## INDOOR UNIT SCHEDULE

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System 1 | Director's Room | VRF-1-8 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 74.3 / 62.8 | 70.1 | 24,339.4 | 18,543.8 | 21,231.1 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 105 | VRF-1-4 | Carrier | 40VMM036A--3 | Medium Static Duct | 36,000.0 | 42,000.0 | 3/8 / 5/8 | 69.1 / 60.4 | 66.5 | 25,706.6 | 20,664.4 | 26,899.7 | 208-230V / 1-phase | 5.0 / 15 | Med | 980 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 106 | VRF-1-5 | Carrier | 40VMM036A--3 | Medium Static Duct | 36,000.0 | 42,000.0 | 3/8 / 5/8 | 69.1 / 60.4 | 66.5 | 25,706.6 | 20,664.4 | 26,899.7 | 208-230V / 1-phase | 5.0 / 15 | Med | 980 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 107 | VRF-1-6 | Carrier | 40VMM036A--3 | Medium Static Duct | 36,000.0 | 42,000.0 | 3/8 / 5/8 | 69.1 / 60.4 | 66.5 | 25,706.6 | 20,664.4 | 26,899.7 | 208-230V / 1-phase | 5.0 / 15 | Med | 980 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 108 | VRF-1-7 | Carrier | 40VMM036A--3 | Medium Static Duct | 36,000.0 | 42,000.0 | 3/8 / 5/8 | 69.1 / 60.4 | 66.5 | 25,706.6 | 20,664.4 | 26,899.7 | 208-230V / 1-phase | 5.0 / 15 | Med | 980 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 110 | VRF-1-3 | Carrier | 40VMM015A--3 | Medium Static Duct | 15,000.0 | 17,000.0 | 1/4 / 1/2 | 66.3 / 59.8 | 63.9 | 10,343.6 | 8,354.6 | 11,072.0 | 208-230V / 1-phase | 3.13 / 15 | Med | 450 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Classroom 111 | VRF-1-2 | Carrier | 40VMM015A--3 | Medium Static Duct | 15,000.0 | 17,000.0 | 1/4 / 1/2 | 66.3 / 59.8 | 63.9 | 10,343.6 | 8,354.6 | 11,072.0 | 208-230V / 1-phase | 3.13 / 15 | Med | 450 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Hallway | VRF-1-9 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 74.0 / 66.4 | 70.1 | 30,101.5 | 20,998.2 | 21,231.1 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Kitchen 114 | VRF-1-10 | Carrier | 40VMM007A--3 | Medium Static Duct | 7,000.0 | 8,000.0 | 1/4 / 1/2 | 73.0 / 66.4 | 69.1 | 7,024.0 | 6,328.3 | 5,036.8 | 208-230V / 1-phase | 1.25 / 15 | Med | 220 | 0.32 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Electrical 115 | VRF-1-1 | Carrier | 40VMW007---3 | High Wall | 7,500.0 | 8,500.0 | 1/4 / 1/2 | 74.2 / 69.0 | 70.4 | 7,690.3 | 6,502.4 | 5,272.1 | 208-230V / 1-phase | 0.45 / 15 | Med | 270 | 0 | 40VM900003 | | | 1, 2, 3 |
| System 1 | Activity 109 | VRF-1-11 | Carrier | 40VMH072---3 | High Static Duct | 72,000.0 | 81,000.0 | 3/8 / 7/8 | 73.0 / 61.8 | 69.8 | 55,495.9 | 43,004.2 | 50,896.8 | 208-230V / 1-phase | 9.7 / 15 | Med | 1794 | 1.00 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 201 | VRF-2-1 | Carrier | 40VMM048A--3 | Medium Static Duct | 48,000.0 | 54,000.0 | 3/8 / 5/8 | 80.0 / 67.0 | 70.0 | 47,246.2 | 32,314.5 | 33,663.6 | 208-230V / 1-phase | 5.0 / 15 | Med | 1100 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 202 | VRF-2-2 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 70.0 / 61.0 | 66.7 | 22,205.7 | 17,428.6 | 21,662.5 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 203 | VRF-2-3 | Carrier | 40VMM018A--3 | Medium Static Duct | 18,000.0 | 21,000.0 | 3/8 / 5/8 | 66.6 / 59.5 | 64.3 | 12,902.5 | 10,466.4 | 13,588.9 | 208-230V / 1-phase | 3.13 / 15 | Med | 540 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 204 | VRF-2-4 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 69.4 / 60.5 | 66.3 | 21,595.5 | 17,105.4 | 21,719.9 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 205 | VRF-2-5 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 69.4 / 60.5 | 66.3 | 21,595.5 | 17,105.4 | 21,719.9 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 206 | VRF-2-6 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 69.4 / 60.5 | 66.3 | 21,595.5 | 17,105.4 | 21,719.9 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Classroom 207 | VRF-2-7 | Carrier | 40VMM030A--3 | Medium Static Duct | 30,000.0 | 34,000.0 | 3/8 / 5/8 | 69.4 / 60.5 | 66.3 | 21,595.5 | 17,105.4 | 21,719.9 | 208-230V / 1-phase | 5.0 / 15 | Med | 900 | 0.6 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Room 221 and 223 | VRF-2-9 | Carrier | 40VMM009A--3 | Medium Static Duct | 9,000.0 | 10,000.0 | 1/4 / 1/2 | 74.6 / 62.5 | 70.3 | 7,210.0 | 6,314.3 | 6,192.2 | 208-230V / 1-phase | 1.25 / 15 | Med | 260 | 0.32 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Hallway | VRF-2-8 | Carrier | 40VMH096---3 | High Static Duct | 96,000.0 | 108,000.0 | 3/8 / 7/8 | 74.5 / 62.1 | 70.4 | 75,357.7 | 55,153.1 | 66,726.3 | 208-230V / 1-phase | 10.2 / 15 | Med | 2400 | 1.00 | 40VM900003 | | | 1, 2, 3 |
| System 2 | Room 303 219 301 | VRF-2-10 | Carrier | 40VMM007A--3 | Medium Static Duct | 7,000.0 | 8,000.0 | 1/4 / 1/2 | 74.8 / 62.3 | 71.3 | 5,550.8 | 5,520.6 | 4,841.3 | 208-230V / 1-phase | 1.25 / 15 | Med | 220 | 0.32 | 40VM900003 | | | 1, 2, 3 |

Notes & Options:
1 Nominal cooling capacities are based on indoor air temperature of 80°F DB / 67°F WB, outdoor air temperature of 95°F (DB)
2 Nominal heating capacities are based on indoor air temperature of 70°F DB, outdoor air temperature of 47°F DB / 43°F WB
3 LATs estimated using formula for sensible capacity = (1.08 Btu/(hr cfm °F)) x cfm x deltaT

## OUTDOOR UNIT SCHEDULE

| System Tag | Tag Reference | Make | Model Number | Modules | Nominal Cooling Capacity (BTU/h) | Nominal Heating Capacity (BTU/h) | Project Design Cooling Outdoor Temp DB (°F) | Project Design Heating Outdoor Temp WB (°F) | Corrected Cooling Total Capacity (BTU/h) | Corrected Heating Capacity (BTU/h) | Voltage / Phase | MCA | RFS [or MOCP] | Notes / Options |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System 1 | VRF-01 | Carrier | 38VMA312RDS6-1 | | 312,000.0 | 343,000.0 | 105.0 | 16.5 | 248,164.8 | 233,410.5 | 460V / 3-phase 4-wire | 55 | 60 | 1, 2, 3, 4, 5, 6 |
| System 2 | VRF-02 | Carrier | 38VMA312RDS6-1 | | 312,000.0 | 343,000.0 | 105.0 | 16.5 | 256,854.7 | 233,554.3 | 460V / 3-phase 4-wire | 55 | 60 | 1, 2, 3, 4, 5, 6 |

Notes & Options:
1 Nominal cooling capacities are based on indoor air temperature of 80°F DB / 67°F WB, outdoor air temperature of 95°F (DB)
2 Nominal heating capacities are based on indoor air temperature of 70°F DB, outdoor air temperature of 47°F DB / 43°F WB
3 VRF Efficiency values for EER, IEER, and COP are for mixed ducted and non-ducted indoor units based on AHRI 1230 test method.
4 Ductless and Single-Phase VRF Heat Pump Efficiency values for EER, SEER, and HSPF are for mixed ducted and non-ducted indoor units based on AHRI 210/240 test method.
5 Preliminary Additional Field Charge is calculated based on software inputs; Final Additional Field Charge must be calculated based on final "as-built" piping dimensions.

## VRF HEAT RECOVERY MDC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| System 1 | | Carrier | 40VMD016ML-3 | Main | 15 | 208-230V/1-phase | 1.54 | 1, 2, 3, 4, 5 |
| System 2 | | Carrier | 40VMD016ML-3 | Main | 15 | 208-230V/1-phase | 1.54 | 1, 2, 3, 4, 5 |

Notes & Options:
1 For indoor units with capacities greater than 54 kBtu/h, two ports must be twinned using Y-joints to create a single port.
2 Up to 2 Sub MDCs can be connected to 1 Main MDC using Y-Joint assembly.
3 No port assignments are needed for communication wire between IDUs and MDC.
4 Communication wiring between MDC and IDUs shall use "quick connects".
5 Max IDU capacity for Standard Main MDCs is 324 kBtu/h; for Large Main MDCs, it is 504 kBtu/hr. Max IDU capacity for a single Sub MDC is 126 kBtu/hr; when two Sub MDCs are connected, their combined max IDU capacity is 168 kBtu/hr.

## OUTSIDE AIR CALCULATIONS
(BASED ON TABLE 402.1, 2012 UMC)

| BUILDING SPACE | OCCUPANCY CATEGORY | SQ. FT. | NUMBER OF PEOPLE | CFM/SF | CFM/ PERSON | TOTAL CFM/ SF | TOTAL CFM/ PERSON | TOTAL SPACE O/A CFM |
|---|---|---|---|---|---|---|---|---|
| Office | Office | 119 | 1 | 0.06 | 5 | 7.14 | 5 | 12.14 |
| Director | Office | 114 | 1 | 0.06 | 5 | 6.84 | 5 | 11.84 |
| Hall | Corridor | 1439 | 0 | 0.06 | 0 | 86.34 | 0 | 86.34 |
| Classroom 105 | Classrooms (age 5-8) | 695 | 25 | 0.12 | 10 | 83.4 | 250 | 333.4 |
| Classroom 106 | Classrooms (age 5-8) | 680 | 25 | 0.12 | 10 | 81.6 | 250 | 331.6 |
| Classroom 107 | Classrooms (age 5-8) | 685 | 25 | 0.12 | 10 | 82.2 | 250 | 332.2 |
| Classroom 108 | Classrooms (age 5-8) | 688 | 25 | 0.12 | 10 | 82.56 | 250 | 332.56 |
| Classroom 110 | Classrooms (age 5-8) | 454 | 17 | 0.12 | 10 | 54.48 | 170 | 224.48 |
| Classroom 111 | Classrooms (age 5-8) | 454 | 17 | 0.12 | 10 | 54.48 | 170 | 224.48 |
| Kitchen 114 | Kitchen | 152 | 2 | 0.12 | 7.5 | 18.24 | 15 | 33.24 |
| Classroom 201 | Classrooms (age 5-8) | 682 | 25 | 0.12 | 10 | 81.84 | 250 | 331.84 |
| Classroom 202 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Classroom 203 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Classroom 204 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Classroom 205 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Classroom 206 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Classroom 207 | Classrooms (age 5-8) | 630 | 23 | 0.12 | 10 | 75.6 | 230 | 305.6 |
| Hall 216 | Corridor | 2219 | 0 | 0.06 | 0 | 133.14 | 0 | 133.14 |
| Activity 305 | Multi-use Assembly | 4315 | 50 | 0.06 | 5 | 258.9 | 250 | 508.9 |
| Office | Office | 858 | 2 | 0.06 | 5 | 51.48 | 10 | 61.48 |
| Office | Office | 858 | 2 | 0.06 | 5 | 51.48 | 10 | 61.48 |
| Office | Office | 858 | 2 | 0.06 | 5 | 51.48 | 10 | 61.48 |
| Office | Office | 858 | 2 | 0.06 | 5 | 51.48 | 10 | 61.48 |
| Office | Office | 858 | 2 | 0.06 | 5 | 51.48 | 10 | 61.48 |
| Hall | Corridor | 1438 | 0 | 0.06 | 0 | 86.28 | 0 | 86.28 |
| Kitchen | Kitchen | 152 | 0 | 0.12 | 7.5 | 18.24 | 0 | 18.24 |
| | | | | | | | | |
| | | | | TOTAL OUTSIDE AIR REQUIRED | | | | **5142** |
| | | | | TOTAL OUTSIDE AIR SUPPLIED | | | | **5150** |

## ROOFTOP UNIT ELECTRIC HEAT SCHEDULE

| | | | | FAN DATA | | | | COOLING MODE | | | | | | HEATING MODE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UNIT TAG | SUPPLY CFM | O/A CFM | E/A CFM | SUPPLY FAN HP | SUPPLY EXT. SP. | EXHAUST FAN HP | EXHAUST EXT. SP. | O/A EAT DB/WB | PRE TREAT O/A DB/WB | R/A DB/WB | LAT DB/WB | TOTAL WHEEL CAPACITY (BTUH) | TOTAL CAPACITY (BTUH) | SENS. CAPACITY (BTUH) | O/A EAT DB/WB | PRE TREAT O/A DB/WB | R/A DB/WB | LAT DB/WB | TOTAL WHEEL CAPACITY (BTUH) | AMBIENT TEMP (F) | VOLTS/PH/HZ | ELEC HEAT (KW) | OUTDOOR UNIT MCA/ MOCP | MAKE/ MODEL | WEIGHT (LBS) | NOTES |
| RTU-1 | 3,000 | 3,000 | 2,000 | 3.0 | 3.0 | 2.0 | 1.5 | 98/80 | 82.6/69.8 | 75.0/62.5 | 55/54 | 126,400 | 60,000 | 42,000 | 27.0/22.7 | 53.6/40.6 | 70/50 | 55/54 | 99,000 | 105 | 460/3/60 | 30 | 54.9/60 | CARRIER 62X | 2,870 | ALL |
| RTU-2 | 3,000 | 3,000 | 2,000 | 3.0 | 3.0 | 2.0 | 1.5 | 98/80 | 82.6/69.8 | 75.0/62.5 | 55/54 | 126,400 | 60,000 | 42,000 | 27.0/22.7 | 53.6/40.6 | 70/50 | 55/54 | 99,000 | 105 | 460/3/60 | 30 | 54.9/60 | CARRIER 62X | 2,870 | ALL |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

NOTES:
1. PROVIDE CONDENSATE DRAIN, TRAP AND RUN TO THE NEAREST DRAIN OUTLET AS INDICATED ON DRAWINGS.
2. PROVIDE MERV 8 -2" DEEP FILTER WITH THE UNIT.
3. UNIT EER MUST COMPLY WITH IECC-2015 REQUIREMENTS.
4. PROVIDE 2-STAGE CONTROLS FOR ELECTRIC HEATER.
5. PROVIDE UNIT WITH RAWAL MODULATING VALVE.
6. INSTALL AUXILIARY DRAIN PAN UNDER UNIT WITH WATER SENSING DEVICE TO SHUT UNIT DOWN WHEN WATER IS SENSED IN THE PAN PER CODE REQUIREMENTS.
7. PROVIDE EC FAN MOTOR.
8. PROVIDE UNIT WITH GFCI OUTLET.
9. PROVIDE UNIT WITH ECONOMIZER AS REQUIRED BY IECC 2015.
10. PROVIDE AT LEAST 3 STAGES OF COOLING.
11. PROVIDE UNIT WITH BAROMETRIC RELIEF DAMPER.
12. PROVIDE WITH BACNET CONTROLS.


O 281 410 1349
www.wsquaredarch.com
w [squared] architects

GK ENGINEERS
GK ENGINEERS, LLC
TEXAS-REG # F-18854
5959 W. LOOP SOUTH, SUITE 385
BELLAIRE, TX 77096
PH: 832.250.1966
PH: 713.208.0964


ISSUES AND REVISIONS

| NO | DATE | DESCRIPTION |
|---|---|---|
| A | 07-22-2019 | ISSUE FOR PERMIT |
| B | 08-16-2019 | ISSUE FOR BID |

STATE OF TEXAS
DAVIA ANN GERNAND
109903
LICENSED
PROFESSIONAL ENGINEER
16 AUG 2019

# GH SCHOOL
4724 N MAIN STREET

SHEET TITLE
UNIT SCHEDULE

SHEET NUMBER
M101

PROJECT # 19.02


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