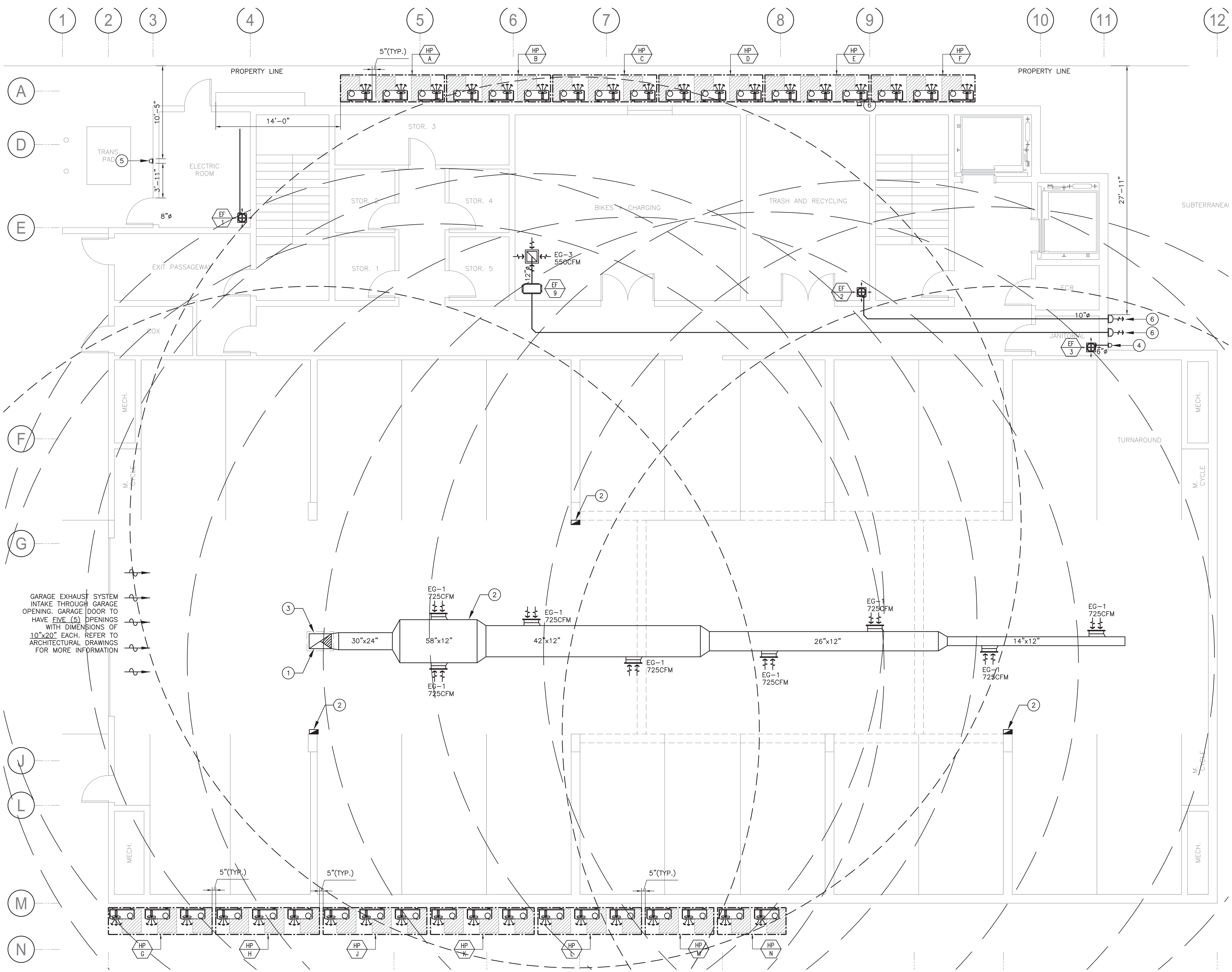

MECHANICAL PARKING LEVEL PLAN

1 / M2.1 SCALE: 3/16"=1'-0"

N

LEGEND:

- CO SENSOR COVERAGE
- EXHAUST GRILLE COVERAGE

KEY NOTES

1. 30"x20" EXHAUST AIR DUCT RISER T/A.
2. CO SYSTEM SENSOR AT 1 FOOT ABOVE FLOOR.
3. OUTLINE OF 32"x22" PROPOSED MECHANICAL SHAFT.
4. 6"ø EXHAUST AIR DUCT WITH WALL CAP TERMINATION, BACK DRAFT DAMPER AND INSECT SCREEN. PROVIDE 10 FEET CLEARANCE FROM WALKWAY.
5. 8"ø EXHAUST AIR DUCT WITH WALL CAP TERMINATION, BACK DRAFT DAMPER AND INSECT SCREEN. PROVIDE 10 FEET CLEARANCE FROM WALKWAY.
6. 10"ø EXHAUST AIR DUCT WITH WALL CAP TERMINATION, BACK DRAFT DAMPER AND INSECT SCREEN. PROVIDE 10 FEET CLEARANCE FROM WALKWAY.
7. EG-1 SHALL BE INSTALLED SO THAT THE HIGHEST ELEVATION OF THE INLET IS NO GREATER THAN 12 INCHES BELOW THE LOWEST CEILING LEVEL.

GARAGE VENTILATION NOTES

A. CO SENSORS SHALL BE:

1. CERTIFIED BY THE MANUFACTURER TO BE ACCURATE WITHIN PLUS OR MINUS 5 PERCENT OF MEASUREMENT.
2. FACTORY CALIBRATED.
3. CERTIFIED BY THE MANUFACTURER TO DRIFT NO MORE THAN 5 PERCENT PER YEAR.
4. CERTIFIED BY THE MANUFACTURER TO REQUIRE CALIBRATION NO MORE FREQUENTLY THAN ONCE A YEAR.
5. THE AUTOMATIC CARBON MONOXIDE SENSING DEVICES SHALL BE USED TO MODULATE THE VENTILATION SYSTEM TO MAINTAIN A MAXIMUM AVERAGE CONCENTRATION OF CO OF 50PPM DURING ANY 8-HOUR PERIOD WITH A MAXIMUM CONCENTRATION NOT GREATER THAN 200PPM FOR A PERIOD NOT EXCEEDING 1 HOUR (CMC 403.1.2(2)).
6. MONITORED BY A CONTROL SYSTEM. THE SYSTEM SHALL HAVE LOGIC THAT AUTOMATICALLY CHECKS FOR SENSOR FAILURE BY THE FOLLOWING MEANS. UPON DETECTION OF A FAILURE, THE SYSTEM SHALL RESET TO DESIGN VENTILATION RATES AND TRANSMIT AN ALARM TO THE FACILITY OPERATORS.
   - 6.a. IF ANY SENSOR HAS NOT BEEN CALIBRATED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS WITHIN THE SPECIFIED CALIBRATION PERIOD, THE SENSOR HAS FAILED.
   - 6.b. DURING UNOCCUPIED PERIODS THE SYSTEM COMPARES THE READINGS OF ALL SENSORS, E.G. IF ANY SENSOR IS MORE THAN 15PPM ABOVE OR BELOW THE AVERAGE OF ALL SENSORS FOR LONGER THAN FOUR HOURS, THE SENSOR HAS FAILED.
   - 6.c. DURING OCCUPIED PERIODS THE SYSTEM COMPARES THE READINGS OF SENSORS IN THE SAME PROXIMITY ZONE. IF THE 30 MINUTE ROLLING AVERAGE FOR ANY SENSOR IN A PROXIMITY ZONE ID MORE THAN 15PPM ABOVE OR BELOW THE 30 MINUTE ROLLING AVERAGE FOR OTHER SENSORS IN THAT PROXIMITY ZONE, THE SENSOR HAS FAILED.

B. BEFORE AN OCCUPANCY PERMIT IS GRANTED FOR A PARKING GARAGE SYSTEM SUBJECT TO SECTION 120.6(C), THE FOLLOWING EQUIPMENT AND SYSTEMS SHALL BE CERTIFIED AS MEETING THE ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE, AS SPECIFIED BY THE REFERENCE NONRESIDENTIAL APPENDIX NA7. A CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY THAT CERTIFIES THAT THE EQUIPMENT AND SYSTEMS MEET THE ACCEPTANCE REQUIREMENTS SPECIFIED IN NA7.12.

C. GARAGE VENTILATION SYSTEM SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY AND TESTING REPORT SHALL BE SUBMITTED TO THE MECHANICAL FIELD INSPECTOR PRIOR TO FINAL INSPECTION AND OCCUPANCY.

D. SUCH EXHAUST INLETS SHALL BE INSTALLED SO THAT THE HIGHEST ELEVATION OF THE EXHAUST INLET IS NO GREATER THAN 12 INCHES (305 MM) BELOW THE LOWEST CEILING LEVEL.

VENTILATION CALCULATIONS

PARKING GARAGE:

TOTAL AREA, SQ. FT. – 7725 SQ. FT.

EXHAUST RATE – 0.75 CFM/SQ. FT. (CMC TABLE 403.7)

REQUIRED EXHAUST AIRFLOW:
= 5793.75 x 0.75
= 5794 CFM

EXHAUST FAN CAPACITY:
5800 CFM, 1.5 IN. W.G.

MINIMUM VENTILATION RATE:
0.15 CFM/SQ. FT.
(PER CEC 120.6(c)5)

= 7725 x 0.15
= 1158.75 CFM
= 1160.00 CFM

GARAGE EXHAUST FAN SYSTEM SEQUENCE OF OPERATION

1. EXHAUST FANS SHALL RUN CONTINUOUSLY WHEN GARAGE IS SCHEDULED TO BE OCCUPIED.
2. EXHAUST FAN SYSTEM SHALL MAINTAIN THE GARAGE AT NEGATIVE PRESSURE RELATIVE TO OTHER OCCUPIABLE SPACES WHEN THE GARAGE IS SCHEDULED TO BE OCCUPIED.
3. MINIMUM AIRFLOW FOR FAN SHALL BE 5794 CFM.
4. CO SYSTEM SHALL MONITOR CO LEVEL AT ALL TIMES.
5. CO SYSTEM SHALL INCREASE FAN SPEED WHEN CO LEVEL EXCEEDS 25 PPM.
6. CO SYSTEM SHALL RAMP UP VFD BETWEEN 25 PPM AND 75 PPM PROPORTIONALLY TO HIGHEST SPEED.
7. CO SYSTEM SHALL ALARM IF CO CONCENTRATION EXCEEDS 100 PPM FOR 15 MINUTES.

GENERAL NOTES

A. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL PIPING/DUCTING AND UTILITIES PRIOR TO START OF WORK. IN THE EVENT OF ANY DISCREPANCIES OR POTENTIAL CONFLICTS, NOTIFY THE ARCHITECT AND ENGINEER IN WRITING PRIOR TO START OF WORK.

B. ALL PIPING/DUCTING LOCATIONS ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE WITH ALL TRADES AND OWNER'S REPRESENTATIVE AND VERIFY EXACT ROUTING PRIOR TO START OF WORK.

C. HEAT PUMPS SHOWN ARE FOR LEVELS 2 TO 4.

REV	DESCRIPTION	DATE
1	DESIGN CHANGES	02/23/22
2	PC COMMENTS	11/22/22
3	PC COMMENTS	12/22/22

COASTAL FORM ARCHITECTS
2002 Jimmy Durante Blvd.
Suite 200
Del Mar, CA 92014
858.531.9884
www.coastalform.com
info@coastalform.com

4060 OREGON STREET
48 MICRO UNIT APARTMENT
4060 OREGON STREET,
SAN DIEGO, CA 92104

M+R ENGINEERING CONSULTANTS INC.

REGISTERED PROFESSIONAL ENGINEER LEVI F. MALABUYO No. M26141 Ren. 6/30/23 MECHANICAL STATE OF CALIFORNIA

TITLE:
MECHANICAL PARKING LEVEL PLAN

8/30/2023, 10:42:27 AM
PRJ-1045942
Nikola Stamenkovic

JOB NO: B1910-AA031
DRAWN: ME
CHECKED: CZ
SCALE: AS SHOWN
DATE: 10.21.2021

M2.1

12/22/2022 6:49:21 PM