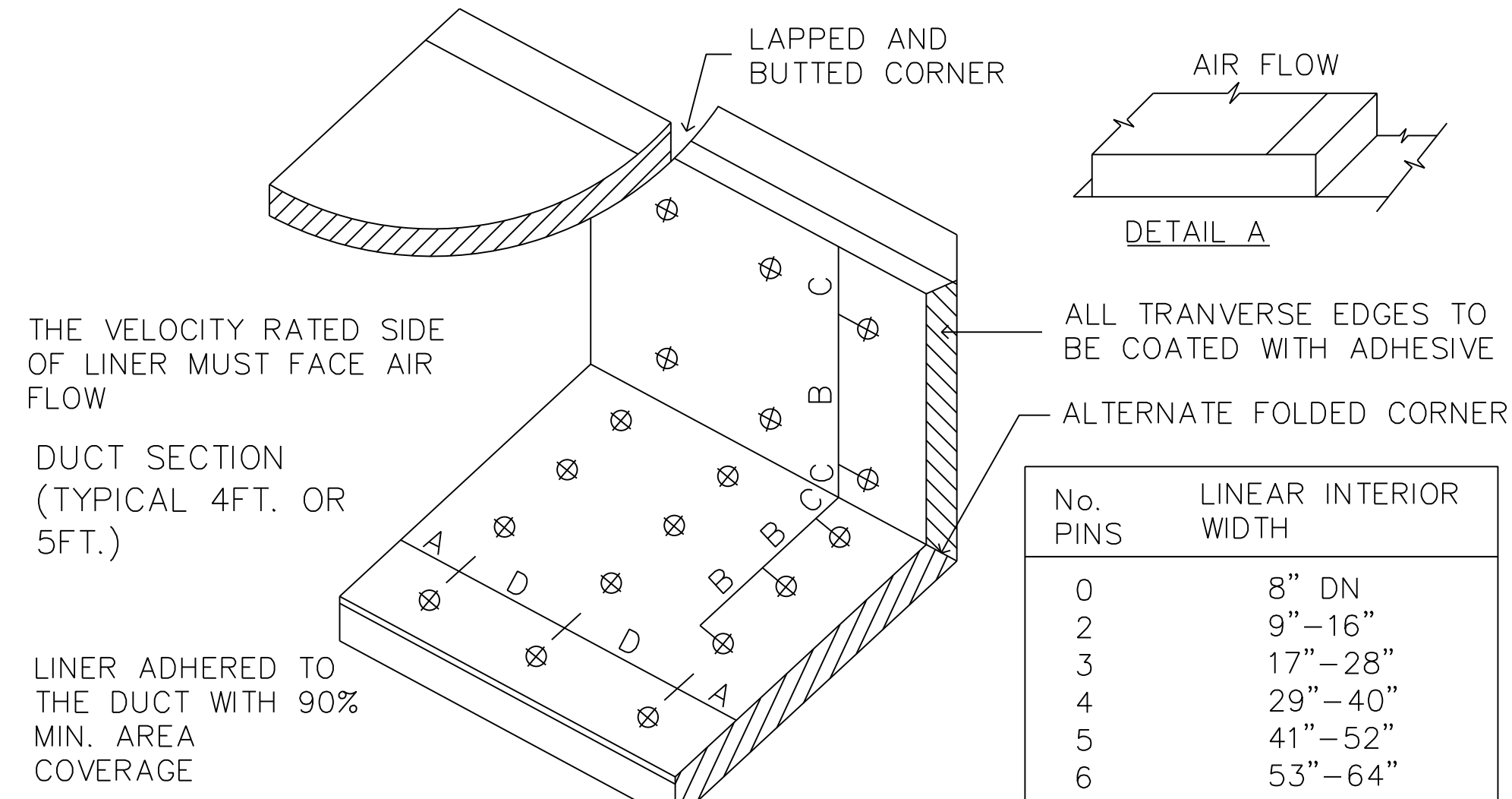
D 5
M-5 **Branch Duct Takeoff Details**
Scale: None



D 2
M-5 **Kitchen Hood Exhaust Fan Detail**
Scale: None

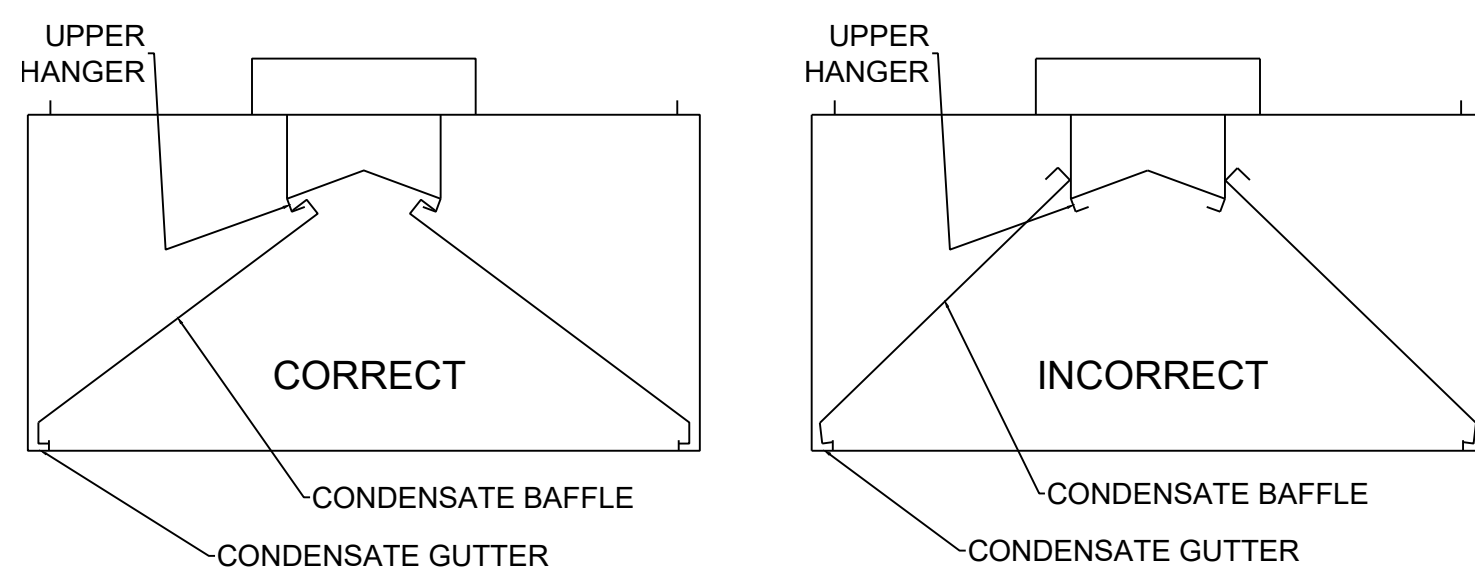


D 4
M-5 **Enclosure Panel Installation Detail**
Scale: None



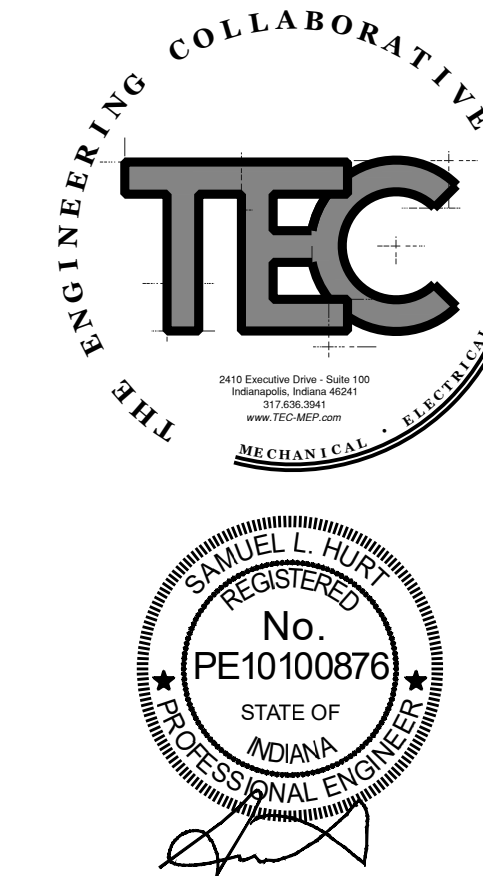
NOTE: USE ONLY ON VERTICAL DROP FROM RTU TO WITHIN 9'-10" A.F.F., DUCT LINER WILL NOT BE PERMITTED ON ANY HORIZ. RUNS.

D 1
M-5 **Duct Liner Installation Detail**
Scale: None



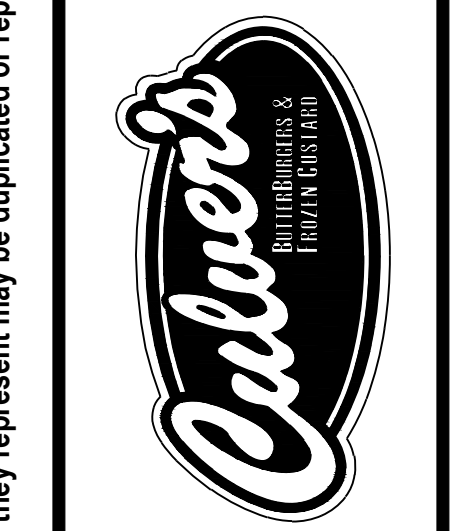
NOTES:
1. THE CONDENSATE BAFFLES MUST HOOK ONTO THE UPPER HANGER AND REST IN THE CONDENSATE GUTTER FOR PROPER OPERATION.

D 3
M-5 **Condensate Hood Baffle Installation Detail**
Scale: None



| | |
|----------|--|
| By | |
| Date | |
| Revision | |

Culver Franchising System, LLC
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980



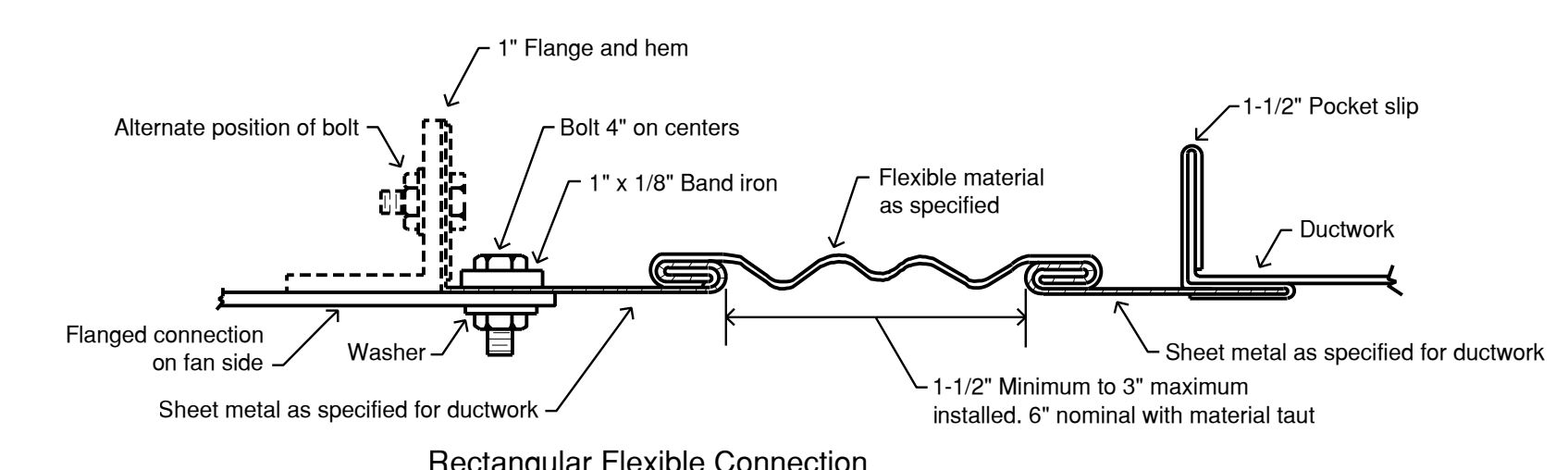
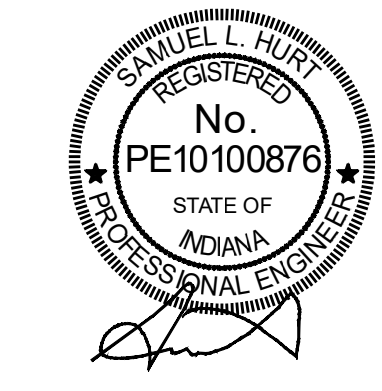
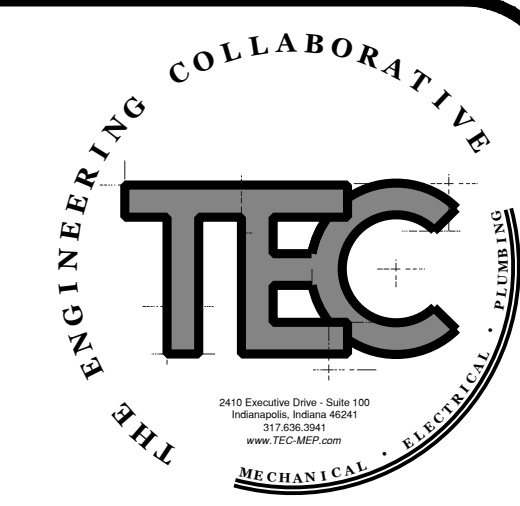
CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
9717 WEST 133RD AVE

Sheet Contents:
HVAC DETAILS

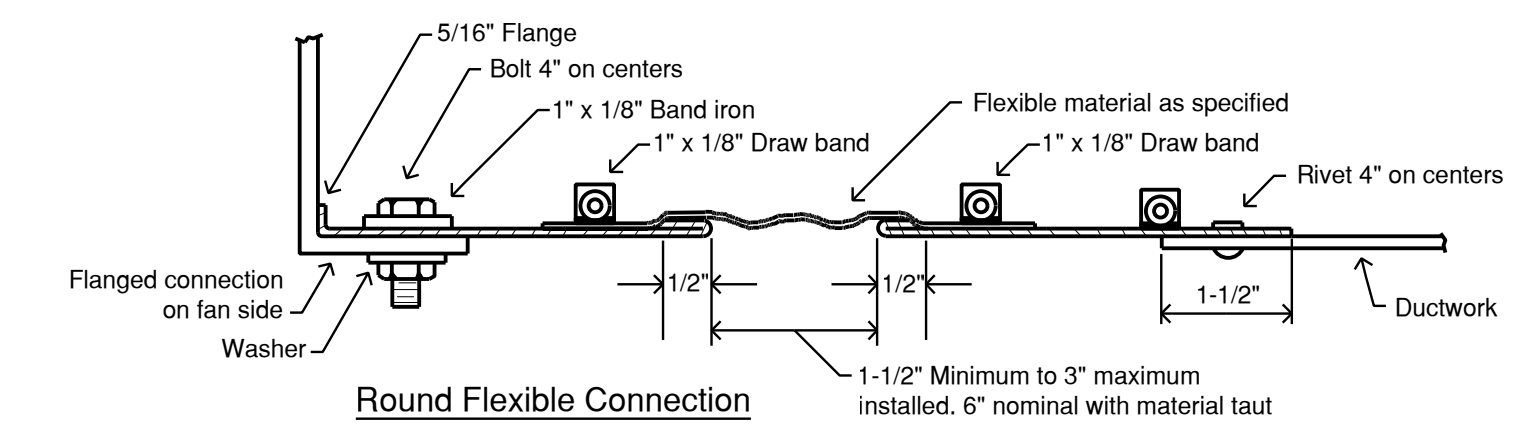
| | |
|-------------|---------------|
| Project No. | 220200 |
| Drawn By | EZY |
| Date | Feb. 24, 2023 |

Sheet
M-5

WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC



Rectangular Flexible Connection

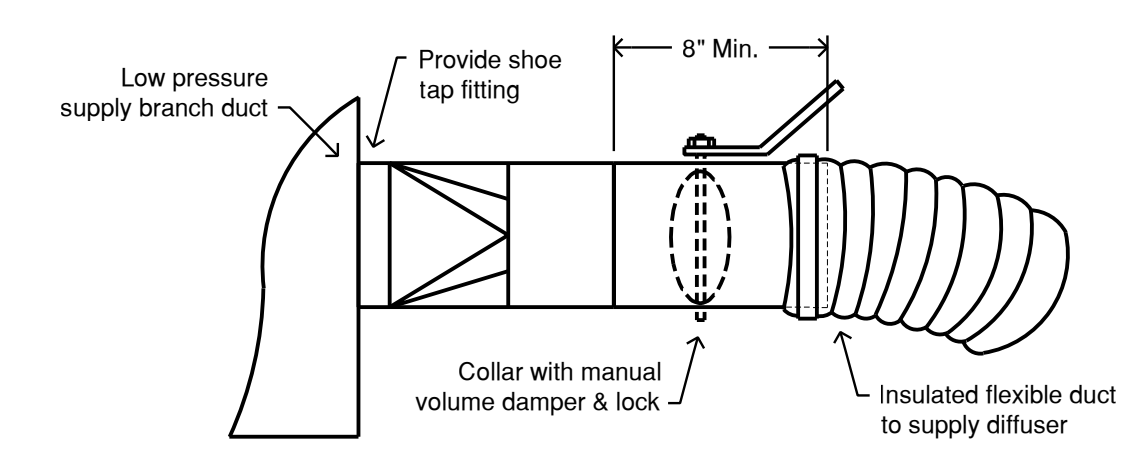


Round Flexible Connection

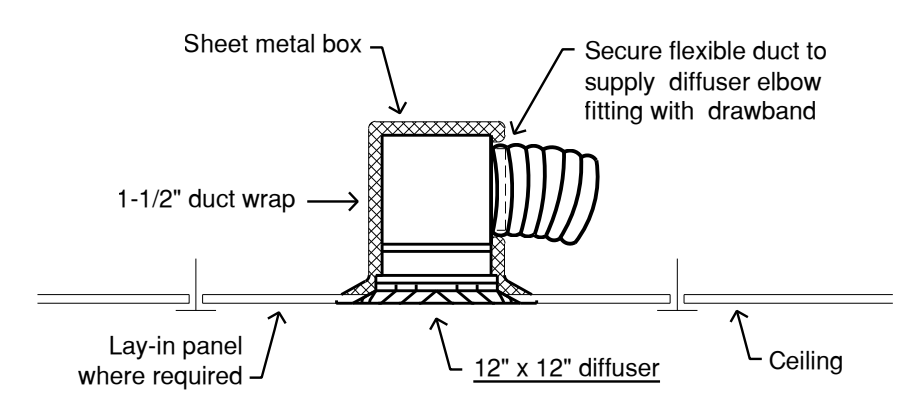
Flexible Connection

Scale: None

D 8
M-6



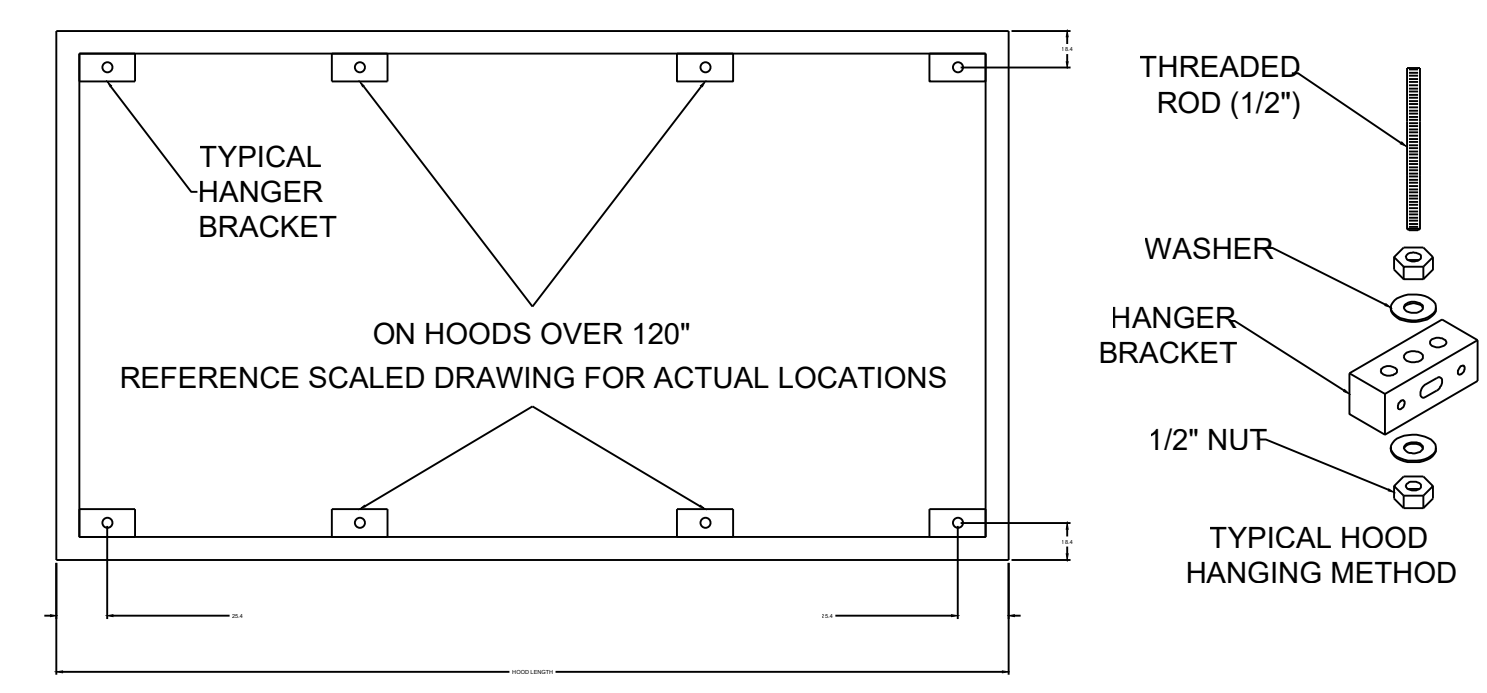
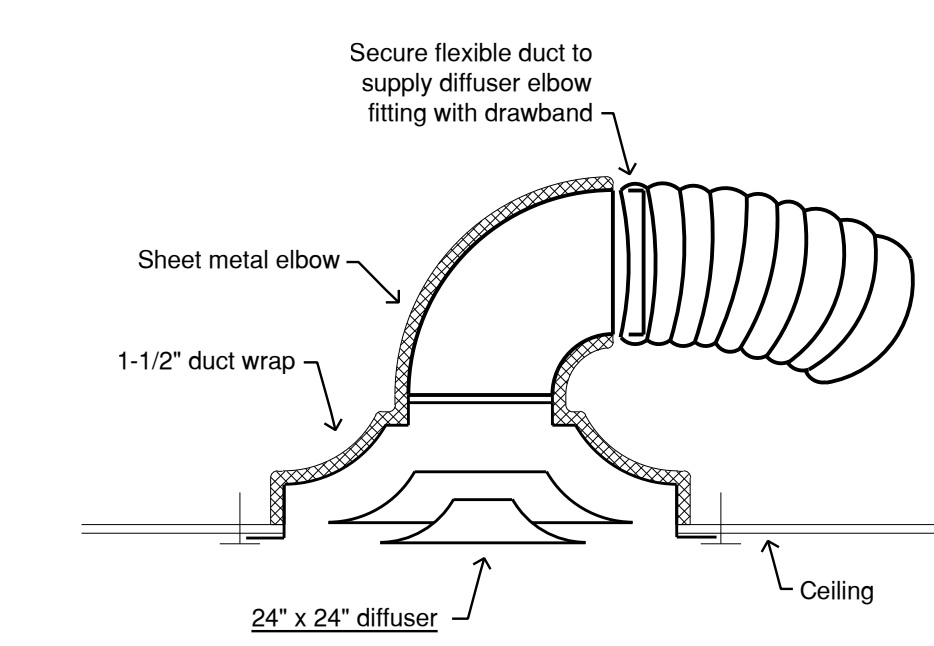
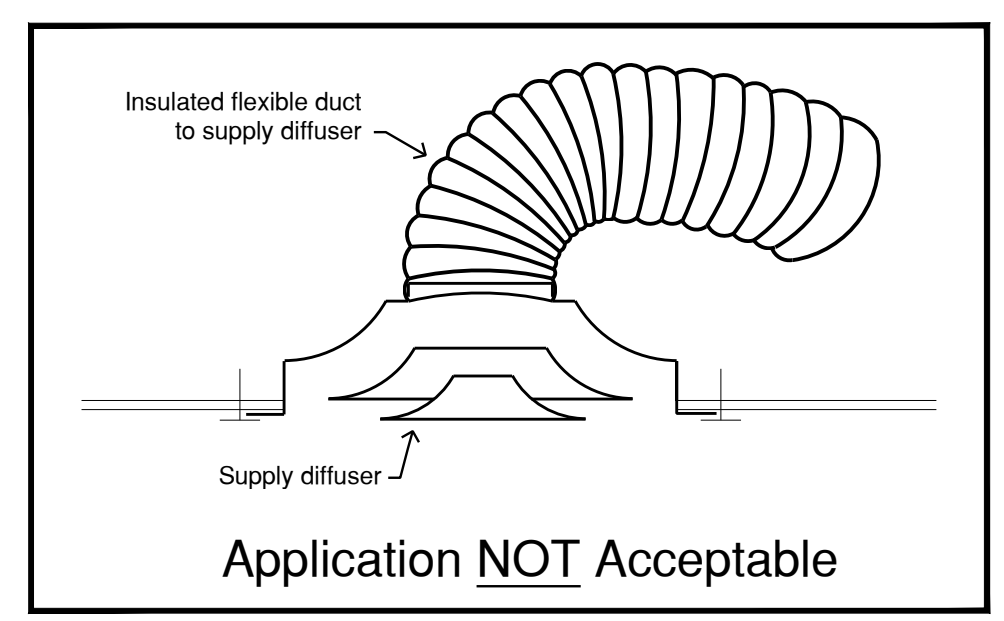
Notes:
Provide a 45 degree entry square-to-round fitting from low pressure supply branch duct when the supply diffuser branch size equals or exceeds the depth of the supply branch duct. Width shall equal round diffuser branch size, depth shall equal supply branch duct depth.
Refer to supply diffuser plenum connection detail if guidelines of this detail can not be met due to physical limitations.
A maximum length of 5'-0" of flexible duct is allowed in a single run.



Supply Diffuser and Flexible Duct Connection

Scale: None

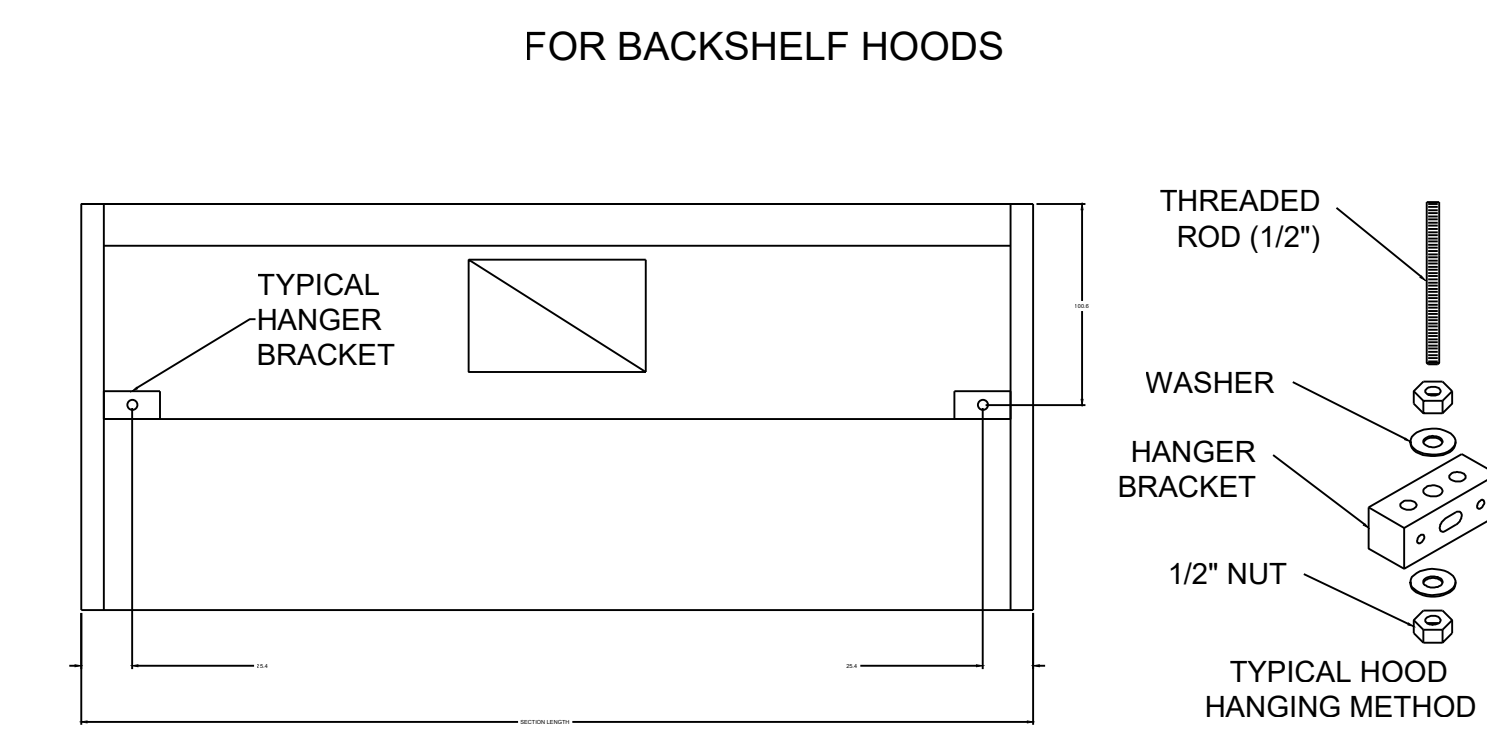
D 9
M-6



Hood Hanger Bracket Detail

Scale: None

D 7
M-6



Hood Hanger Bracket Detail

Scale: None

D 6
M-6

| | |
|----------|--|
| By | |
| Date | |
| Revision | |

Culver Franchising System, LLC
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980



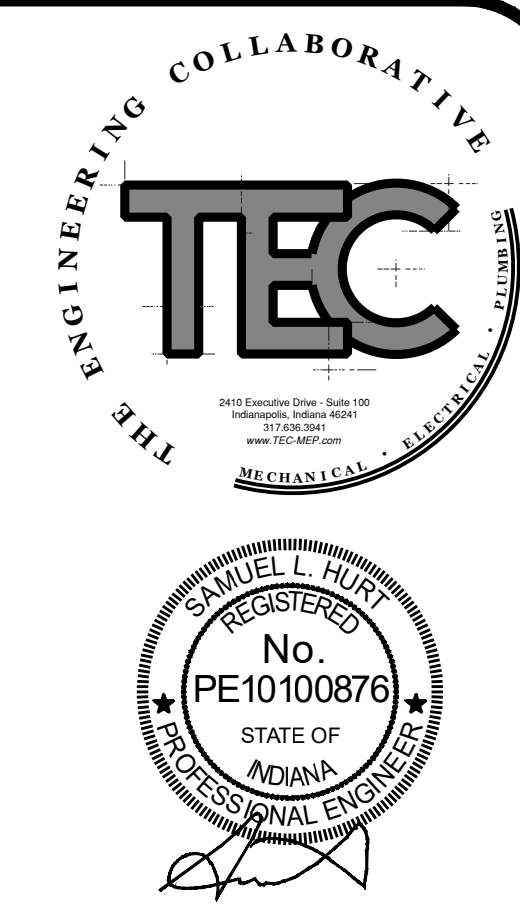
CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
9717 WEST 133RD AVE

Sheet Contents:
HVAC DETAILS

Project No. 220200
Drawn By: EZY
Date: Feb. 24, 2023

Sheet
M-6

WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC



REQUIREMENTS OF REGULATORY AGENCIES

All materials and workmanship shall comply with all applicable codes, specifications, local ordinances, industry standards, and utility company regulations.

In case of a difference between building codes, specifications, state laws, local ordinances, industry standards, utility company regulations and Contract Documents, the most stringent shall govern. The Contractor shall promptly notify the Owner in writing of any such difference.

Non-Compliance: Should the Contractor perform any work that does not comply with requirements of applicable building codes, state laws, local ordinances, industry standards and utility company regulations, he shall bear all costs arising in correcting the deficiencies.

Applicable codes and standards shall include all state laws, local ordinances, utility company regulations and applicable requirements of state plumbing and mechanical codes.

Permits: Contractor shall pay for all building permits required by work and permits. For opening streets and for connection to various utilities, including fees for water meter installation and any other requirements necessary to carry out his work. Where streets or sidewalks are cut, same must be repaired to at least as good a condition as they were before, all at the expense of this Contractor. Permits shall be posted in a prominent place at the building site properly protected from the weather and physical damage.

GUARANTEE

Contractor shall, by accepting these Drawings and Specifications, guarantee:

Contractor shall furnish all material and equipment as specified except where specified approval is given by Engineer for substitution.

All material and equipment shall be installed substantially as shown on drawings and as required within the intent of these Specifications.

All equipment, etc., shall be drip-tight, airtight, free of vibration, pounding, and other objectionable noises.

Contractor shall guarantee all equipment, accessories, and material furnished by him, including installation for a period of one year from date of final acceptance against all defects in material and workmanship.

If any equipment, material, and/or pipe joints, connections, etc., fail or do not operate satisfactorily or show undue wear, he will, upon being notified, immediately remedy defect at his own expense.

WORK AND WORKMANSHIP

Provide all required labor, materials, equipment and Contractor's services necessary for complete installation of systems required in full conformity with requirements of authorities having jurisdiction, all as indicated on Drawings and herein specified.

Finished job shall be functional and complete in every detail, including any and all such items required for a complete system whether or not these items be specified or shown on the Drawings. All such accessories and appurtenances shall be provided and installed at no additional cost to the owner.

Special attention shall be given to accessibility of working parts and controlling parts. Adjustable parts shall be within easy reach. Removable parts shall have space for removal.

Each Contractor shall acquaint himself with details of all work to be performed by other trades and take necessary steps to integrate and coordinate his work with other trades.

It is assumed that the Contractor is familiar with standard First Class installation procedures. Therefore, these Specifications do not attempt to include every detail or operation necessary for the complete installation.

It should be particularly noted that the terms "furnish" and "provide" are interchangeable and that each of these means to provide, install and connect, unless otherwise stated.

Whenever tables or schedules show quantity of materials, they shall not be used as a guide to the Contractor. Each Contractor shall be responsible for furnishing all material noted on the Drawings and as specified.

Contractor shall be responsible for the protection, safekeeping, and cleanliness of all existing equipment, material, etc., located in spaces to be remodeled in which he is working. As part of his responsibility, he shall provide the necessary covers, structures, etc., as required to keep all dirt, water, moisture and dust from equipment. The method the Contractor proposes to use in protecting equipment shall be coordinated with the Engineer and Owner's representative for approval before any work is started. Any damage sustained during construction shall be corrected or replaced by the Contractor.

ASSIGNMENT OF MISCELLANEOUS WORK

Painting: Mechanical Contractor will provide prime painting on all ferrous metals such as support steel or hangers for mechanical equipment. Any finish painting of mechanical work required, including painting steel exposed to outside environment shall be painted by the Mechanical Contractor.

Platforms and supporting stands for mechanical equipment shall be furnished by the Mechanical Contractor unless noted otherwise. Owner shall give approval prior to any cutting. All larger holes shall be provided by others, as detailed in the structural drawings.

Ceiling and Wall Access Panels: Mechanical Contractor shall cut and patch finished areas for panels as required by the Mechanical Contractor. Provide access panels as specified, where shown, or required for access to coils, valves, etc.

- A. Acoustical tile Wall or Ceiling: 24" x 12" unless otherwise noted. Constructed to receive tile to match ceiling. Milcor Style A.
- B. Plastered Wall or Ceiling: 24" x 12" unless otherwise noted. Constructed to receive plaster to match adjacent finish. Milcor Style B.

Cutting and Patching: Mechanical Contractor shall cut and patch finished areas as required by the Mechanical Contractor. Cut structural materials only where required after approval from the Architect and Engineer.

Disposition of existing equipment which is to be removed and salvaged shall remain the property of the Owner and be stored by the Contractor as directed by the Owner.

Temporary partitions or barriers required to protect existing building or facilities shall be provided by the Mechanical Contractor. Mechanical Contractor shall coordinate necessity and location of such protection with Owner.

Roof openings and flashing required by Mechanical Contractor shall be by Mechanical Contractor. Mechanical Contractor is responsible for the correct size and location of same. Counterflashing by the Mechanical Contractor.

Pads and foundations for mechanical equipment shall be formed and poured by the Mechanical Contractor. Mechanical Contractor shall verify pads and all anchoring devices.

Excavating and backfilling for mechanical work shall be by the Mechanical Contractor.

All outside downspouts shall be by the General Contractor. Downspout shoe shall be by the Mechanical Contractor.

Kitchen equipment shall be set in place by the Mechanical Contractor. Rough-in shall be by the Mechanical Contractor. Final connections shall be by the Mechanical Contractor.

Sanitary vent pans and flashing by the Mechanical Contractor.

Louvers shall be furnished by the Mechanical Contractor. Size and location shall be verified by the Mechanical Contractor.

Roof curbs and bases for ventilators, roof intakes and relief and fans shall be furnished by the Mechanical Contractor.

DRAWINGS

Mechanical Drawings show general arrangement of all equipment and appurtenances. They shall be followed as closely as actual building construction and work of other trades will permit. Mechanical work shall conform to requirements shown on all Drawings. General and Structural Drawings shall take precedence over Mechanical Drawings. Because of the small scale of Mechanical Drawings, it is not possible to indicate all offsets, fittings and accessories which may be required. Contractor shall investigate structural and finish conditions affecting work and shall arrange his work accordingly, providing such fittings, valves and accessories as may be required to meet such conditions without additional cost to the Owner.

COORDINATION BETWEEN CONTRACTORS

Each Contractor and Subcontractor shall study all drawings applicable to this work so complete coordination between trades will be affected. Special attention shall be given to points where ducts cross other ducts or piping, where lights fit into ceilings and where ducts, and conduit pass thru walls and columns.

It is the responsibility of each Contractor and Subcontractor to leave necessary room for other trades. No extra compensation will be allowed to cover the cost of removing conduit, ducts, or equipment found encroaching on space required by others.

MINOR DEVIATIONS

For the purpose of clarity and legibility, Drawings are essentially diagrammatic although size and location of equipment are drawn near to scale wherever possible. Verify Contract Document information at site.

Drawings indicate required sizes and points of termination of ducts and suggested routes. It is not the intention of Drawings to indicate all necessary offsets. Install work in a manner to conform to structure, avoid obstructions, preserve headroom and keep openings and passageways clear. Do not scale from Drawings.

ATTACHING TO BUILDING CONSTRUCTION

Equipment and piping supports shall be attached to structural members (beams, joists, etc.) Rather than to floor or roof slabs. Do not attach hangers to bottom chord of structural members.

DEMOLITION AND REMOVAL OF EQUIPMENT

Contractor shall remove all equipment, pipes, ductwork, hangers and support for portion of mechanical system in present building as shown on Drawings and/or implied by nature of the work indicated to be removed.

Contractor shall properly support remaining portions of work. Contractor shall provide valves, plugs, vents, etc. as required for complete operating system. All pipes, ductwork, etc., removed shall become the property of the Contractor and shall be removed from the premises unless specified otherwise.

Contractor shall cap all abandoned piping which cannot be removed. This would pertain to piping which runs into concrete floors, thru outside walls below grade, etc.

BALANCING

Work shall be provided by the Mechanical Contractor.

General: Balance and adjust air and hydronic systems to achieve comfort and proper operation of systems and to capacities indicated on the drawings.

- A. Use procedures as outlined in the National Standards for Field Measurements and Instrumentation, current volume, as published by the Associated Air Balance Council. Certify balance of system to be complete and accurate as shown and submit report to Engineer for review and approval.
- B. If a piece of equipment is not operating in a satisfactory manner, coordinate with manufacturer to repair or adjust as necessary.
- C. Report to Engineer if system or piece of equipment cannot be adjusted to operate satisfactorily.
- D. Test and Balance shall be provided by a NEBB, AABC or TABB certified Balance Contractor.

INSULATION

Ductwork Insulation

- A. Service: Air conditioning and heating supply, fresh (outside) air in conditioned spaces - insulate entirely. Material: 0.75 lb/cu ft. Flexible fiberglass 1 1/2" thick with flame resistant aluminum kraft foil jacket.
- B. Service: Air conditioning and heating supply and return, fresh (outside) air in unconditioned spaces - insulate entirely. Material: 0.75 lb/cu ft. Flexible fiberglass 2" thick with flame resistant aluminum kraft foil jacket. (R6 Minimum)

NOTE: All insulation: rating not to exceed 25 flame, 50 smoke and rated for use in return air plenum.

REFRIGERATION PIPING SYSTEM

Service: Refrigerant required by selected equipment.

Maximum design: Pressure 525 psig; temperature 300°F.

Piping (above ground): Soft, seamless copper linesets as recommended by air conditioner Manufacturer, cleaned, dehydrated and sealed according to manufacturer's recommendations.

Conceal all refrigerant piping unless otherwise noted. Contact Engineer for alternatives if concealment is not possible.

Perform an initial test of the refrigeration system as follows:

- A. Hold pressure for 12 hours and check for loss of pressure. Certify readings. Notify equipment manufacturer of test and allow observation.
- B. Draw and hold 500 micron vacuum. Hold for 12 hours and check for loss of vacuum. Notify equipment manufacturer of test and allow observation.
- C. If leak(s) is detected, entire refrigerant system shall be checked with leak detector. Caution: Any frost that might be present in area can interfere with detectors. Area must be thoroughly ventilated.
- D. Repair any leaks and repeat above procedure. Repairing leaks under pressure shall not be done. Brazed joints shall be repaired by using new material.
- E. Insulate all interior refrigerant suction piping with 3/4" flexible elastomeric insulation.
- F. Insulate all exterior refrigerant piping with 1" flexible elastomeric insulation and provide a .020" aluminum jacket sealed weather tight.

"LOW PRESSURE" DUCTWORK AND ACCESSORIES

Construct rectangular duct of first quality materials in accordance with SMACNA-HVAC Duct Construction Standards, Metal and Flexible. Crossbreak except where rigid insulation is specified. Construct round duct according to recommendations of ASHRAE Guide. Round duct should be galvanized spiral unless noted otherwise. Longitudinal lock-seam duct is not acceptable.

Keep all ductwork, duct system and equipment openings covered with adhesive duct protective wrap like VentureTape 1512, until system start-up. This is to prevent intrusion of construction dirt and debris into the duct system, and HVAC equipment.

Phenolic duct by Pal-Duct or Kool-Duct is an acceptable alternative to sheetmetal duct and insulation in concealed spaces. Use flanged joints. Submit detailed duct drawings for engineer review.

Support horizontal duct in wall with bank iron strap hanger if width is under 18" and with shelf type bracket if over 18".

Support ducts suspended from roof structure with band-type hangers if maximum is inside 48" and with trapeze-type hangers if over 48".

Fittings:

- B. Elbows (less than 24" wide): Use standard radius elbow. Radius shall be 1.5 times width of fittings.
- C. Elbows (24" wide and over): Shall be square elbows with turning vanes. Elbows less than 36" wide shall have single-bladed vanes. Elbows 36" wide and over shall have double-bladed vanes in airfoil pattern.
- D. Main tee connections shall be radius or square depending on the size duct reduced to. Adjustable splitter damper shall be provided ahead of tee.
- E. Branch tee connections shall be 45° branch take-offs. Provide balancing dampers in branches unless otherwise directed to delete them.
- F. Transitions, raises and drops shall be built so that change in direction of side of duct does not exceed 30° angle to projected same side.

Provide flexible connections (FC) at each inlet and outlet duct connection to every piece of fan equipment. Fabric fastened to metal with double lock seam. Fabric for ordinary HVAC uses to be waterproof, fire retardant and suitable for temperatures of 200°F. Manufacturers: Duro-Dyne, Ventfabrics or equal.

Runs of flexible duct shall not exceed 5'-0". Flexible duct shall not be used as an elbow. Provide sheet metal elbow at diffuser neck where tap is not out of the bottom of the supply main.

Furnish and install balancing dampers (BD) for each supply air runout and at additional locations, as shown on the drawings. Construction to be galvanized steel, two gauges heavier than duct. Shaft shall be steel with brass bearings. Blades shall not exceed 12" wide and 48" long. Frames of same gauge metal are required where two blades or more are used.

Balancing dampers to have lock-type damper operator and linkage as best suits construction and access conditions. Dampers with accessible operators to be provided with locking damper quadrants complete with locking nuts and graduated scale. Dampers with non-accessible operators provided with Young Series 300 concealed regulator and cover plate complete with work gear or linkage as required for smooth damper operation. Dampers in underbar ducts provided with Young Series 335 adjustable cover regulators.

DUCTS CONNECTED TO COMMERCIAL KITCHEN HOODS: COMPLY WITH NFPA 96.

- A. Exposed to View: Type 304, stainless-steel sheet, No.4 finish.
- B. Concealed: Carbon-steel sheet.
- C. Welded seams and joints.
- D. Pressure Class: Positive or negative 2-inch wg (500 Pa)
- E. Minimum SMACNA Seal Class: Welded seams, joints, and penetrations.
- F. SMACNA Leakage Class: 3.

Engineered, factory fabricated duct systems are an acceptable alternative. Send specs of such duct systems to engineer for review prior to bidding.

Duct Sealing: Comply with SMACNA standard duct sealing requirements for class "A" ducts for all O/A, supply, return and exhaust ductwork.

- A. Water-Based Joint and Seam Sealant:
 - 1. Application Method: Brush on.
 - 2. Solids Content: Minimum 65 percent.
 - 3. Shore A Hardness: Minimum 20.

- 4. Water resistant.
- 5. Mold and mildew resistant.
- 6. VOC: Maximum 75 g/L (less water).
- 7. Maximum Static-Pressure Class: 10-inch wg (2500 Pa), positive and negative.
- 8. Service: Indoor or outdoor.
- 9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
- 10. Tape shall not be acceptable.
- 11. Total duct leakage rates shall not exceed 10%.

Fire Dampers (FD): At each penetration through fire-rated partitions, provide fire dampers where indicated on drawings to meet or exceed barrier rating.

Fire dampers shall be type "B", UL classified and meet all NFPA criteria for primary fire dampers. Frame shall be 20 gauge minimum. Blades shall be 24 gauge minimum. Blades shall not infringe on duct free area for airflow. Fusible link shall be rated at 165°F. Closure springs shall be 301 stainless steel. Finish shall be mill.

HVAC EQUIPMENT

Refer to Plans and Schedule sheets. If equipment other than basis of design (scheduled Manufacturer) is being considered, notify the Engineer and send specs for review.

PRV - 1 FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE.

PRV - 2 (ITEM #49) FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE.

PRV - 3 (ITEM #59) FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE.

PRV - 4 (ITEM #25) CONDENSATE DOWNBLAST EXHAUST FAN WITH ROOF CURB AND BACKDRAFT DAMPER. FAN TO RUN w/STARTING OF DISHWASHER & FOR ONE MINUTE AFTER THE CYCLE IS COMPLETE.

EF - 1 PAINT WALL CAP TO MATCH EXTERIOR FINISH. FAN TO RUN CONTINUOUSLY DURING OCCUPIED MODE.

ITEM #49 GRIDDLE EXHAUST HOOD - 64" X 26" X 36" HIGH, LOW PROXIMITY w/FLUE BYPASS. INCLUDES THE 3" INTEGRAL AIR SPACE ON BACK OF HOOD & AN ADDITIONAL 3" REAR FILLER PANEL. STAINLESS STEEL WHERE EXPOSED, w/ GREASE GRABBER TWO-STAGE FILTRATION SYSTEM. 26" HIGH ENCLOSURE PANELS, FRONT, LEFT AND RIGHT SIDES. GREASE TROUGH SHALL BE PITCHED TO THE LEFT END OF THE HOOD. APPROVALS SHALL INCLUDE UL LISTING AND THE NSF SEAL. THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96

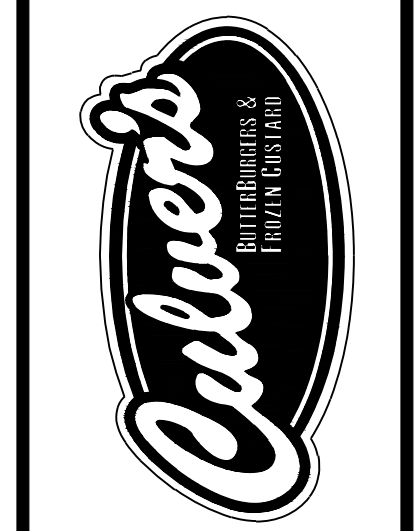
ITEM #59 FRYER EXHAUST HOOD - 83" X 26" X 36" HIGH, LOW PROXIMITY w/FLUE BYPASS. INCLUDES THE 3" INTEGRAL AIR SPACE ON BACK OF HOOD & AN ADDITIONAL 3" REAR FILLER PANEL. STAINLESS STEEL WHERE EXPOSED, w/ X-TRACTOR STAINLESS STEEL FILTERS TWO-STAGE FILTRATION SYSTEM. 26" HIGH ENCLOSURE PANELS, FRONT, LEFT AND RIGHT SIDES. GREASE TROUGH SHALL BE PITCHED TO THE LEFT END OF THE HOOD. APPROVALS SHALL INCLUDE UL LISTING AND THE NSF SEAL. THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96

ITEM #25A DISHWASHER CONDENSATE HOOD - CONDENSATE HOOD w/BAFFLE, 42" X 42" X 24" HIGH, STAINLESS STEEL WHERE EXPOSED. APPROVALS SHALL INCLUDE THE NSF SEAL. (UL LABEL NOT REQUIRED FOR NON-GREASE APPLICATION). THE VENTILATOR SHALL CONFORM TO THE REQUIREMENTS OF NFPA-96 & TO ALL PREVAILING LOCAL CODE REQUIREMENTS.

| Date | Revision | By |
|------|----------|----|
| | | |
| | | |
| | | |
| | | |

WARNING: These plans are for the exclusive use of Culver Franchising System, LLC and authorized franchise holders only. No part of these plans or the design they represent may be duplicated or reproduced without permission of Culver Franchising System, LLC

Culver Franchising System, LLC
1240 Water Street
Prairie du Sac, WI 53578
608-643-7980



CULVER FRANCHISING SYSTEM, LLC
CULVER'S OF CEDAR LAKE
9717 WEST 133RD AVE

| |
|----------------------------|
| Sheet Contents: |
| HVAC SPECIFICATIONS |
| Project No. 220200 |
| Drawn By: EZY |
| Date: Feb. 24, 2023 |

Sheet
M-7