

Report By:

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**Report: CULVERS - SHELBYVILLE, IN TAB RPT
Function: Test, Adjust, & Balance
Date: 6/7/2022**

**PROJECT
05-16 CULVERS - SHELBYVILLE, IN**

1930 NORTH MORRISTOWN RD

SHELBYVILLE, IN

Client

Captive-Aire Region #60



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

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05-16 CULVERS - SHELBYVILLE, IN

Project Issue Information

Issue Name : HD-2 smoke capture

Description : Smoke capture is not 100%. I tested all diffusers for drafts and increased fan cfm to 110%. Only solution was to use end panel on the left side for 100% smoke capture

Created By : National TAB

Assigned To : National TAB - Tyler Youells

Status : Open

Originated Date : 05/19/2022 - Tyler Youells - National TAB

Project Issue File Details



FuseIT3e6425ca431c4f6cbb971c
fb4cf2e262.jpeg





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05-16 CULVERS - SHELBYVILLE, IN

Project Issue Information

Issue Name : Kitchen DOAS economizer

Description : Per Tom with CAS the board is bad and sends a constant 10V signal to the motor preventing adjustment of the damper.

Created By : National TAB

Assigned To : National TAB - Tyler Youells

Status : Open

Originated Date : 05/17/2022 - Tyler Youells - National TAB



AIR BALANCE SCHEDULE

| UNIT | AREA SERVED | HVAC SUPPLY | | HVAC RETURN | | HVAC OUTDOOR | | OA % | | HOOD MAKE-UP | | HOOD EXHAUST | | GENERAL EXH. | |
|---------------|-------------|-------------|--------|-------------|--------|--------------|--------|--------|--------|--------------|--------|--------------|--------|--------------|--------|
| | | DESIGN | ACTUAL | DESIGN | ACTUAL | DESIGN | ACTUAL | DESIGN | ACTUAL | DESIGN | ACTUAL | DESIGN | ACTUAL | DESIGN | ACTUAL |
| RTU-1 | DINING | 6150 | 6177 | 4400 | 4356 | 1750 | 1821 | 28.5% | 29.5% | | | | | | |
| RTU-2 | KITCHEN | 6150 | 6216 | 4450 | 4378 | 1700 | 1838 | 27.6% | 29.6% | | | | | | |
| PRV-1 | RESTROOMS | | | | | | | | | | | | | 375 | 378 |
| PRV-2 | HD1 GRIDDLE | | | | | | | | | | | 1500 | 1497 | | |
| PRV-3 | HD2 FRYER | | | | | | | | | | | 1500 | 1628 | | |
| EF-1A | MOP ROOM | | | | | | | | | | | | | 75 | 81 |
| TOTALS | | 12300 | 12393 | 8850 | 8734 | 3450 | 3659 | | | 0 | 0 | 3000 | 3125 | 450 | 459 |

NET BUILDING AIRFLOW CALCULATION

| TOTALS | DESIGN | ACTUAL |
|--------------------|----------|-----------|
| TOTAL OA | 3450 | 3659 |
| TOTAL EXHAUST | 3450 | 3584 |
| NET AIRFLOW | 0 | 75 |

| DOOR TESTED | BUILDING PRESSURE MEASUREMENTS (IN. H2O) |
|----------------|--|
| FRONT | 0.002 |
| SIDE | 0.0025 |
| REAR | 0.0042 |
| AVERAGE | 0.0029 |

FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:



CULVERS SHELBYVILLE, IN

Thursday, May 19, 2022

11 Remarks Identified





STOREFRONT



DOAS-1



DOAS-2



MARKED DAMPER POSITION





PRV-1
Serves restroom



PRV-2
Serves Griddle hood



PRV-3
Serves Fryer hood



HD-1



HD-2





HD-2 MOCKED END PANEL



EF-1





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05-16 CULVERS - SHELBYVILLE, IN

CheckList Information

Name : TECH - STEP 1: INITIAL WALKTHROUGH **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

| | |
|--|--|
| All diffusers and grilles are installed and match design? | Yes |
| Perforated diffusers are installed on the cook line? (4-ways will disrupt hood capture) | Yes |
| All hood filters installed and accounted for? | Yes |
| Hoods are wired and have power? | Yes |
| Thermostats have power? | Yes |
| Have trades/general contractor been notified about any issues and are they created on FaciliBuild? | Yes, Mop sink fan is not installed, Resolved by MC and Electrician |
| On the cookline diffusers neck is there 18" (12" minimum) straight rigid duct run attached? | Yes |

Notes/Comments :





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05-16 CULVERS - SHELBYVILLE, IN

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

| | |
|--|-----|
| Economizers are assembled and functional? | No |
| Thermostat wire run from OCP on the RTU to the Ec terminal at the thermostat? If no, jumper can be installed from R to OCP temporarily. (The economizers will not open without OCP being energized.) | Yes |
| Motors are all operating below the FLA rating? | Yes |
| Are belts tight? | n/a |
| If direct drive unit is the speed controller working. | n/a |
| Is gas piping installed and valves turned on? | Yes |
| Unit free of noticeable noise and vibration | Yes |

EF's

| | |
|---|-----|
| Rotation is correct? | Yes |
| Belts are tight? | n/a |
| Grease cup installed on hood fan? | No |
| Hinge kit installed installed on hood fan? | Yes |
| Lean grease rated fans back. Is grease duct installation adequate and is duct ran all the way to the base of the fan? | Yes |



| | |
|--|-----|
| Flex conduit is long enough so that fan can be completely tilted back? | Yes |
| There is no major leakage around base of fan? | Yes |
| Is the motor operating below the motor FLA rating? | Yes |
| For restroom fan(s) is the back draft damper installed and can it fully open? | Yes |
| Unit free of noticeable noise and vibration? | Yes |
| The hood exhaust fans are installed in correct positions and are not switched? | Yes |

HOODS

| | |
|--|-----|
| Kitchen equipment installed in proper places? | Yes |
| Can kitchen equipment be turned on for final smoke test? | Yes |
| Second stage Grease Grabber filters are installed on the griddle hood? | No |

DOCUMENTATION

| | |
|--|-----|
| Have trades/general contractor been notified about any issues and are they created on FaciliBuild? | Yes |
|--|-----|

Notes/Comments :

DOAS-2 Economizer not functional, CAS has a new control board ordered. NTAB to Manually adjust and mark damper position.





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05-16 CULVERS - SHELBYVILLE, IN

CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** NotSubmitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

| | |
|---|-----|
| Is space free of drafting? | Yes |
| Is space comfortable in all areas? | Yes |
| Is the space free of ventilation noise? | Yes |
| If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA". | NA |

Notes/Comments :





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05-16 CULVERS - SHELBYVILLE, IN

CheckList Information

Name : TECH - STEP 4: FINAL TESTS **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

| | |
|---|---|
| List equipment turned on for testing | Griddle and Fryers were on |
| List smoke candle type used | 45 sec smokes |
| Smoke test capture - Perimeter of hood | HOOD1 100%, HOOD 2 100% |
| Smoke test capture - Top of cooking surface | HOOD1 -100%, HOOD-2 90%. Hood 2 has some smoke loss out of the left side. NTAB increased exhaust rate to 110% of design and verified that diffusers were not causing a draft creating the smoke loss. The only solution was to hold up a mock end-panel that brought smoke capture to 100%. |

WITNESS

| | |
|--|------------------|
| Date test was completed | 05/19/2022 |
| TAB tech name / Firm | Tyler/NTAB |
| Site super name / Firm | Troy/Mccon |
| Owner representative name / Firm (if Applicable) | n/a |
| Building pressure at front & back doors (All Systems On) | YES, 0.0029" AVG |

ADDITIONAL

| | |
|---|-----|
| Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative) | YES |
| Thermostats are programmed? | No |



PRODIGY SETTINGS FOR RTU'S

| | |
|---|----|
| Parameter 65 set to 0 | No |
| Parameter 78 set to 0 | No |
| Parameter 105 set to 6 | No |
| Parameter 156 set to 70 (Dining unit only) | No |
| Parameter 156 set to 65 (Kitchen Unit Only) | No |
| Parameter 170 set to 75 (Dining Unit Only) | No |
| Parameter 170 set to 70 (Kitchen Unit Only) | No |
| Parameter 131 set to the same % as OA minimum position? | No |
| Parameter 117 set to the same % as OA minimum position? | No |

Notes/Comments :

CAS WILL INPUT THERMOSTAT SCHEDULES ON THEIR RETURN TRIP



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU1

AREA:DINING

| Unit Data | | |
|---------------------|-------------|----------------------|
| | Design | Actual |
| MFG | LENNOX | CAPTIVE AIRE |
| Serial Num | - | 5146053 |
| Model Num | LGH-180-H4B | CASRTU3-1.400-24-20T |
| Type | - | DOAS |
| Configuration | - | VERTICAL |
| Num OA Filters 1 | - | 4 |
| OA Filter Size 1 | - | 16X25X2 |
| Num Final Filter 1 | - | 8 |
| Final Filter Size 1 | - | 20X25X2 |

| Motor Data | | |
|----------------|---------|--------|
| | Design | Actual |
| Motor MFG | - | TECO |
| Frame | - | 215T |
| Horsepower | - | 10 |
| Motor Rpm | - | 1755 |
| Phase | 3 | 3 |
| Rated Voltage | 208/230 | 230 |
| Rated Amperage | - | 24.3 |

| Drive Data | | |
|------------|--------|--------|
| | Design | Actual |
| | | |

| Test Data | | |
|------------------------|--------|--------------------|
| | Design | Actual |
| SF CFM | 6150 | 6177 |
| SF RPM | - | 1638 |
| RA CFM | 4400 | 4356 |
| OA CFM | 1750 | 1821 |
| RL Voltage | - | 210 AVG |
| RL Amperage | - | 20.8 AVG |
| SF Rotation | - | CCW |
| RA Damper Position | - | MECHANICAL LINKAGE |
| Min OA Damper Position | - | 3.5V |
| Min OA Damper Type | - | ECONOMIZER |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -0.83" |
| Fan Suction SP | - | -2.58" |
| Fan Discharge SP | - | 0.60" |
| Total ESP | - | 1.43" |
| Fan Total SP | - | 3.18" |

| General | | |
|----------------------------|--------|--------|
| | Design | Actual |
| Fan Rotation Correct | - | YES |
| Unit Filters Clean | - | YES |
| Condensate Drain Installed | - | YES |

Completed By: Tyler Youells

Notes: INCREASED OA BY +50CFM. TO OBTAIN POSITIVE BUILDING PRESSURE.



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Project:05-16 CULVERS - SHELBYVILLE, IN

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU1/DINING

| Asset | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
|--------|------------------|--------------------|------|------------|----|--------|--------|
| SGRD1 | ENTRY VESTIBULE | SD3 | 8" | 150 | 1 | 240 | 180 |
| | FINAL CFM | % to design | | | | | |
| | 154 | 102.7 | | | | | |
| SGRD2 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | MENS RR | SD4 | 8" | 150 | 1 | 252 | 143 |
| | FINAL CFM | % to design | | | | | |
| | 140 | 93.3 | | | | | |
| SGRD3 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | WOMENS RR | SD4 | 8" | 150 | 1 | 179 | 146 |
| | FINAL CFM | % to design | | | | | |
| | 158 | 105.3 | | | | | |
| SGRD4 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | HALL | SD1 | 12" | 450 | 1 | 230 | 456 |
| | FINAL CFM | % to design | | | | | |
| | 477 | 106.0 | | | | | |
| SGRD5 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 75 | 144 |
| | FINAL CFM | % to design | | | | | |
| | 155 | 103.3 | | | | | |
| SGRD6 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 89 | 160 |
| | FINAL CFM | % to design | | | | | |
| | 164 | 109.3 | | | | | |
| SGRD7 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 49 | 121 |
| | FINAL CFM | % to design | | | | | |
| | 136 | 90.7 | | | | | |
| SGRD8 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 52 | 146 |
| | FINAL CFM | % to design | | | | | |
| | 144 | 96.0 | | | | | |
| SGRD9 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 29 | 125 |
| | FINAL CFM | % to design | | | | | |
| | 135 | 90.0 | | | | | |
| SGRD10 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 80 | 130 |
| | FINAL CFM | % to design | | | | | |
| | 135 | 90.0 | | | | | |
| SGRD11 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 72 | 129 |
| | FINAL CFM | % to design | | | | | |
| | | | | | | | |



| | | | | | | | |
|--------|--------------------------|--------------------|-------------|-------------------|-----------|---------------|---------------|
| | 138 | 92.0 | | | | | |
| SGRD12 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 220 | 106 |
| | FINAL CFM | % to design | | | | | |
| | 135 | 90.0 | | | | | |
| SGRD13 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 213 | 138 |
| | FINAL CFM | % to design | | | | | |
| | 149 | 99.3 | | | | | |
| SGRD14 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 180 | 174 |
| | FINAL CFM | % to design | | | | | |
| | 154 | 102.7 | | | | | |
| SGRD15 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 270 | 165 |
| | FINAL CFM | % to design | | | | | |
| | 137 | 91.3 | | | | | |
| SGRD16 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 220 | 177 |
| | FINAL CFM | % to design | | | | | |
| | 153 | 102.0 | | | | | |
| SGRD17 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 190 | 159 |
| | FINAL CFM | % to design | | | | | |
| | 165 | 110.0 | | | | | |
| SGRD18 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 188 | 155 |
| | FINAL CFM | % to design | | | | | |
| | 142 | 94.7 | | | | | |
| SGRD19 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DINING | SD1 | 8" | 150 | 1 | 230 | 167 |
| | FINAL CFM | % to design | | | | | |
| | 143 | 95.3 | | | | | |
| SGRD20 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DRINKS & CONDITM ENTS | SD1 | 10" | 300 | 1 | 445 | 313 |
| | FINAL CFM | % to design | | | | | |
| | 313 | 104.3 | | | | | |
| SGRD21 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | ENTRY | SD1 | 8" | 150 | 1 | 71 | 145 |
| | FINAL CFM | % to design | | | | | |
| | 154 | 102.7 | | | | | |
| SGRD22 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | CUSTOMER ORDER AREA | SD1 | 12" | 450 | 1 | 220 | 480 |
| | FINAL CFM | % to design | | | | | |
| | 486 | 108.0 | | | | | |
| SGRD23 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | CUSTOMER SERVIC E | SD1 | 10" | 350 | 1 | 251 | 343 |
| | FINAL CFM | % to design | | | | | |
| | 323 | 92.3 | | | | | |
| SGRD24 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | CUSTOMER SERVIC E | SD1 | 10" | 350 | 1 | 261 | 373 |
| | FINAL CFM | % to design | | | | | |
| | 376 | 107.4 | | | | | |
| SGRD25 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |



| | | | | | | | |
|--------|------------------|--------------------|-------------|-------------------|-----------|---------------|---------------|
| | CUSTOMER SERVICE | SD1 | 10" | 350 | 1 | 220 | 331 |
| | FINAL CFM | % to design | | | | | |
| | 330 | 94.3 | | | | | |
| SGRD26 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | CUSTOMER SERVICE | SD1 | 10" | 350 | 1 | 264 | 342 |
| | FINAL CFM | % to design | | | | | |
| | 353 | 100.9 | | | | | |
| SGRD27 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DRIVE THRU | SD1 | 12" | 500 | 1 | 612 | 507 |
| | FINAL CFM | % to design | | | | | |
| | 520 | 104.0 | | | | | |
| SGRD28 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | OFFICE | SD1 | 10" | 200 | 1 | 280 | 211 |
| | FINAL CFM | % to design | | | | | |
| | 205 | 102.5 | | | | | |

Completed By: Tyler Youells on

| Asset | Notes |
|-------|-------|
|-------|-------|



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU2

AREA:KITCHEN

| Unit Data | | |
|---------------------|-------------|----------------------|
| | Design | Actual |
| MFG | LENNOX | CAPTIVE AIRE |
| Serial Num | - | 5146053 |
| Model Num | LGH-210-H4B | CASRTU3-1.400-24-20T |
| Type | - | DOAS |
| Configuration | - | VERTICAL |
| Num OA Filters 1 | - | 4 |
| OA Filter Size 1 | - | 16X25X2 |
| Num Final Filter 1 | - | 8 |
| Final Filter Size 1 | - | 20X25X2 |

| Motor Data | | |
|----------------|---------|--------|
| | Design | Actual |
| Motor MFG | - | TECO |
| Frame | - | 215T |
| Horsepower | - | 10 |
| Motor Rpm | - | 1755 |
| Phase | 3 | 3 |
| Rated Voltage | 208/230 | 230 |
| Rated Amperage | - | 24.3 |

| Drive Data | | |
|------------|--------|--------|
| | Design | Actual |
| | | |

| Test Data | | |
|------------------------|--------|--------------------|
| | Design | Actual |
| SF CFM | 6150 | 6216 |
| SF RPM | - | 1638 |
| RA CFM | 4450 | 4378 |
| OA CFM | 1700 | 1838 |
| RL Voltage | - | 209 AVG |
| RL Amperage | - | 20.9 AVG |
| SF Rotation | - | CCW |
| RA Damper Position | - | MECHANICAL LINKAGE |
| Min OA Damper Position | - | MARKED |
| Min OA Damper Type | - | ECONOMIZER |

| Performance Data | | |
|------------------|--------|--------|
| | Design | Actual |
| MA Plenum SP | - | -1.02 |
| Fan Suction SP | - | -2.67" |
| Fan Discharge SP | - | 0.58" |
| Total ESP | - | 1.60" |
| Fan Total SP | - | 3.25" |

| General | | |
|----------------------------|--------|--------|
| | Design | Actual |
| Fan Rotation Correct | - | YES |
| Unit Filters Clean | - | YES |
| Condensate Drain Installed | - | YES |

Completed By: Tyler Youells

Notes:



National TAB

Project:05-16 CULVERS - SHELBYVILLE, IN

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU2/KITCHEN

| Asset | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
|--------|------------------|--------------------|------|------------|----|--------|--------|
| SGRD1 | SUNDAE SERVICE | SD1 | 12" | 600 | 1 | 267 | |
| | FINAL CFM | % to design | | | | | |
| | 542 | 90.3 | | | | | |
| SGRD2 | SUNDAER SERVICE | SD1 | 12" | 600 | 1 | 303 | |
| | FINAL CFM | % to design | | | | | |
| | 584 | 97.3 | | | | | |
| SGRD3 | COOKLINE | SD5 | 10" | 200 | 1 | 235 | |
| | FINAL CFM | % to design | | | | | |
| | 201 | 100.5 | | | | | |
| SGRD4 | COOKLINE | SD5 | 10" | 375 | 1 | 336 | |
| | FINAL CFM | % to design | | | | | |
| | 373 | 99.5 | | | | | |
| SGRD5 | FOOD PREP | SD5 | 12" | 400 | 1 | 119 | |
| | FINAL CFM | % to design | | | | | |
| | 405 | 101.3 | | | | | |
| SGRD6 | FOOD PREP | SD5 | 12" | 400 | 1 | 587 | |
| | FINAL CFM | % to design | | | | | |
| | 414 | 103.5 | | | | | |
| SGRD7 | COOKLINE | SD5 | 10" | 250 | 1 | 347 | |
| | FINAL CFM | % to design | | | | | |
| | 246 | 98.4 | | | | | |
| SGRD8 | COOKLINE | SD5 | 10" | 275 | 1 | 475 | |
| | FINAL CFM | % to design | | | | | |
| | 289 | 105.1 | | | | | |
| SGRD9 | TOILET | SD1 | 6" | 75 | 1 | 113 | |
| | FINAL CFM | % to design | | | | | |
| | 71 | 94.7 | | | | | |
| SGRD10 | ALCOVE | SD5 | 8" | 125 | 1 | 306 | |
| | FINAL CFM | % to design | | | | | |
| | 133 | 106.4 | | | | | |
| SGRD11 | FOOD PREP | SD5 | 12" | 350 | 1 | 635 | |
| | FINAL CFM | % to design | | | | | |
| | | | | | | | |



| | | | | | | | |
|--------|------------------|--------------------|-------------|-------------------|-----------|---------------|---------------|
| | 379 | 108.3 | | | | | |
| SGRD12 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DISHWASHING | SD5 | 12" | 350 | 1 | 646 | |
| | FINAL CFM | % to design | | | | | |
| | 382 | 109.1 | | | | | |
| SGRD13 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DISHWASHING | SD5 | 12" | 350 | 1 | 239 | |
| | FINAL CFM | % to design | | | | | |
| | 375 | 107.1 | | | | | |
| SGRD14 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | UTILITY | SD1 | 12" | 600 | 1 | 365 | |
| | FINAL CFM | % to design | | | | | |
| | 584 | 97.3 | | | | | |
| SGRD15 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DRY GOODS | SD1 | 12" | 600 | 1 | 343 | |
| | FINAL CFM | % to design | | | | | |
| | 639 | 106.5 | | | | | |
| SGRD16 | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
| | DRY GOODS | S1D | 12" | 600 | 1 | 486 | |
| | FINAL CFM | % to design | | | | | |
| | 599 | 99.8 | | | | | |

Completed By: Tyler Youells on

| Asset | Notes |
|-------|-------|
|-------|-------|



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF-A1

AREA:MOP ROOM

| Unit Data | | |
|---------------|----------|--------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XCR-B80 | CFA 100CA |
| Serial Num | - | 5414570 |
| Type | CEILING | CEILING |
| Configuration | VERTICAL | HORIZONTAL |

| Test Data | | |
|--------------|--------|------------|
| | Design | Actual |
| CFM | 75 | 81 |
| Fan RPM | 885 | NA |
| Fan Rotation | - | CORRECT |
| Motor RPM | - | NA |
| System SetPt | - | FULL SPEED |
| RL Voltage | - | 120.1 |
| RL Amperage | - | 0.40 |

| Motor Data | | |
|------------------|--------|--------|
| | Design | Actual |
| Motor MFG | - | BROAN |
| Frame | - | NL |
| Horsepower | - | 87W |
| Motor Rpm | 900 | NA |
| Phase | 1 | 1 |
| Voltage (rated) | 115 | 115 |
| Amperage (rated) | - | 1.1 |
| Service Factor | - | 1 |

Completed By: Tyler Youells

Notes:

| Asset | Notes |
|-------|-------|
| | |



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: PRV1

AREA:RESTROOMS

| Unit Data | | |
|---------------|--------------|--------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XRED - 095-D | DR12HFA |
| Serial Num | - | 5146053 |
| Type | DOWNBLAST | DOWNBLAST |
| Configuration | HORIZONTAL | VERTICAL |

| Motor Data | | |
|------------------|--------|-------------|
| | Design | Actual |
| Motor MFG | - | TELCO GREEN |
| Frame | - | NL |
| Horsepower | 0.0667 | 0.25 |
| Motor Rpm | 1550 | 1800 |
| Phase | 1 | 1 |
| Voltage (rated) | 115 | 115 |
| Amperage (rated) | - | 2.9 |
| Service Factor | - | 1 |

| Test Data | | |
|------------------|--------|--------|
| | Design | Actual |
| CFM | 375 | 378 |
| Fan RPM | 1479 | 864 |
| Fan Rotation | - | CCW |
| Motor RPM | - | 864 |
| System SetPt | - | 48% |
| RL Voltage | - | 120.2 |
| RL Amperage | - | 0.63 |
| Total ESP | 0.5" | 0.10" |
| Fan Inlet SP | - | -0.10" |
| Fan Discharge SP | - | ATM |

Completed By: Tyler Youells

Notes:



National TAB

Project:05-16 CULVERS - SHELBYVILLE, IN

FAN - Exhaust



Comfort. Under control.

Diffuser Ret/Exh (GRD)

PRV1/RESTROOMS

| Asset | Location | Type | Size | DESIGN CFM | AK | CFM(1) | CFM(2) |
|-------|------------------|--------------------|------|------------|----|--------|--------|
| EGRD1 | MENS RR | EG1 | 8X8 | 150 | 1 | 215 | |
| | FINAL CFM | % to design | | | | | |
| | 150 | 100.0 | | | | | |
| EGRD2 | WOMENS RR | EG1 | 8X8 | 150 | 1 | 225 | |
| | FINAL CFM | % to design | | | | | |
| | 154 | 102.7 | | | | | |
| EGRD3 | TOILET | EG1 | 8X8 | 75 | 1 | 232 | |
| | FINAL CFM | % to design | | | | | |
| | 74 | 98.7 | | | | | |

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| Asset | Notes |
|-------|-------|
| | |



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: PRV2

AREA:HD1 GRIDDLE

| Unit Data | | |
|---------------|---------------|--------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XRUB-160XP-15 | DU85HFA |
| Serial Num | - | 5146053 |
| Type | UPBLAST | UPBLAST |
| Configuration | VERTICAL | VERTICAL |

| Test Data | | |
|---------------|--------|-------------------|
| | Design | Actual |
| CFM | 1500 | 1497 |
| Fan RPM | 2411 | 1093 |
| Fan Rotation | - | CCW |
| Motor RPM | - | 1093 |
| RL Voltage | - | 102.2/102.7/102.4 |
| RL Amperage | - | 1.9 AVG |
| Suction ESP | - | -0.70" |
| Discharge ESP | - | ATM |
| Total ESP | 2.337" | 0.70" |

| Motor Data | | |
|------------------|--------|--------|
| | Design | Actual |
| Motor MFG | - | HSSA |
| Frame | - | NL |
| Horsepower | 1.5 | 0.75 |
| Motor Rpm | 1725 | 1725 |
| Phase | 3 | 3 |
| Voltage (rated) | 208 | 208 |
| Amperage (rated) | - | 2.6 |
| Service Factor | - | 1.15 |

| Drive Data | | |
|------------|--------|--------|
| | Design | Actual |
| | | |

Completed By: Tyler Youells

Notes:FAN SPEED SETPOINT: 38HZ

| Asset | Notes |
|-------|-------|
| | |



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: PRV3

AREA:HD2 FRYER

| Unit Data | | |
|---------------|------------|--------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XRUB-140-7 | DU85HFA |
| Serial Num | - | 5146053 |
| Type | - | UPBLAST |
| Configuration | - | VERTICAL |

| Test Data | | |
|---------------|--------|-------------------|
| | Design | Actual |
| CFM | - | 1628 |
| Fan RPM | - | 1147 |
| Fan Rotation | - | CCW |
| Motor RPM | - | 1147 |
| RL Voltage | - | 104.2/104.5/104.3 |
| RL Amperage | - | 2.1 AVG |
| Suction ESP | - | -0.72" |
| Discharge ESP | - | ATM |
| Total ESP | - | 0.72" |

| Motor Data | | |
|------------------|--------|--------|
| | Design | Actual |
| Motor MFG | - | HSSA |
| Frame | - | NL |
| Horsepower | - | 0.75 |
| Motor Rpm | - | 1725 |
| Phase | - | 34 |
| Voltage (rated) | - | 208 |
| Amperage (rated) | - | 2.6 |
| Service Factor | - | 1.15 |

| Drive Data | | |
|------------|--------|--------|
| | Design | Actual |
| | | |

Completed By: Tyler Youells

Notes:FAN SPEED SETPOINT: 39.9HZ

| Asset | Notes |
|-------|-------|
| | |



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD1

AREA:GRIDDLE

| Unit Data | | |
|------------------|----------------------------|----------------------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XGEP-64-S | 3347 BD-2 |
| Job / Serial Num | - | 5146053 |
| Type | TYPE I LOW PROXIMITY | TYPE I LOW PROXIMITY |
| Hood length | 64" | 66" |
| Hood Width | 23" | 32" |

| Performance Data | | |
|----------------------------|--------|---------------|
| | Design | Actual |
| Smoke Generation Type | - | 45 SEC SMOKE |
| Hood Capture % | - | 100% |
| End Panels Installed (Y/N) | - | 45 DEG PANELS |

| General | | |
|---------------------|--------|------------|
| | Design | Actual |
| Third Party Witness | - | TROY |
| Third Party Company | - | MCCON |
| Tech Witness | - | TYLER/NTAB |

| Test Data Exhaust | | |
|-------------------------|----------------|---------------|
| | Design | Actual |
| Filter Type | GREASE GRABBER | CAPTRATE SOLO |
| Filter Size 1 | 16X16 | 16X16 |
| Filter Qty 1 | 4 | 4 |
| Filter AK factor size 1 | 1.53 | 1.62 |
| Filter Total AK Area | 6.12 | 6.48 |
| Filter1 FPM | - | 223 |
| Filter2 FPM | - | 239 |
| Filter3 FPM | - | 228 |
| Filter4 FPM | - | 236 |
| Filter Ave FPM(corr) | - | 231 |
| CFM | - | 1497 |

| Cooking Equipment | | |
|-------------------|--------|---------|
| | Design | Actual |
| Item 1 | - | GRIDDLE |

Completed By: Tyler Youells

Notes:

| Asset | Notes |
|-------|-------|
| | |



National TAB

Project: 05-16 CULVERS - SHELBYVILLE, IN

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD2

AREA:FRYER

| Unit Data | | |
|------------------|----------------------|----------------------|
| | Design | Actual |
| MFG | ACCUREX | CAPTIVE AIRE |
| Model Num | XXEP-83-S | 3347 BD-2 |
| Job / Serial Num | - | 5146053 |
| Type | TYPE I LOW PROXIMITY | TYPE I LOW PROXIMITY |
| Hood length | 83" | 84" |
| Hood Width | 23" | 33" |

| Performance Data | | |
|----------------------------|--------|---------------|
| | Design | Actual |
| Smoke Generation Type | - | 45 SEC SMOKE |
| Hood Capture % | - | 90% |
| End Panels Installed (Y/N) | - | CORNER PANELS |

| General | | |
|---------------------|--------|------------|
| | Design | Actual |
| Third Party Witness | - | TROY |
| Third Party Company | - | MCCON |
| Tech Witness | - | TYLER/NTAB |

| Test Data Exhaust | | |
|-------------------------|----------|---------------|
| | Design | Actual |
| Filter Type | XTRACTOR | CAPTRATE SOLO |
| Filter Size 1 | 16X16 | 16X16 |
| Filter Qty 1 | 5 | 5 |
| Filter AK factor size 1 | 1.53 | 1.62 |
| Filter Total AK Area | 7.65 | 8.1 |
| Filter1 FPM | - | 204 |
| Filter2 FPM | - | 199 |
| Filter3 FPM | - | 213 |
| Filter4 FPM | - | 197 |
| Filter5 FPM | - | 194 |
| Filter Ave FPM(corr) | - | 201 |
| CFM | - | 1628 |

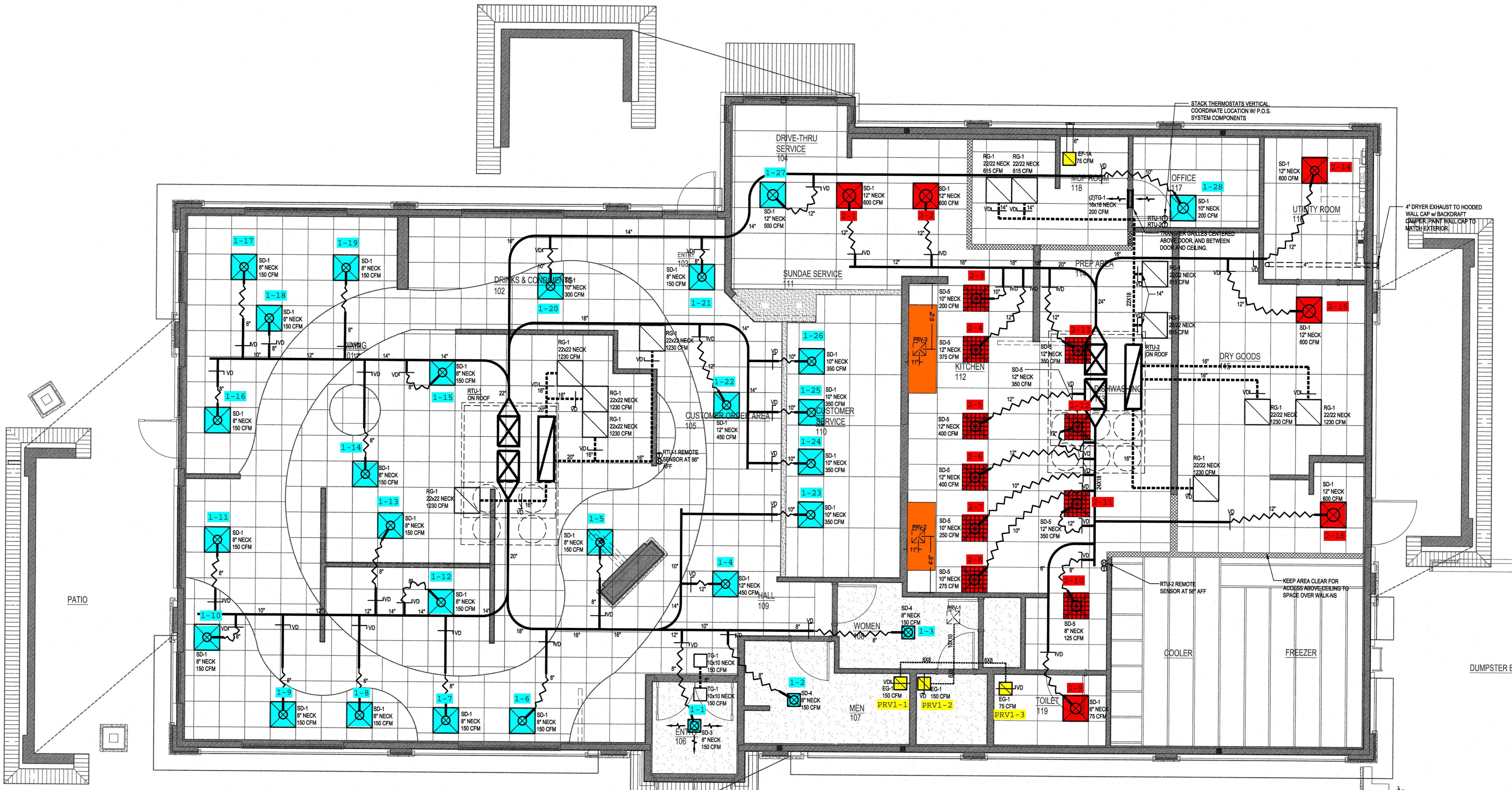
| Cooking Equipment | | |
|-------------------|--------|--------------|
| | Design | Actual |
| Item 1 | - | 4 BAT FRYERS |

Completed By: Tyler Youells

Notes: THERE IS SMOKE ESCAPING TO THE LEFT SIDE, NTAB VERIFIED ALL DIFFUSERS WERE CORRECT FLOW, ALL EQUIPMENT IS IN PLACE AND ON. INCREASED FAN TO 110% OF DESIGN. PUTTING A MOCK END PANEL INCREASED HOOD CAPTURE TO 100%.

| Asset | Notes |
|-------|-------|
| | |





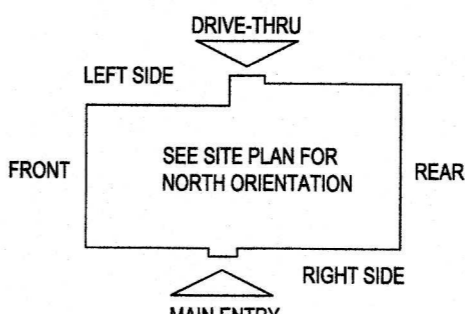
STACK THERMOSTATS VERTICAL
COORDINATE LOCATION W/ P.O.S.
SYSTEM COMPONENTS

4" DRYER EXHAUST TO HOODED
WALL CAP W/ BACKDRAFT
DAMPER. PAINT WALL CAP TO
MATCH EXTERIOR.

RTU-2 REMOTE
SENSOR AT 56" AFF

KEEP AREA CLEAR FOR
ACCESS ABOVE CEILING TO
SPACE OVER WALK-INS

E5 HVAC PLAN
SCALE: 1/4" = 1'-0"



NOTE: ALL DUCTWORK TO BE LOCATED IN TRUSS SPACE WHERE POSSIBLE.
SEE FRAMING PLAN.