

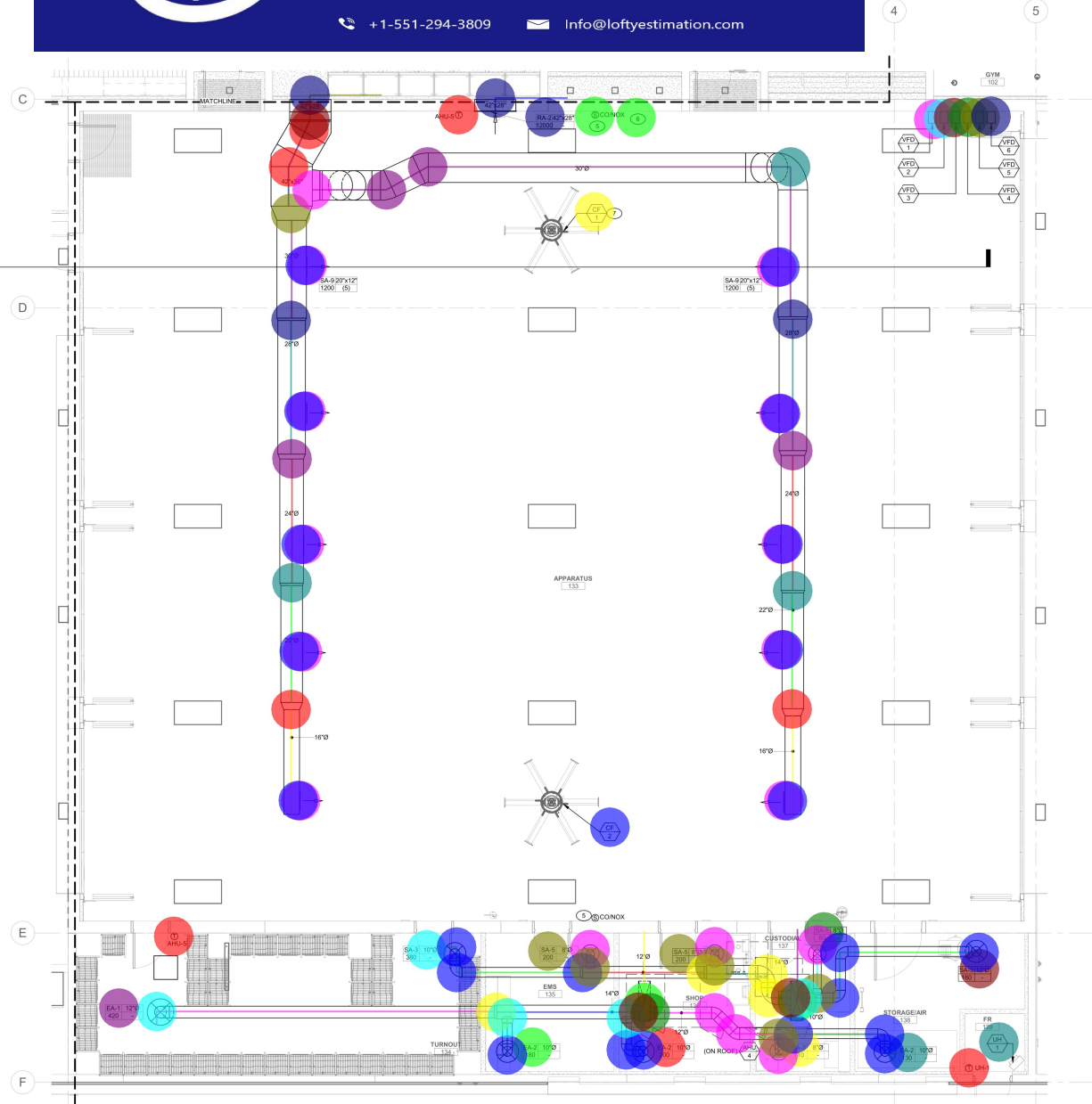


Lofty Estimation

Accurate Estimates, Every Time

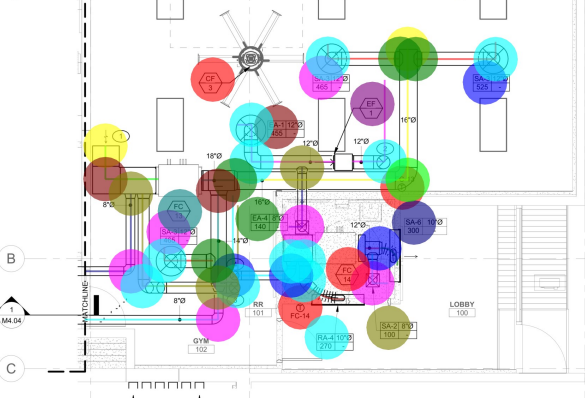
+1-551-294-3809

Info@loftyestimation.com



1 HVAC PLAN - BAY
14'-0" x 11'-0"

DUCT-SA, SUPPLY AIR DUCT-42" X 28"	8.2 FT
DUCT-SA, SUPPLY AIR DUCT-42" X 30"	7.7 FT
DUCT-SA, SUPPLY AIR DUCT-30"	62.0 FT
DUCT-SA, SUPPLY AIR DUCT-28"	23.9 FT
DUCT-SA, SUPPLY AIR DUCT-24"	20.9 FT
DUCT-SA, SUPPLY AIR DUCT-22"	19.8 FT
DUCT-SA, SUPPLY AIR DUCT-18"	46.1 FT
DUCT-EA, EXHAUST AIR DUCT-42" X 28"	7.2 FT
UNIT, VFD-1	1.0 EA
UNIT, VFD-2	1.0 EA
UNIT, VFD-3	1.0 EA
UNIT, VFD-4	1.0 EA
UNIT, VFD-5	1.0 EA
UNIT, VFD-6	1.0 EA
DUCT-SA, SUPPLY AIR DUCT-40" X 12"	6.2 FT
DUCT-SA, SUPPLY AIR DUCT-14"	16.2 FT
DUCT-SA, SUPPLY AIR DUCT-12"	30.0 FT
DUCT-SA, SUPPLY AIR DUCT-10"	33.3 FT
DUCT-EA, EXHAUST AIR DUCT-40" X 12"	6.1 FT
DUCT-EA, EXHAUST AIR DUCT-14"	12.1 FT
DUCT-EA, EXHAUST AIR DUCT-12"	61.3 FT
DUCT-EA, EXHAUST AIR DUCT-10"	93.2 FT
DUCT-EA, EXHAUST AIR DUCT-8"	25.9 FT
UNIT, UH-1	1.0 EA
DEV, THERMOSTAT	1.0 EA
DEV, CT1 GG-CO-02 SENSOR	2.0 EA
FAN, CF-1	1.0 EA
FAN, CF-2	1.0 EA
GRILLE, SA-9, 20" X 12" SUPPLY GRILL, 1200 CFM	1.0 EA
GRILLE, SA-3, 10" SUPPLY GRILL, 380 CFM	1.0 EA
GRILLE, SA-3, 10" SUPPLY GRILL, 160 CFM	1.0 EA
GRILLE, SA-5, 8" SUPPLY GRILL, 80 CFM	1.0 EA
GRILLE, SA-5, 8" SUPPLY GRILL, 200 CFM	1.0 EA
GRILLE, EA-1, 12" EXHAUST GRILL, 12000 CFM	1.0 EA
GRILLE, EA-1, 12" EXHAUST GRILL, 420 CFM	1.0 EA
GRILLE, EA-2, 10" EXHAUST GRILL, 130 CFM	1.0 EA
GRILLE, EA-2, 10" EXHAUST GRILL, 200 CFM	1.0 EA
GRILLE, EA-2, 10" EXHAUST GRILL, 180 CFM	1.0 EA
GRILLE, EA-3, 8" EXHAUST GRILL, 110 CFM	1.0 EA
TRANS, BRANCH TAKE-OFF-20" X 12"	1.0 EA
TRANS, BRANCH TAKE-OFF-30"	5.0 EA
TRANS, BRANCH TAKE-OFF-10"	3.0 EA
TRANS, BRANCH TAKE-OFF-14"	4.0 EA
TRANS, BRANCH TAKE-OFF-12"	6.0 EA
TRANS, BRANCH TAKE-OFF-8"	2.0 EA
JNT, ELBOW 90 DEG-42" X 28"	2.0 EA
JNT, ELBOW 45 DEG-30"	1.0 EA
JNT, ELBOW 45 DEG-42" X 36"	2.0 EA
JNT, END CAP-40" X 12"	2.0 EA
JNT, ELBOW 90 DEG-14"	2.0 EA
JNT, ELBOW 90 DEG-10"	1.0 EA
JNT, ELBOW 90 DEG-8"	0.8 EA
JNT, ELBOW 90 DEG-12"	0.8 EA
REDU, REDUCER 42"X36" / 42"X36"	2.0 EA
REDU, REDUCER 30" / 28"	2.0 EA
REDU, REDUCER 28" / 24"	2.0 EA
REDU, REDUCER 24" / 22"	2.0 EA
REDU, REDUCER 16" / 22"	2.0 EA
REDU, REDUCER 14" / 12"	2.0 EA
REDU, REDUCER 12" / 10"	2.0 EA
JNT, ELBOW 45 DEG-12"	2.0 EA
DUCT-OA, OUTSIDE AIR DUCT-10"	1.8 FT
DUCT-SA, FLEXIBLE SUPPLY AIR DUCT-10"	2.2 FT
DUCT-OA, OUTSIDE AIR DUCT-12"	20.3 FT
DUCT-OA, OUTSIDE AIR DUCT-8"	9.3 FT
DUCT-SA, SUPPLY AIR DUCT-18"	1.0 EA
FAN, CF-3	1.0 EA
DUCT-OA, OUTSIDE AIR DUCT-24" X 18"	6.5 FT
GRILLE, LOUVER W/ BIRD SCREEN-24" X 18"	1.0 EA
GRILLE, SA-3, 12" SUPPLY GRILL, 525 CFM	1.0 EA
GRILLE, SA-3, 12" SUPPLY GRILL, 485 CFM	2.0 EA
GRILLE, RA-4, 10" OUTSIDE GRILL, 270 CFM	1.0 EA
GRILLE, EA-1, 12" EXHAUST GRILL, 455 CFM	1.0 EA
GRILLE, EA-4, 8" EXHAUST GRILL, 140 CFM	1.0 EA
GRILLE, SA-2, 8" SUPPLY GRILL, 100 CFM	1.0 EA
GRILLE, SA-8, 10" SUPPLY GRILL, 300 CFM	1.0 EA
FAN, EF-1	1.0 EA
UNIT, FC-13	1.0 EA
UNIT, FC-14	1.0 EA
JNT, ELBOW 90 DEG-16"	1.0 EA
JNT, END CAP-16"	1.0 EA
JNT, ELBOW 45 DEG-10"	1.0 EA
JNT, ELBOW 90 DEG-24" X 18"	1.0 EA
REDU, REDUCER 16" / 16"	1.0 EA
REDU, REDUCER 14" / 8"	1.0 EA



2 HVAC PLAN - GYM
14'-0" x 11'-0"

GENERAL SHEET NOTES

- Mechanical contractor shall field verify all existing conditions prior to start.
- Position all units & fans to provide adequate clearance for maintenance and fire code.
- Coordinate all mechanical work for potential conflicts with other trades.
- Main duct penetrations shall be full size rigid sheet metal down below roof with adequate length to attach duct runs and smoke detector.
- All exhaust and exposed ductwork shall be rigid sheet metal. All other supply and return ductwork may have flexible ductwork of max 5' on each run.

KEYNOTES

- Terminate with bird screen.
- Exhaust air duct up through roof.
- Route 12" outside air duct from above to return duct back to fan coil unit. Install balancing damper and balance outside airflow to the value shown in the outside air schedule on sheet M0.10. Provide approved cap above roof. Maintain minimum 10" clearance from any exhaust or vent terminal.
- Route 10" outside air duct from above to return duct back to fan coil unit. Install balancing damper and balance outside airflow to the value shown in the outside air schedule on sheet M0.10. Provide approved cap above roof. Maintain minimum 10" clearance from any exhaust or vent terminal.
- Provide CT1 GG-CO-02 sensor or equivalent with minimum 50' range. Install CONOX sensor at 4' above finished floor.
- Provide CT1 GG-CO-02 sensor or equivalent with minimum 50' range. Install CONOX sensor at 4' above finished floor.
- Coordinate placement of ceiling fan with ductwork to achieve required clearance.

DRAWING ISSUE LOG

NO.	DATE	DESCRIPTION	BY	CHKD BY

CARPENTER SELLERS DEL CRITO INCORPORATED
 2626 E CAREY AVE
 NORTH LAS VEGAS, NV 89030
 (702) 26-9898 • FAX (702) 251-8878 • WWW.CSDELCRITO.COM

HVAC PLAN - BAY & GYM
 NLV FIRE STATION #51
 2626 E CAREY AVE
 NORTH LAS VEGAS, NV 89030

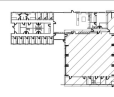
REVISIONS

NO.	DATE	DESCRIPTION



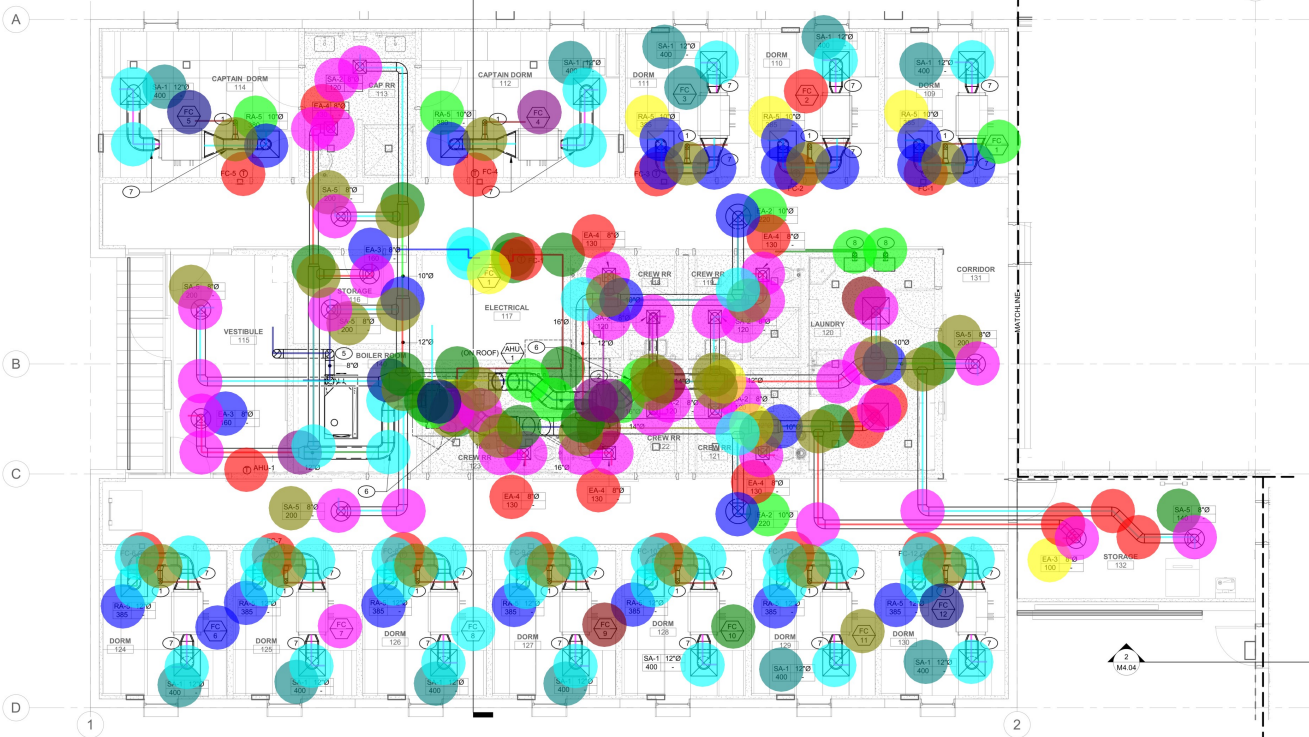
MICHAEL T. PETERSON
 PE
 No. 66122024
 06/12/2024

KEY

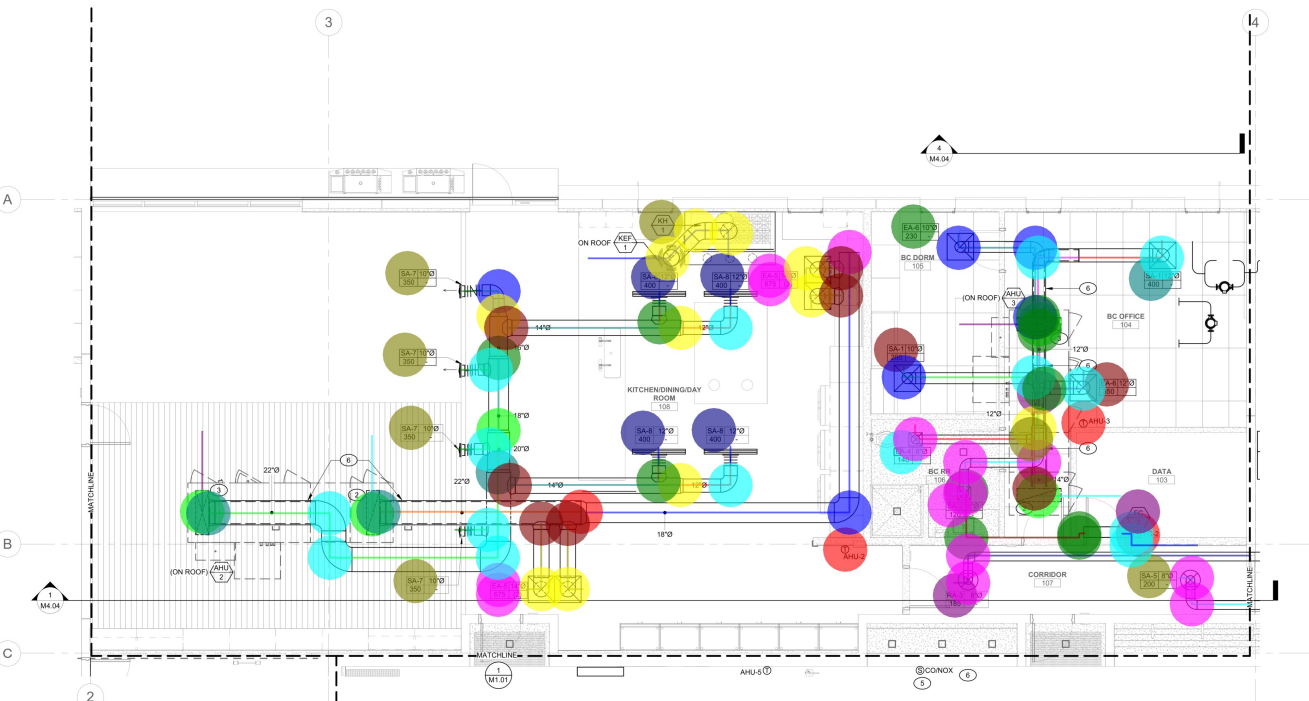


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 TJX #23074

DATE: 06/14/2024
 JOB NO: TJX #23074
 PLOT NAME:
 DO NOT SCALE DRAWINGS
 SHEET NO:
 M1.01



1 HVAC PLAN - DORMS
1/4" = 1'-0"



2 HVAC PLAN - KITCHEN
1/4" = 1'-0"

- GENERAL SHEET NOTES**
- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START.
 - POSITION ALL UNITS & FANS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE AND PER CODE.
 - COORDINATE ALL MECHANICAL WORK FOR POTENTIAL CONFLICTS WITH OTHER TRADES.
 - MAIN DUCT PENETRATIONS SHALL BE FULL SIZE RISID SHEET METAL DOWN BELOW ROOF WITH ADEQUATE LENGTH TO FACE DUCT. RUNS AND SMOKE DETECTOR.
 - ALL EXHAUST AND EXPOSED DUCTWORK SHALL BE RIGID SHEET METAL. ALL OTHER SUPPLY AND RETURN DUCTWORK MAY HAVE FLEXIBLE DUCTWORK OF MAX 9' ON EACH RUN.
 - MAKE SURE DUCT/TYPE ROUTING STAYS OUT OF PATH FOR VERTICAL ACCESS PANELS.

- DUCT-SA, SUPPLY AIR DUCT-40" X 12" 18.2 FT
- DUCT-SA, SUPPLY AIR DUCT W/ 1" FIBERGLASS DUCT LINING-16" 13.1 FT
- DUCT-SA, SUPPLY AIR DUCT-16" 10.7 FT
- DUCT-SA, SUPPLY AIR DUCT-14" 30.6 FT
- DUCT-SA, SUPPLY AIR DUCT-12" 50.7 FT
- DUCT-SA, SUPPLY AIR DUCT-8" 112.9 FT
- DUCT-SA, SUPPLY AIR DUCT-10" 27.9 FT
- DUCT-SA, SUPPLY AIR DUCT W/ 1" FIBERGLASS DUCT LINING-8" 10.0 FT
- DUCT-SA, SUPPLY AIR DUCT W/ 1" FIBERGLASS DUCT LINING-22" 8.2 FT
- DUCT-SA, SUPPLY AIR DUCT-18" 5.5 FT
- DUCT-SA, SUPPLY AIR DUCT-22" 2.5 FT
- DUCT-SA, SUPPLY AIR DUCT-20" 2.3 FT
- DUCT-SA, FLEXIBLE SUPPLY AIR DUCT-12" 5.3 FT
- DUCT-SA, FLEXIBLE SUPPLY AIR DUCT-10" 5.7 FT
- DUCT-SA, SUPPLY AIR DUCT W/ 1" FIBERGLASS DUCT LINING-12" 60.6 FT
- DUCT-RA, RETURN AIR DUCT-40" X 12" 64.4 FT
- DUCT-RA, RETURN AIR DUCT W/ 1" FIBERGLASS DUCT LINING-18" 6.6 FT
- DUCT-RA, RETURN AIR DUCT W/ 1" FIBERGLASS DUCT LINING-- 86.7 FT
- DUCT-RA, RETURN AIR DUCT-14" 30.6 FT
- DUCT-RA, RETURN AIR DUCT-16" 5.9 FT
- DUCT-RA, RETURN AIR DUCT-12" 43.3 FT
- DUCT-RA, RETURN AIR DUCT-10" 52.9 FT
- DUCT-RA, RETURN AIR DUCT-8" 90.2 FT
- DUCT-RA, RETURN AIR DUCT W/ 1" FIBERGLASS DUCT LINING-- 15.3 FT
- DUCT-RA, RETURN AIR DUCT-18" 39.6 FT
- DUCT-RA, RETURN AIR DUCT W/ 1" FIBERGLASS DUCT LINING-14" 4.6 FT
- DUCT-OA, OUTSIDE AIR DUCT-8" 2.0 FT
- DUCT-EA, EXHAUST AIR DUCT-14" 13.5 FT
- DUCT-RA, RETURN AIR DUCT W/ 1" FIBERGLASS DUCT LINING-- 39.8 FT
- DUCT-OA, OUTSIDE AIR DUCT-4" 90.0 FT
- DUCT-EA, EXHAUST AIR DUCT-4" 13.7 FT
- DUCT-EA, EXHAUST AIR DUCT-8" 15.6 FT
- DEV, THERMOSTAT 17.0 EA
- FAN, KH-1 1.0 EA
- UNIT, FC-5 1.0 EA
- UNIT, FC-4 1.0 EA
- UNIT, FC-3 1.0 EA
- UNIT, FC-2 1.0 EA
- UNIT, FC-1 1.0 EA
- UNIT, FC-1 (SPLIT W/ CU-1) 1.0 EA
- UNIT, FC-6 1.0 EA
- UNIT, FC-7 1.0 EA
- UNIT, FC-8 1.0 EA
- UNIT, FC-9 1.0 EA
- UNIT, FC-10 1.0 EA
- UNIT, FC-11 1.0 EA
- UNIT, FC-12 1.0 EA
- UNIT, FC-2 (SPLIT W/ CU-2) 1.0 EA
- GRILLE, SA-1, 12" SUPPLY GRILLE, 400 CFM 12.0 EA
- GRILLE, RA-5, 10" RETURN GRILLE, 380 CFM 2.0 EA
- GRILLE, RA-5, 10" RETURN GRILLE, 385 CFM 3.0 EA
- GRILLE, RA-5, 12" RETURN GRILLE, 385 CFM 7.0 EA
- GRILLE, SA-2, 8" SUPPLY GRILLE, 120 CFM 8.0 EA
- GRILLE, SA-5, 8" SUPPLY GRILLE, 200 CFM 7.0 EA
- GRILLE, SA-1, 10" SUPPLY GRILLE, 280 CFM 2.0 EA
- GRILLE, SA-5, 8" SUPPLY GRILLE, 140 CFM 1.0 EA
- GRILLE, SA-7, 10" SUPPLY GRILLE, 350 CFM 4.0 EA
- GRILLE, SA-8, 12" SUPPLY GRILLE, 400 CFM 4.0 EA
- GRILLE, RA-3, 8" RETURN GRILLE, 185 CFM 1.0 EA
- GRILLE, EA-4, 8" RETURN GRILLE, 130 CFM 7.0 EA
- GRILLE, EA-2, 10" RETURN GRILLE, 220 CFM 2.0 EA
- GRILLE, EA-3, 8" RETURN GRILLE, 100 CFM 1.0 EA
- GRILLE, EA-3, 8" RETURN GRILLE, 160 CFM 2.0 EA
- GRILLE, RA-5, 14" RETURN GRILLE, 675 CFM 4.0 EA
- GRILLE, EA-4, 8" RETURN GRILLE, 140 CFM 1.0 EA
- GRILLE, EA-6, 12" RETURN GRILLE, 350 CFM 1.0 EA
- GRILLE, EA-8, 10" RETURN GRILLE, 230 CFM 12.0 EA
- TRANS, BRANCH TAKE-OFF-4" 8.0 EA
- TRANS, BRANCH TAKE-OFF-12" 1.0 EA
- TRANS, BRANCH TAKE-OFF-8" 18.0 EA
- TRANS, BRANCH TAKE-OFF-16" 2.0 EA
- TRANS, BRANCH TAKE-OFF-10" 7.0 EA
- TRANS, BRANCH TAKE-OFF-14" 7.0 EA
- TRANS, BRANCH TAKE-OFF-22" 2.0 EA
- JNT, ELBOW 90 DEG-12" 43.0 EA
- JNT, ELBOW 45 DEG-12" 2.0 EA
- JNT, ELBOW 90 DEG-10" 17.0 EA
- JNT, ELBOW 45 DEG-10" 0.0 EA
- JNT, END CAP-40" X 12" 8.0 EA
- JNT, ELBOW 90 DEG-8" 41.0 EA
- JNT, ELBOW 45 DEG-8" 4.0 EA
- JNT, ELBOW 45 DEG-4" 2.0 EA
- JNT, ELBOW 90 DEG-16" 4.0 EA
- JNT, ELBOW 90 DEG-14" 8.0 EA
- JNT, ELBOW 90 DEG-18" 1.0 EA
- JNT, END CAP-18" 1.0 EA
- JNT, ELBOW 90 DEG-22" 3.0 EA
- REDU, REDUCER 16" / 14" 2.0 EA
- REDU, REDUCER 12" / 10" 5.0 EA
- REDU, REDUCER 10" / 8" 4.0 EA
- REDU, REDUCER 22" / 20" 1.0 EA
- REDU, REDUCER 22" / 18" 2.0 EA
- REDU, REDUCER 20" / 18" 1.0 EA
- REDU, REDUCER 16" / 10" 1.0 EA
- REF, REFRIGERANT LINE 24.0 FT
- REF, JNT, ELBOW 90 DEG, 4.0 EA
- CD, CONDENSATE DRAIN-3/4" 44.5 FT
- CD JNT, ELBOW 90 DEG-3/4" 10.0 EA

DRAWING ISSUE LOG

NO.	DATE	DESCRIPTION

CARPENTER SELLERS DEL CRITO
MECHANICAL

2626 E CAREY AVE
NORTH LAS VEGAS, NV 89030

PH: 702.258.9888 FAX: 702.258.9877 WWW.CSMECHANICAL.COM

HVAC PLAN - DORMS & KITCHEN
NLV FIRE STATION #51
2626 E CAREY AVE
NORTH LAS VEGAS, NV 89030

REVISIONS

NO.	DATE	DESCRIPTION

DATE: 06/14/2024
JOB NO: TJK #23074
PI # NAME:
DO NOT SCALE DRAWINGS

SHEET NO: M1.02

TJK #23074

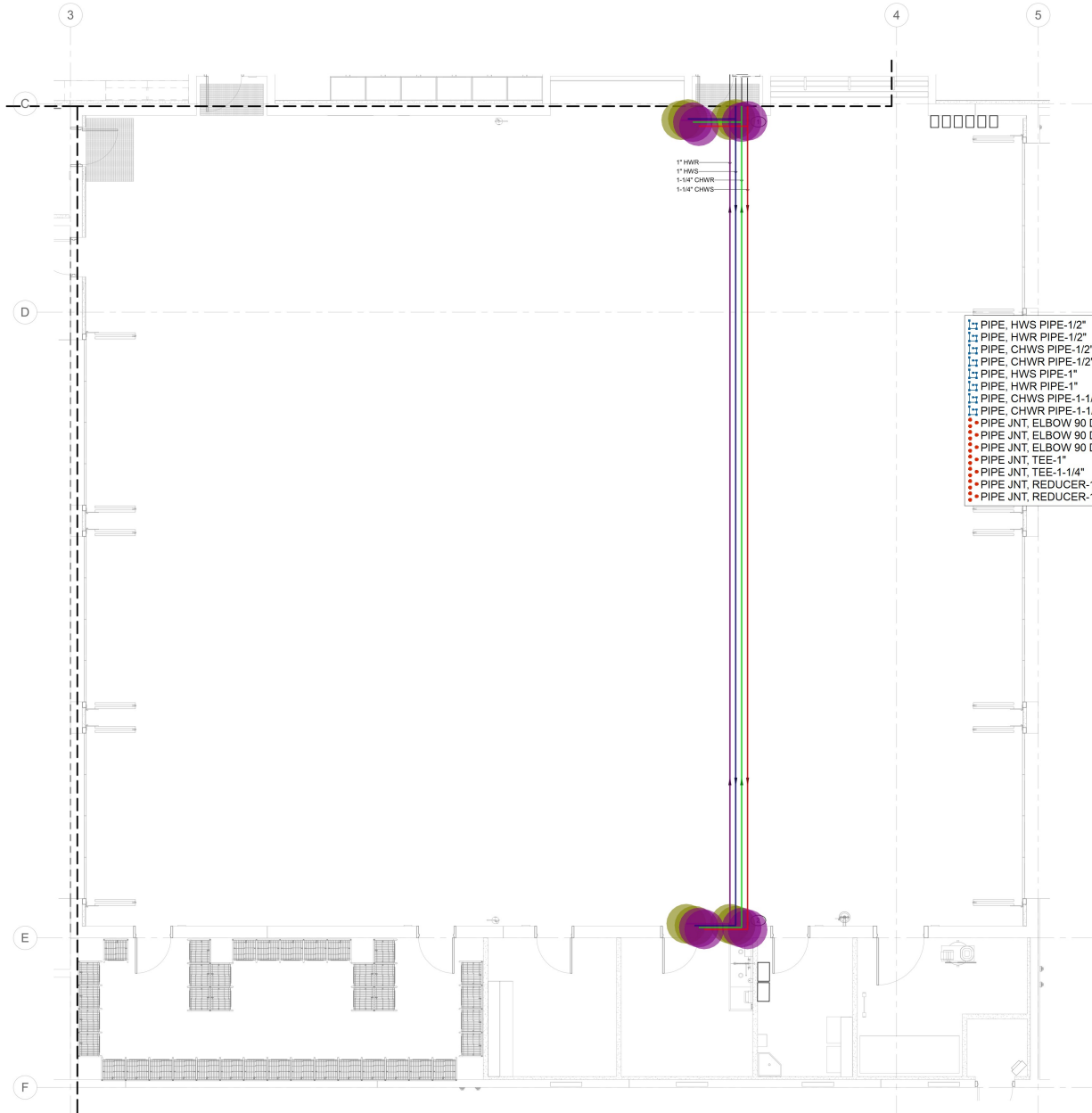


GENERAL SHEET NOTES

- A. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START.
- B. POSITION ALL UNITS & FANS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE AND PER CODE.
- C. COORDINATE ALL MECHANICAL WORK FOR POTENTIAL CONFLICTS WITH OTHER TRADES.
- D. HYDRONIC PIPING RUNS IN OPEN CEILING TO BE FINISHED WITH WHITE GLOSS FINISH INSULATION JACKETS.
- E. ROUTE PIPING TOGETHER, EVENLY SPACED AND AS UNIFORM AS POSSIBLE WHERE VISIBLE IN AREAS WITH NO CEILING.

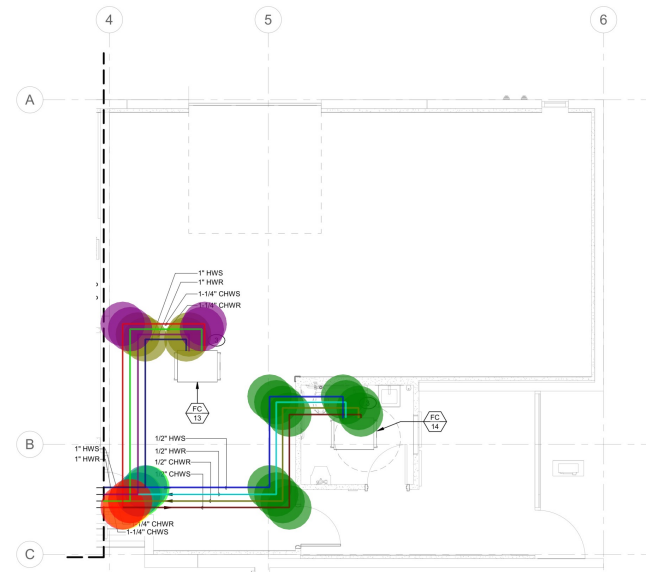
KEYNOTES

- 1 HWSR AND CHWSR INTO APP BAY AND UP TIGHT TO ROOF DECK TO RUN ACROSS THE APP BAY.
- 2 HWSR AND CHWSR THROUGH WALL TO LOWER ROOF.
- 3 HWSR AND CHWSR TO FAN COIL UNIT.



1" HWS
1" HWS
1-1/4" CHWS
1-1/4" CHWS

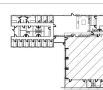
1" PIPE, HWS PIPE-1/2"	23.4 FT
1" PIPE, HWR PIPE-1/2"	23.8 FT
1" PIPE, CHWS PIPE-1/2"	25.3 FT
1" PIPE, CHWR PIPE-1/2"	25.1 FT
1" PIPE, HWS PIPE-1"	102.8 FT
1" PIPE, HWR PIPE-1"	104.8 FT
1" PIPE, CHWS PIPE-1-1/4"	109.8 FT
1" PIPE, CHWR PIPE-1-1/4"	107.2 FT
PIPE JNT, ELBOW 90 DEG-1/2"	12.0 EA
PIPE JNT, ELBOW 90 DEG-1"	12.0 EA
PIPE JNT, ELBOW 90 DEG-1-1/4"	12.0 EA
PIPE JNT, TEE-1"	2.0 EA
PIPE JNT, TEE-1-1/4"	2.0 EA
PIPE JNT, REDUCER-1" X 1/2"	2.0 EA
PIPE JNT, REDUCER-1-1/4" X 1/2"	2.0 EA



2 PIPING PLAN - GYM
1/4" = 1'-0"

1 PIPING PLAN - BAY
1/4" = 1'-0"

KEY



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TJK #23074

DRAWING ISSUE LOG:

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR PERMIT			

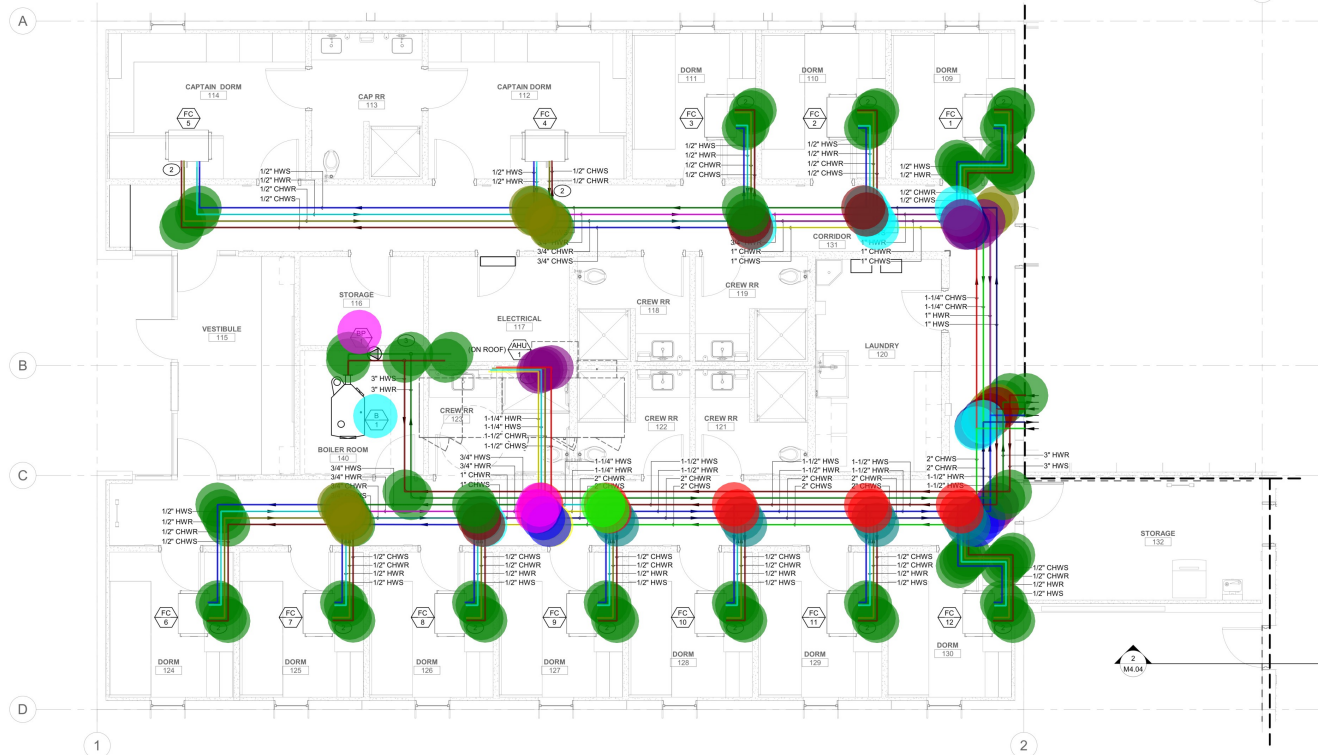
CARPENTER SELLERS DEL CRITO
MECHANICAL
9800 S. SANDY SPRING AVENUE, SUITE 100, LAS VEGAS, NV 89148
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PIPING PLAN - BAY & GYM
NLV FIRE STATION #51
2626 E CAREY AVE
NORTH LAS VEGAS, NV 89030

REVISIONS:

NO.	DATE	DESCRIPTION

DATE: 06/14/2024
JOB NO: TJK #23074
FI F NAME:
DO NOT SCALE DRAWINGS
SHEET NO:
M2.01



GENERAL SHEET NOTES

- A. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START.
- B. POSITION ALL UNITS & FANS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE AND PER CODE.
- C. COORDINATE ALL MECHANICAL WORK FOR POTENTIAL CONFLICTS WITH OTHER TRADES.
- D. HYDRONIC PIPING RUNS IN OPEN CEILING TO BE FINISHED WITH WHITE GLOSS FINISH INSULATION JACKETS.
- E. ROUTE PIPING TOGETHER, EVENLY SPACED AND AS UNIFORM AS POSSIBLE WHERE VISIBLE IN AREAS WITH NO CEILING.

KEYNOTES

- 1 HWSR AND CHWSR TO ABOVE.
- 2 HWSR AND CHWSR TO FAN COL UNIT.
- 3 HWSR UP TO HIGH LEVEL RUN TIGHT TO ROOF DECK.

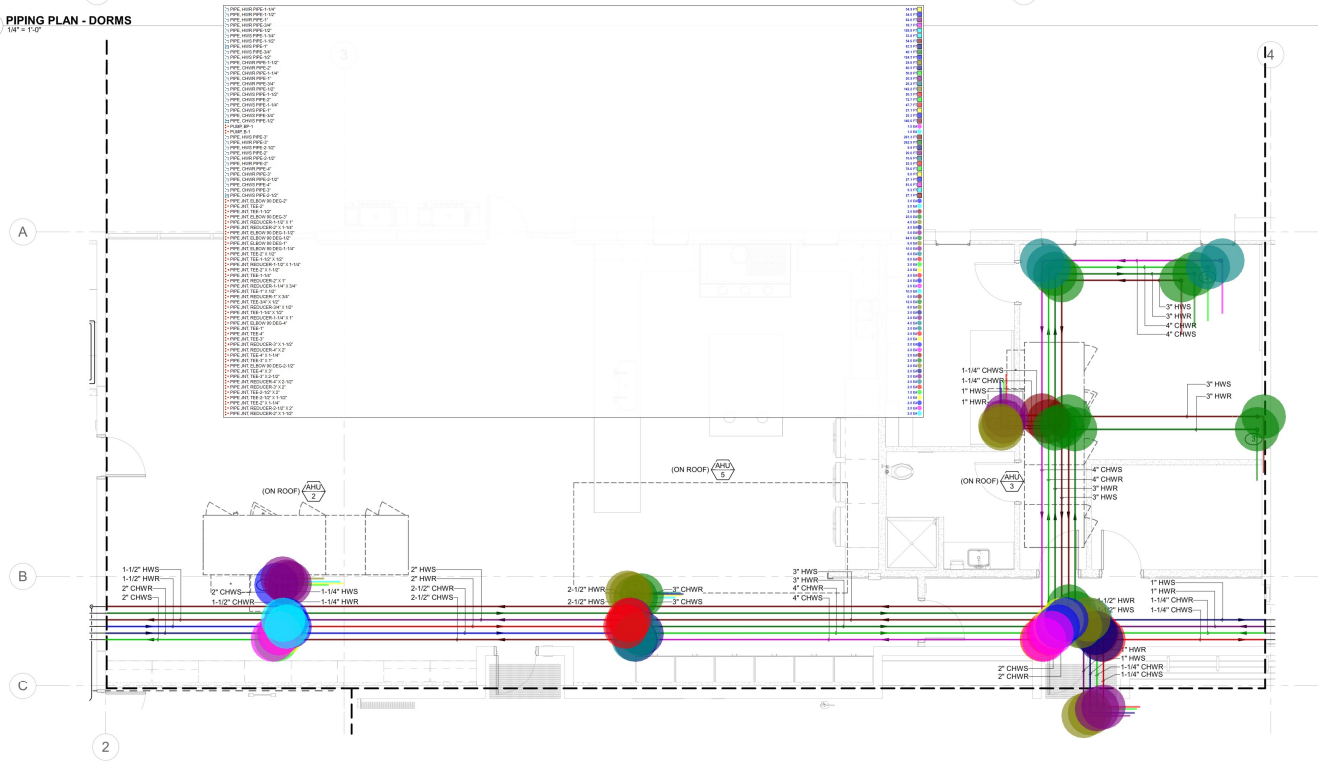
DRAWING ISSUE LOG:

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1	ISSUED FOR PERMIT			

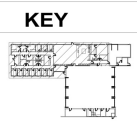
CARPENTER SELLERS DEL CRITO
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1 PIPING PLAN - DORMS
1/4" = 1'-0"



2 PIPING PLAN - KITCHEN
1/4" = 1'-0"



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PIPING PLAN - DORMS & KITCHEN
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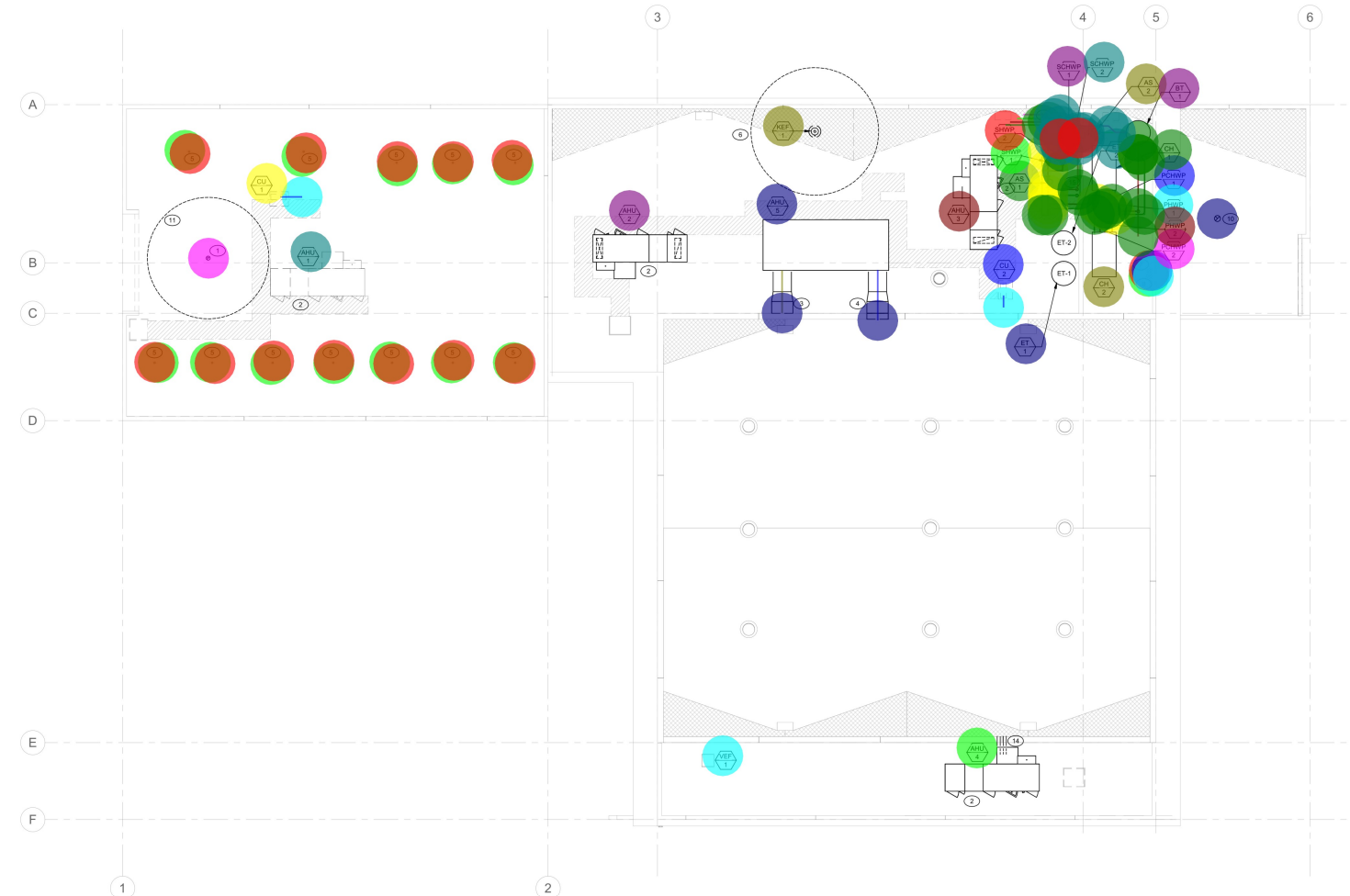
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NO.	DATE	DESCRIPTION
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DATE: 06/14/2024
JOB NO.: TJK #23074
PI NAME:
DO NOT SCALE DRAWINGS

SHEET NO.:
M2.02

• FAN, KEF-1	1.0 x 4.0
• UNIT AHU-5	1.0 x 4.0
• UNIT AHU-2	1.0 x 6.0
• UNIT AHU-3	1.0 x 6.0
• INT. ELBOW 90 DEG-4"	1.0 x 6.0
• GRILLE, LOUVER W/ BIRG SCREEN-4"	1.0 x 6.0
• UNIT CU-1	1.0 x 6.0
• UNIT CU-2	1.0 x 6.0
• REF. REFRIGERANT LINE	1.0 x 6.0
• REF. INT. ELBOW 90 DEG.	1.0 x 6.0
• GRILLE, LOUVER W/ BIRG SCREEN-8"	1.0 x 6.0
• DUCT EA, EXHAUST AIR DUCT-42" X 28"	1.0 x 6.0
• DUCT SA, SUPPLY AIR DUCT-42" X 28"	1.0 x 6.0
• INT. ELBOW 90 DEG-42" X 28"	1.0 x 6.0
• UNIT KEF-1	1.0 x 6.0
• UNIT AHU-3	1.0 x 6.0
• UNIT CH-1	1.0 x 6.0
• UNIT CH-2	1.0 x 6.0
• GRILLE, LOUVER W/ BIRG SCREEN-12"	1.0 x 6.0
• PUMP SCHWP-1	1.0 x 6.0
• PUMP SCHWP-2	1.0 x 6.0
• PUMP SHWP-1	1.0 x 6.0
• PUMP SHWP-2	1.0 x 6.0
• PUMP PCHWP-1	1.0 x 6.0
• PUMP PCHWP-2	1.0 x 6.0
• PUMP PHWP-1	1.0 x 6.0
• PUMP PHWP-2	1.0 x 6.0
• PUMP AS-1	1.0 x 6.0
• PUMP AS-2	1.0 x 6.0
• PUMP ET-1	1.0 x 6.0
• PUMP ET-2	1.0 x 6.0
• PUMP BT-1	1.0 x 6.0
• PUMP BT-2	1.0 x 6.0
• GRILLE, LOUVER W/ BIRG SCREEN-10"	1.0 x 6.0
• INT. ELBOW 90 DEG-10"	1.0 x 6.0
• INT. ELBOW 90 DEG-12"	1.0 x 6.0
• UNIT AHU-4	1.0 x 6.0
• PIPE HW PIPE-3"	1.0 x 6.0
• PIPE HW PIPE-3"	1.0 x 6.0
• PIPE CHWS PIPE-4"	1.0 x 6.0
• PIPE CHWS PIPE-4"	1.0 x 6.0
• PIPE INT. TEE-3"	1.0 x 6.0
• PIPE INT. ELBOW 90 DEG-3"	1.0 x 6.0
• PIPE INT. ELBOW 90 DEG-4"	1.0 x 6.0
• PIPE INT. TEE-4"	1.0 x 6.0



1 ROOF PLAN
1/8" = 1'-0"

GENERAL SHEET NOTES

- MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START.
- POSITION ALL UNITS & FANS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE AND PER CODE.
- COORDINATE ALL MECHANICAL WORK FOR POTENTIAL CONFLICTS WITH OTHER TRADES.
- MAIN DUCT PENETRATIONS SHALL BE FULL SIZE RIGID SHEET METAL DOWN BELOW ROOF WITH ADEQUATE LENGTH TO ATTACH DUCT RUNS AND SMOKE DETECTOR.
- ALL EXHAUST AND EXPOSED DUCTWORK SHALL BE RIGID SHEET METAL. ALL OTHER SUPPLY AND RETURN DUCTWORK MAY HAVE FLEXIBLE DUCTWORK OF MAX 6' ON EACH RUN.

KEYNOTES

- FLUE DUCT FROM BELOW UP THROUGH ROOF.
- EXHAUST AND SUPPLY DUCTS DOWN FROM MECHANICAL UNIT ON ROOF.
- SUPPLY DUCT FROM MECHANICAL UNIT THROUGH SIDE WALL.
- EXHAUST DUCT FROM MECHANICAL UNIT THROUGH SIDE WALL.
- 4"Ø OUTSIDE AIR DUCT TO BELOW. MAINTAIN MINIMUM 10'-0" CLEARANCE FROM ANY EXHAUST OR VENT TERMINAL.
- 10'-0" CLEARANCE ZONE FROM EXHAUST FAN.
- 10'-0" OUTSIDE AIR DUCT TO BELOW. MAINTAIN MINIMUM 10'-0" CLEARANCE FROM ANY EXHAUST OR VENT TERMINAL.
- 12"Ø OUTSIDE AIR DUCT TO BELOW. MAINTAIN MINIMUM 10'-0" CLEARANCE FROM ANY EXHAUST OR VENT TERMINAL.
- 12"Ø EXHAUST AIR DUCT FROM BELOW. MAINTAIN MINIMUM 10'-0" CLEARANCE FROM ANY AIR INLETS AND MINIMUM 3'-0" FROM ANY OPENINGS.
- 10'-0" CLEARANCE ZONE FROM BOILER FLUE.
- CHW & HW SR TO BELOW.
- HW SR AND CHWS/R PIPING THROUGH WALL TO AHU ON LOWER ROOF.
- HW SUPPLY AND RETURN TO BELOW.

KEY



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TJK #23074



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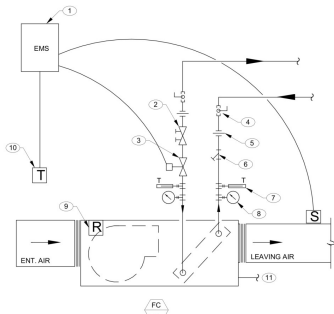
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ROOF PLAN
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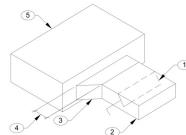
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10 FAN COIL - 2 WAY VALVE
SCALE: NOT TO SCALE

- UNION-1/2"
- STRAINER-1/2"
- ISOLATION VALVE-1/2"
- AUTO FLOW CONTROL-1/2"
- THREE WAY MODULATING CONTROL VALVE-1/2"
- TEMPERATURE GAUGE W/ SHUTT-OFF COCK-1/2"
- PRESSURE GAUGE W/ SHUTT-OFF COCK-1/2"
- AUTO MATIC FAN RELAY



11 BRANCH DUCT TAKE-OFF
SCALE: NOT TO SCALE

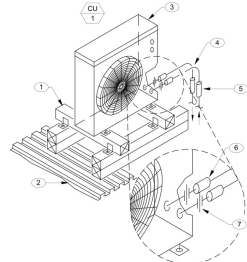
DIAGRAM KEY NOTES

1. MAY EXTEND AS WASTE OR VENT
2. AUTO FLOW CONTROL
3. TWO WAY MODULATING CONTROL VALVE
4. ISOLATION VALVE (TYP.)
5. UNION (TYP.)
6. STRAINER
7. TEMPERATURE GAUGE WITH SHUT-OFF COCK (TYP.)
8. PRESSURE GAUGE WITH SHUT-OFF COCK (TYP.)
9. AUTOMATIC FAN RELAY (BY UNIT SUPPLIER)
10. SPACE SENSOR (BY CONTROL CONTRACTOR)
11. SEE PLUMBING DRAWINGS FOR CONDENSATE DRAIN

GENERAL DIAGRAM NOTES

1. MINIMUM 2" REQUIRED CLEARANCE
2. MINIMUM 2" REQUIRED CLEARANCE
3. MINIMUM 2" REQUIRED CLEARANCE
4. MINIMUM 2" REQUIRED CLEARANCE
5. MINIMUM 2" REQUIRED CLEARANCE
6. MINIMUM 2" REQUIRED CLEARANCE
7. MINIMUM 2" REQUIRED CLEARANCE
8. MINIMUM 2" REQUIRED CLEARANCE
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13. MINIMUM 2" REQUIRED CLEARANCE
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19. MINIMUM 2" REQUIRED CLEARANCE
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21. MINIMUM 2" REQUIRED CLEARANCE
22. MINIMUM 2" REQUIRED CLEARANCE
23. MINIMUM 2" REQUIRED CLEARANCE

- 2.0 EA
- 1.0 EA
- 2.0 EA
- 1.0 EA
- 1.0 EA
- 2.0 EA
- 2.0 EA
- 1.0 EA



8 TYPICAL SPLIT-TYPE AIR CONDITIONING SYSTEM EQUIPMENT SCHEMATIC WITH TYPICAL ROOF SUPPORT
SCALE: NOT TO SCALE

GENERAL DIAGRAM NOTES

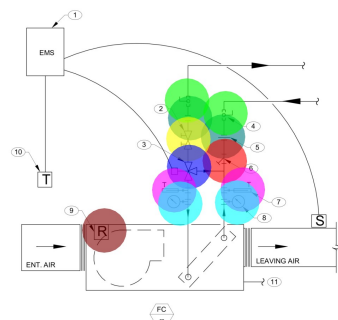
- A. THESE DETAILS ARE SCHEMATIC ONLY. EXACT CONFIGURATION AND ROUTING OF ALL REFRIGERANT AND CONDENSATE PIPING TO BE DETERMINED ON-SITE AND COORDINATE WITH WORK OF OTHER TRADES. INSTALL TO MANUFACTURER'S GUIDELINES.
- B. INSTALL ALL COMPONENTS TO MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. COORDINATE WITH WORK OF OTHER TRADES.
- C. INDIRECTLY CONNECT CONDENSATE DRAIN FROM CONDENSATE PUMP TO NEW FURNEL TRAP ABOVE FIN. CEILING. REFER TO PLAN LAYOUT FOR ADDITIONAL INFORMATION. COORDINATE ON-SITE. CONDENSATE PUMP TO BE ENCLOSED WITHIN WALL CAVITY OR IN DEDICATED WALL MTD ENCLOSURE AS REQUIRED TO BE ϕ ACCESS DOOR. COORDINATE WITH ARCHITECT DIVISION. WIRE CONDENSATE PUMP TO EVAPORATOR COOL UNIT PER MANUFACTURER'S INSTRUCTIONS.
- D. CAREFULLY COORDINATE THE INSTALLATION OF CONDENSER UNIT ON ROOF WITH ARCHITECTURAL AND STRUCTURAL DIVISIONS. INTEGRITY OF ROOFING MEMBRANE TO BE MAINTAINED WATER TIGHT.

DIAGRAM KEY NOTES

1. TYP. MINIMUM 6" MIN. PRESSURE TREATED SLEEPERS; FASTEN TO CONDENSER BASE. COORDINATE INSTALLATION WITH ROOFING CONTRACTOR AND WITH ARCHITECTURAL DIVISION.
2. TYP. ROOF DECKING; MAY NOT BE EXACTLY AS SHOWN. C.O.S.
3. TYP. CONDENSER UNIT INSTALLED ON ROOF. MAINTAIN ALL REQUIRED CLEARANCES AS REQUIRED BY MANUFACTURER.
4. REFRIGERANT LINES TO BE INSULATED WITH 3/4" ARMAFLEX AND PROTECTIVE ALUMINUM JACKETING.
5. SEAL WATER TIGHT AT PENETRATIONS THRU ROOF - TYPICAL.
6. TYP. FLEX CONNECTION
7. TYP. UNION AS REQUIRED
8. TYP. RUBBER INSULATOR
9. SECURELY FASTEN SLEEPERS TO CONDENSER UNIT BASE. COORDINATE ON-SITE AND WITH MANUFACTURER.
10. TYP. 6"x6" (140140mm) PRESSURE TREATED LOWER SUPPORT SLEEPERS - MINIMUM 4 REQUIRED. LENGTH TO SUIT
11. SECURELY FASTEN SLEEPERS TO ROOF STRUCTURE AND ANGLE IRON WITH GALV. STEEL COUPLERS/BRK GARIBASE BOXS; COORDINATOR ON-SITE
12. CONDENSER UNIT
13. TYP. 6"x6" (140140mm) PRESSURE TREATED UPPER SLEEPER - MINIMUM 2 REQUIRED. LENGTH TO SUIT
14. SEE BLOW-UP DETAIL AT RIGHT
15. ROOFING MEMBRANE TO ENCASE LOWER SUPPORT SLEEPERS; COORDINATE WITH ARCHITECTURAL DIVISION
16. ROOFING INSULATION; C.O.S.
17. ROOF DECKING; C.O.S.
18. MINIMUM 2"x2"x1/8" ANGLE IRON; LENGTH TO SUIT
19. REFRIGERANT LINES TO BE INSULATED WITH 3/4" ARMAFLEX
20. TYP. WALL MTD FAN COIL INSTALLATION HOT TO MANUFACTURER GUIDELINES. COORDINATE ON-SITE. UNIT MAY NOT BE EXACTLY AS ILLUSTRATED; REFER TO MANUFACTURER'S LITERATURE.
21. PIPING TO ROUTE INTO WALL CAVITY; INSTALL EXCUT-BORES ON FIN. SIDE OF WALL; COORDINATE ON-SITE TYPICAL.
22. CONDENSATE DRAIN & CONDENSATE PUMP; SEE PLUMBING DRAWINGS FOR CONTINUATION & NOTE #3.
23. SEAL ALL PENETRATION WATER TIGHT WITH APPROPRIATE SILICON SEALANT; COORDINATE ON-SITE

DIAGRAM KEY NOTES

1. MAY EXTEND AS WASTE OR VENT
2. AUTO FLOW CONTROL
3. THREE WAY MODULATING CONTROL VALVE LOCATED AT F.C. & F.C.4
4. ISOLATION VALVE (TYP.)
5. UNION (TYP.)
6. STRAINER
7. TEMPERATURE GAUGE WITH SHUT-OFF COCK (TYP.)
8. PRESSURE GAUGE WITH SHUT-OFF COCK (TYP.)
9. AUTOMATIC FAN RELAY (BY UNIT SUPPLIER)
10. SPACE SENSOR (BY CONTROL CONTRACTOR)
11. SEE PLUMBING DRAWINGS FOR CONDENSATE DRAIN



9 FAN COIL - 3 - WAY VALVE
SCALE: NOT TO SCALE



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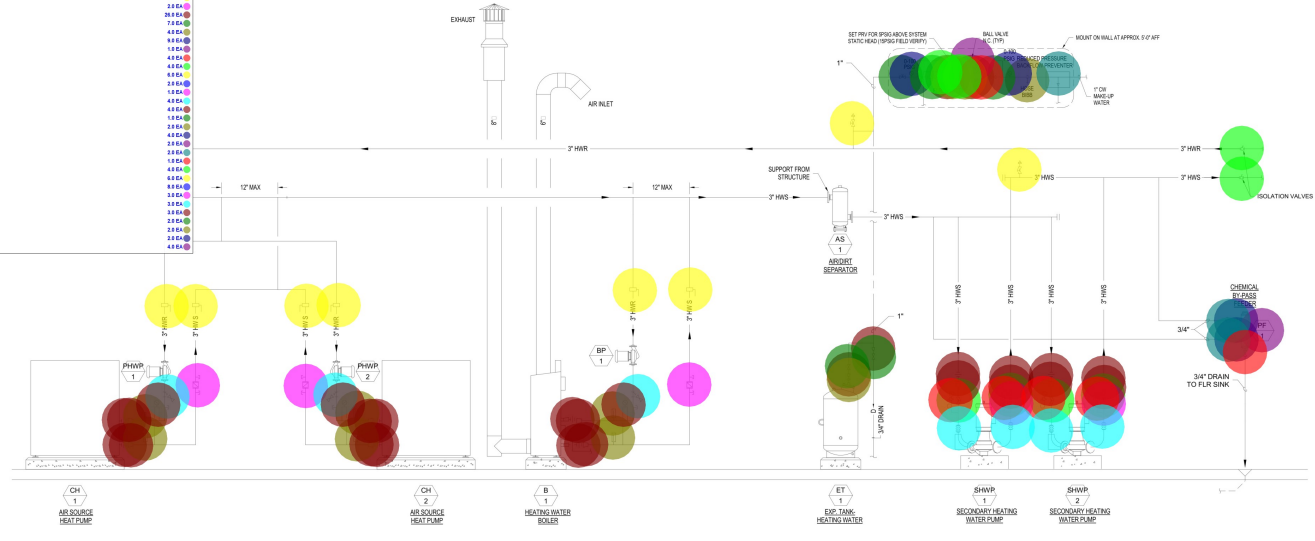
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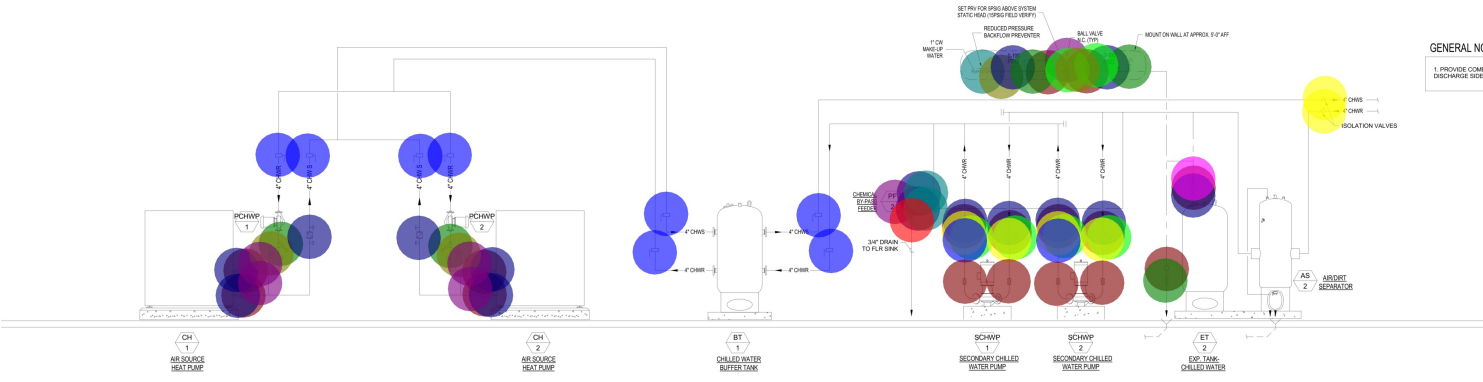
- PIPE V. UNION-3"
- PIPE V. THERMOMETER-3"
- PIPE V. UNION-3/4"
- PUMP-PF-1
- PIPE V. BALL VALVE-3/4"
- PIPE V. SHUT-OFF VALVE-3/4"
- PIPE V. ISOLATION VALVE-3"
- PIPE V. MANUAL AIR VENT VALVE-3"
- PIPE V. CHECK VALVE-3"
- PIPE V. REDUCER OR EXPANDER
- PIPE V. SHUT-OFF VALVE-1"
- PIPE V. UNION-1"
- PIPE V. UNION-1/2"
- PUMP-PF-2
- PIPE V. PRESSURE SENSOR-3"
- PIPE V. PRESSURE SENSOR-4"
- PIPE V. ISOLATION VALVE-4"
- PIPE V. CHECK VALVE-4"
- PIPE V. SHUT-OFF VALVE-4"
- PIPE V. FLEXIBLE CONNECTION-3"
- PIPE V. FLEXIBLE CONNECTION-4"
- PIPE V. ISOLATION VALVE-1"
- PIPE V. HOSE BIBB-
- PIPE V. PRESSURE GAUGE-1"
- PIPE V. BALL VALVE-1"
- PIPE V. REDUCED PRESSURE BACKFLOW PREVENTER-1"
- PIPE V. STRAINER-1"
- PIPE V. P.N.K. PRESSURE REDUCING VALVE-1"
- PIPE V. BUTTERFLY VALVE-3"
- PIPE V. BUTTERFLY VALVE-4"
- PIPE V. CIRCUIT SETTER-3"
- PIPE V. CIRCUIT SETTER-4"
- PIPE V. PRESSURE GAUGE-3"
- PIPE V. PRESSURE GAUGE-4"
- PIPE V. CIRCUIT SETTER-4"
- PIPE V. THERMOMETER-4"



12 MECHANICAL HEATING WATER SCHEMATIC
SCALE: N.T.S.

- PIPING DIAGRAM LEGEND:**
- UNION
 - REDUCER OR EXPANDER
 - ISOLATION VALVE
 - CHECK VALVE
 - PRESSURE SENSOR
 - FLEXIBLE CONNECTION
 - BUTTERFLY VALVE
 - STRAINER
 - CIRCUIT SETTER
 - PETE'S PORT
 - MANUAL AIR VENT
 - BALL VALVE
 - THERMOMETER
 - FLOW METER

GENERAL NOTE
1. PROVIDE COMBINATION PUMP DISCHARGE VALVE ON DISCHARGE SIDE OF PUMPS.



13 MECHANICAL CHILLED WATER SCHEMATIC
SCALE: N.T.S.

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2	ISSUED FOR PERMITS			
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5	ISSUED FOR PERMITS			
6	ISSUED FOR PERMITS			
7	ISSUED FOR PERMITS			
8	ISSUED FOR PERMITS			
9	ISSUED FOR PERMITS			
10	ISSUED FOR PERMITS			

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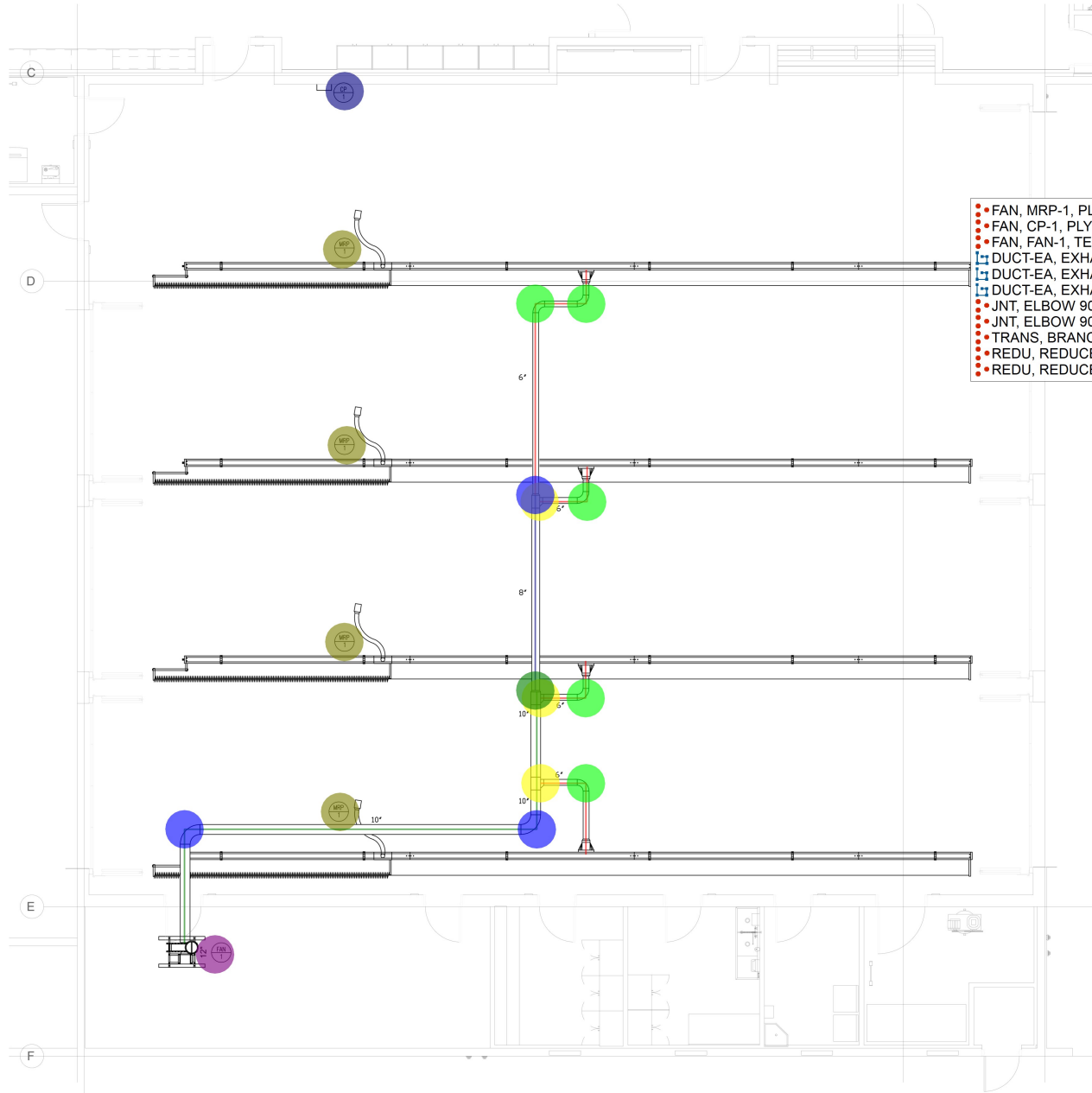
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GENERAL SHEET NOTES

1. INFORMATION PROVIDED ON THIS SHEET IS FOR REFERENCE ONLY AND IS FOR COORDINATION PURPOSES. CONTRACTOR SHALL COORDINATE VEHICLE EXHAUST SYSTEM LAYOUT AND SIZING WITH VEHICLE EXHAUST MANUFACTURER.



- FAN, MRP-1, PLYMOVENT STRA-70 1 DROP MAGNETIC GRABBER SYSTEM
- FAN, CP-1, PLYMOVENT OS-3, AUTO CONTROLLER SYSTEM FOR 5HP, 208- 230V, 3 PH
- FAN, FAR-1, TEV-559 FAN, 5HP, 3450 RPM, 208-230V, 3 PH, ROOF MOUNTED
- DUCT-EA, EXHAUST AIR DUCT-10"
- DUCT-EA, EXHAUST AIR DUCT-8"
- DUCT-EA, EXHAUST AIR DUCT-6"
- JNT, ELBOW 90 DEG-10"
- JNT, ELBOW 90 DEG-6"
- TRANS, BRANCH TAKE-OFF-6"
- REDU, REDUCER 10" / 8"
- REDU, REDUCER 8" / 6"

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NO.	DATE	DESCRIPTION

4.0 EA	●
1.0 EA	●
1.0 EA	●
52.8 FT	■
17.1 FT	■
48.8 FT	■
2.0 EA	●
5.0 EA	●
3.0 EA	●
1.0 EA	●
1.0 EA	●

PLYMOVENT EXHAUST EQUIPMENT SCHEDULE

CALLOUT	QTY.	DESCRIPTION
MRP-1	1	PLYMOVENT STRA-70 1 DROP MAGNETIC GRABBER SYSTEM
CP-1	1	PLYMOVENT OS-3, AUTO CONTROLLER SYSTEM FOR 5HP, 208-230V, 3PH
FAR-1	1	TEV-559 FAN, 5 HP, 3450 RPM, 208-230V, 3 PHASE, ROOF MOUNTED
SILENCER	1	EXHAUST STACK SILENCER

1. DRAWINGS ARE DIAGRAMMATICAL. IT SHALL BE THE VEHICLE EXHAUST SYSTEM SPECIALISTS OPTION TO MODIFY LOCATIONS, ELEVATIONS AND DETAILS AT THE PROPOSED POINTS OF CONNECTION AND IN AREAS OF POSSIBLE CONFLICT.

2. EXHAUST TERMINATIONS 36" ABOVE ROOF PER 2016CMC302.2 OTHER PRODUCT CONVEYING OUTLETS SHALL TERMINATE NOT LESS THAN 10 FEET (3048MM) FROM A PROPERTY LINE, 3 FEET (914MM) FROM EXTERIOR WALLS OR ROOFS, 10 FEET FROM OPENINGS INTO THE BUILDING, AND 10 FEET (3048MM) ABOVE ADJOINING GRADE.

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