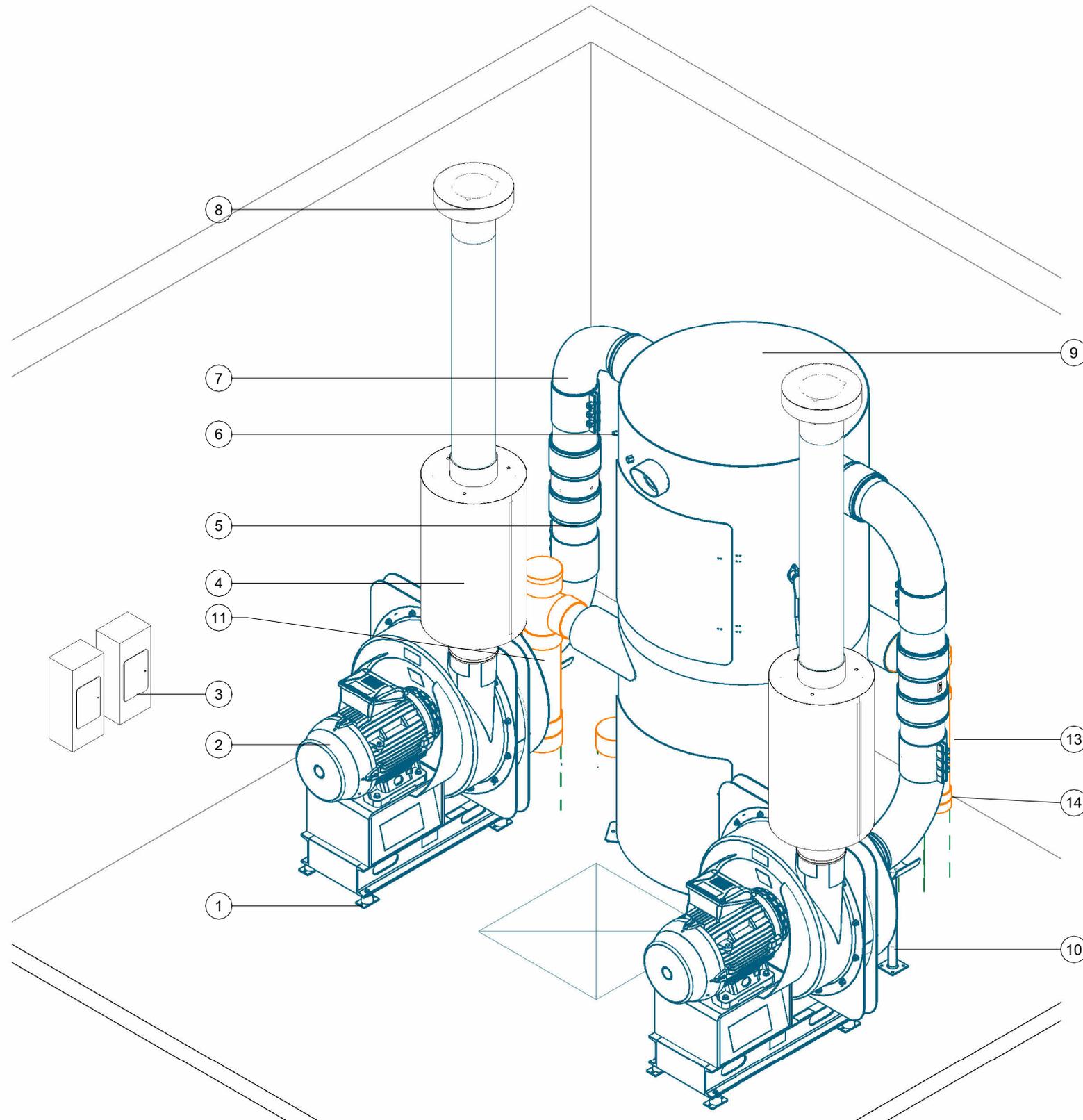


**EQUIPMENT NOTES:**

- 12'Lx9'W MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (60" CLEAR OPENING WIDTH RECOMMENDED)
- WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
- EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
- FIELD VERIFY ALL DIMENSIONS
- SEE POWER EQUIPMENT DETAILS ON V701

**EQUIPMENT SITE PLAN**

ITEM	DESCRIPTION
1	VERIFY SEPARATOR WILL FIT THROUGH DOOR
2	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
3	40HP T4 DIRECT DRIVE TURBINE
4	8" T4 INDOOR EXHAUST SILENCER; EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
5	30"x30" MINIMUM SPACE REQUIRED TO REMOVE DEBRIS BUCKET
6	45x96 FILTER SEPARATOR
7	6" VACUUM PIPE STUB-UP LOCATION
8	4" VACUUM PIPE STUB-UP LOCATION
9	4" BACK-UP VACUUM PIPE STUB-UP LOCATION



**EQUIPMENT NOTES:**

- 12'Lx9'W MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR
- (60" CLEAR OPENING WIDTH RECOMMENDED)
- WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION
- EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
- FIELD VERIFY ALL DIMENSIONS
- SEE POWER EQUIPMENT DETAILS ON V701

**EQUIPMENT SITE ISOMETRIC**

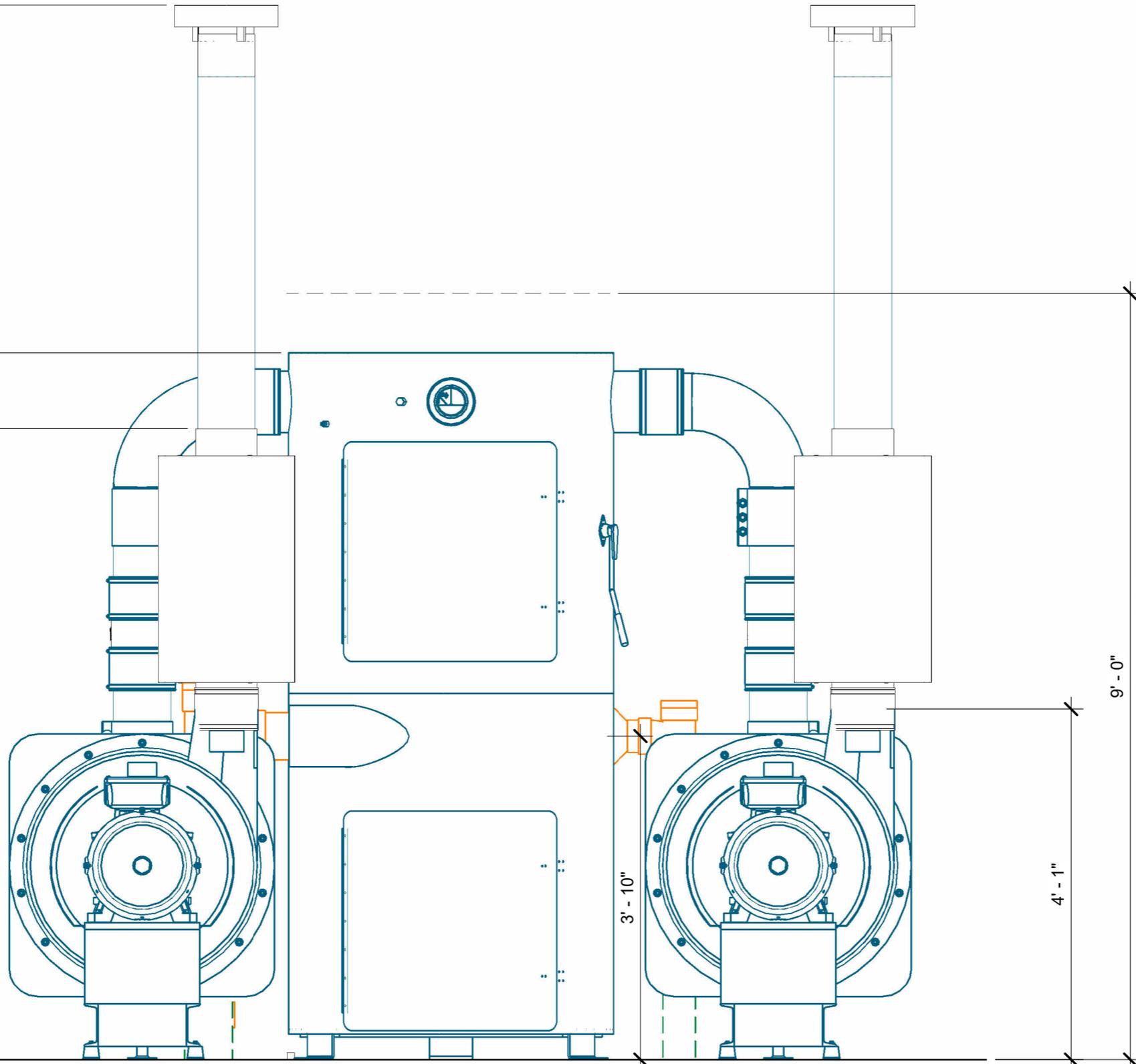
ITEM	DESCRIPTION
1	TURBINE VIBRATION ISOLATOR
2	40HP T4 DIRECT DRIVE TURBINE
3	RECOMMENDED DISCONNECT LOCATION (WITHIN SIGHT OF TURBINE), CLEARANCE REQUIRED IN FRONT
4	8" T4 INDOOR EXHAUST SILENCER; EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
5	8" STEEL CHECK VALVE
6	TRANSDUCER CONNECTION LOCATION ON SEPARATOR
7	8" SEPARATOR/TURBINE HOOK-UP KIT (ALUMINUM)
8	8" ROOF CAP
9	45x96 FILTER SEPARATOR
10	TURBINE PIPE SUPPORT
11	6" VACUUM PIPE STUB-UP LOCATION
12	6" FERNCO
13	4" VACUUM PIPE STUB-UP LOCATION
14	4" FERNCO

FIELD VERIFY ROOF CAP HEIGHT  
12' - 5"

8' - 4"

7' - 5"

0' - 4"



3' - 10"

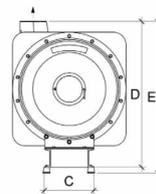
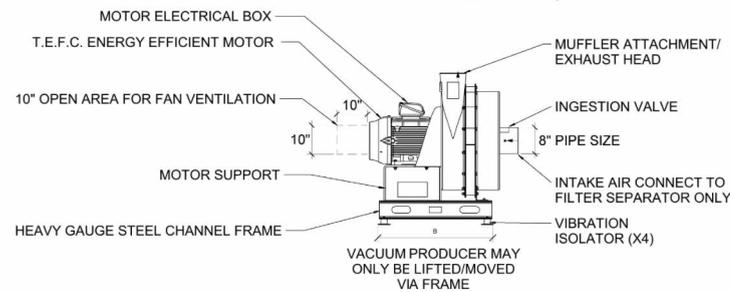
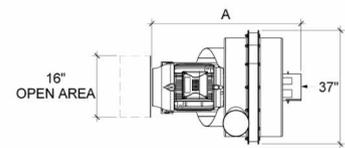
4' - 1"

9' - 0"

MINIMUM CEILING HEIGHT

**EQUIPMENT NOTES:**

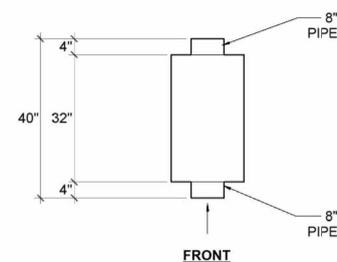
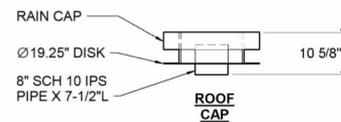
- 12'Lx9'W MINIMUM FLAT AND LEVEL CONCRETE FLOOR SPACE REQUIRED FOR VACUUM EQUIPMENT VERIFY SEPARATOR WILL FIT THROUGH DOOR (60" CLEAR OPENING WIDTH RECOMMENDED)
- WALL PENETRATION: CORE DRILLING MAY BE REQUIRED FIELD VERIFY HEIGHT
- NOTE: IF VACUUM EQUIPMENT IS ENCLOSED WITH ROOF/CEILING, REFER TO VENTILATION REQUIREMENTS UNDER EQUIPMENT WARRANTY INFORMATION EXHAUST TURBINE TO OUTSIDE AIR OR ATMOSPHERE W/ 8" ALUMINUM TUBE OR METAL PIPE
- FIELD VERIFY ALL DIMENSIONS
- SEE POWER EQUIPMENT DETAILS ON V701



T4 DIRECT DRIVE VACSTAR TURBINE								
MODEL	HP	STAGES	A	B	C	D	E	APPROX. WT (LBS)
FT-DD-T440HP3	40	3	49 3/4"	37"	16"	48 1/2"	50 1/2"	1175
FT-DD-T450HP3	50	3	51 1/4"	37"	16"	48 1/2"	50 1/2"	1225

FINISH:  
VACUUM TURBINE PRIMERED AND PAINTED WITH 3 MIL OF TWO-PART EPOXY POLYURETHANE AUTOMOTIVE PAINT

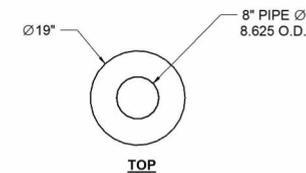
1 TURBINE - T4 DD



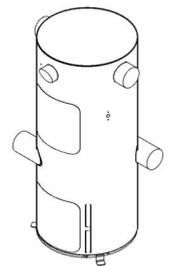
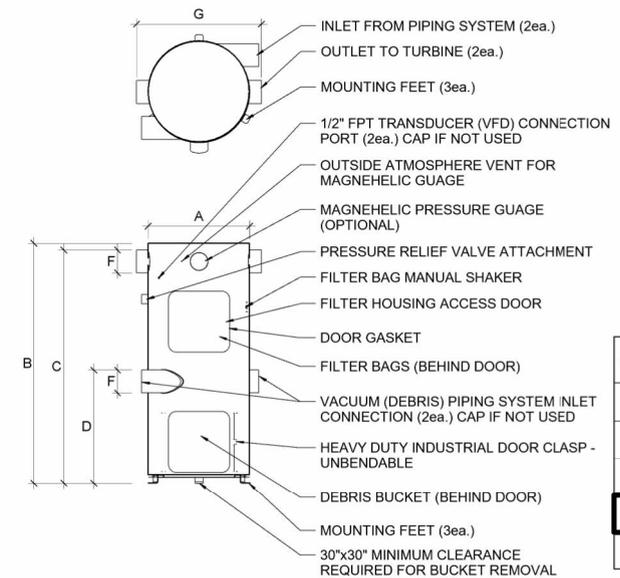
HIGH EFFICIENCY STRAIGHT THROUGH SOUND ABSORBING EXHAUST SILENCER/MUFLER

2 EXHAUST SILENCER - T4 INDOOR

FINISH:  
EXHAUST SILENCER PRIMERED AND PAINTED WITH 3MIL OF TWO PART EPOXY POLYURETHANE AUTOMOTIVE PAINT

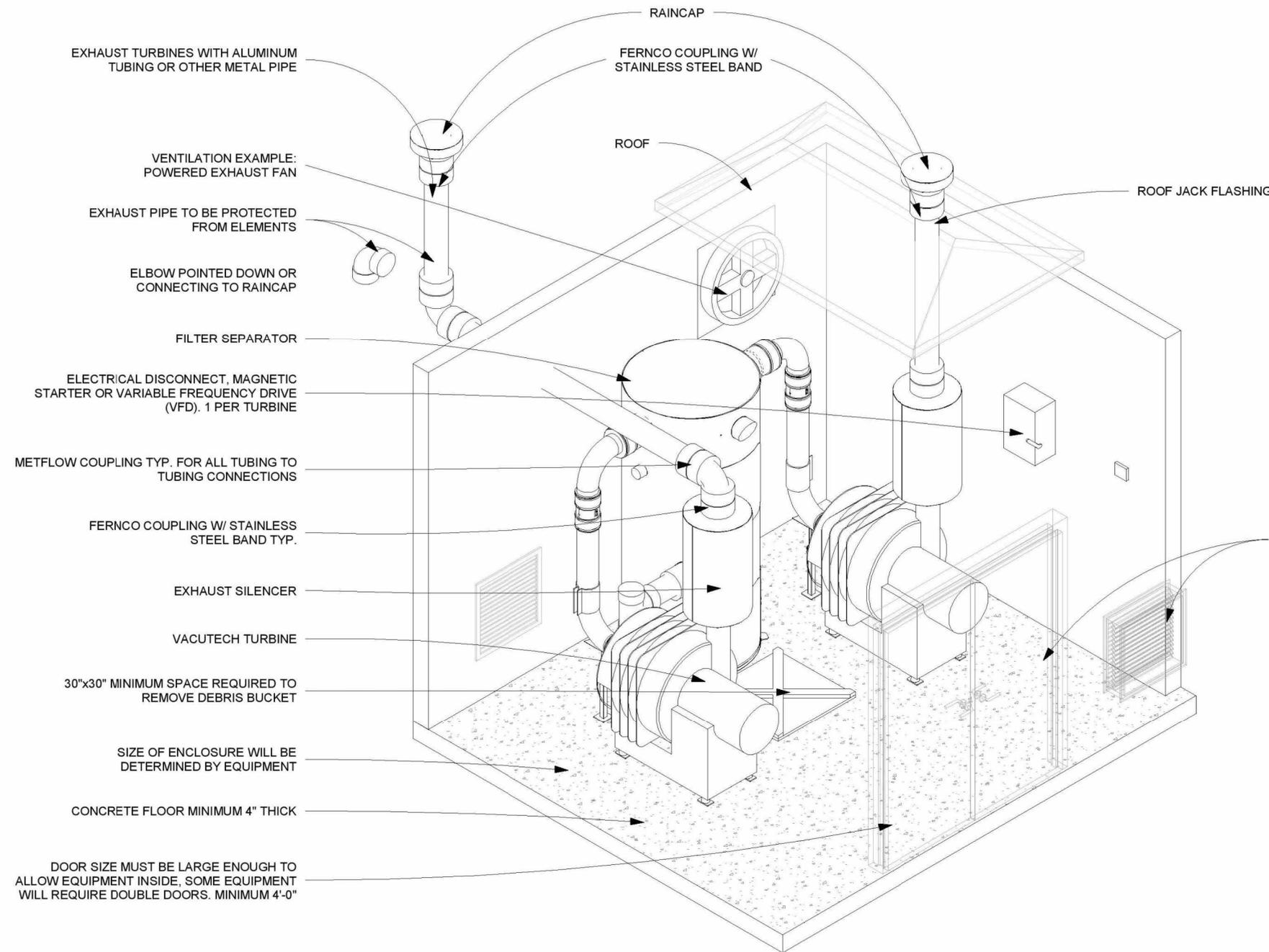


1. ALWAYS EXHAUST TO OUTSIDE 8" MINIMUM
2. ALWAYS PROTECT TERMINATION WITH WEATHER COVER NON-RESTRICTIVE.



MODEL	DIMENSIONS							APPROX. WEIGHT (LBS)
	A	B	C	D	E	F	G	
3160	31"	62"	61"	35"	6" IPS	6" IPS	41"	320
3179	31"	81"	79"	35"	6" IPS	6" IPS	41"	370
3888	38"	90"	88"	42"	6/8" IPS	6/8" IPS	48"	570
4596	45"	98"	86"	49"	8" IPS	8" IPS	55"	800
50108	50"	111"	108"	54"	8" IPS	8" IPS	60"	1420

3 SEPARATOR - FILTER



- EXHAUST TURBINES WITH ALUMINUM TUBING OR OTHER METAL PIPE
- VENTILATION EXAMPLE: POWERED EXHAUST FAN
- EXHAUST PIPE TO BE PROTECTED FROM ELEMENTS
- ELBOW POINTED DOWN OR CONNECTING TO RAINCAP
- FILTER SEPARATOR
- ELECTRICAL DISCONNECT, MAGNETIC STARTER OR VARIABLE FREQUENCY DRIVE (VFD). 1 PER TURBINE
- METFLOW COUPLING TYP. FOR ALL TUBING TO TUBING CONNECTIONS
- FERNCO COUPLING W/ STAINLESS STEEL BAND TYP.
- EXHAUST SILENCER
- VACUTECH TURBINE
- 30"x30" MINIMUM SPACE REQUIRED TO REMOVE DEBRIS BUCKET
- SIZE OF ENCLOSURE WILL BE DETERMINED BY EQUIPMENT
- CONCRETE FLOOR MINIMUM 4" THICK
- DOOR SIZE MUST BE LARGE ENOUGH TO ALLOW EQUIPMENT INSIDE, SOME EQUIPMENT WILL REQUIRE DOUBLE DOORS. MINIMUM 4'-0"

VENTILATION EXAMPLE: LOUVERED ENCLOSURE DOOR, OR LOUVERS IN WALL

**HEAT GENERATION TABLE**

HP	Across the Line Starter		Variable Frequency Drive (VFD)	
	Heat Load (BTU/HR)	Required Airflow (CFM)	Heat Load (BTU/HR)	Required Airflow (CFM)
10	12722	915	2544	284
15	19084	1373	3817	426
20	25444	1830	5089	568
25	31805	2288	6361	710
30	38166	2745	7633	852
40	50889	3660	10178	1136
50	63611	4575	12722	1420
60	76333	5490	15267	1704
75	95416	6863	19083	2130
100	127222	9150	25444	2840

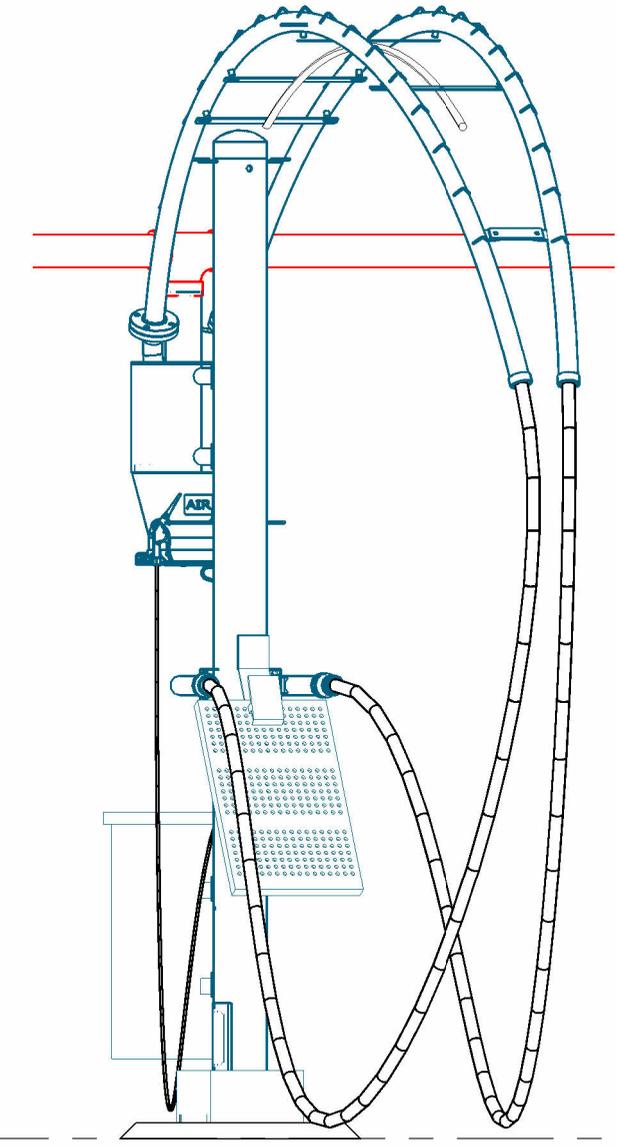
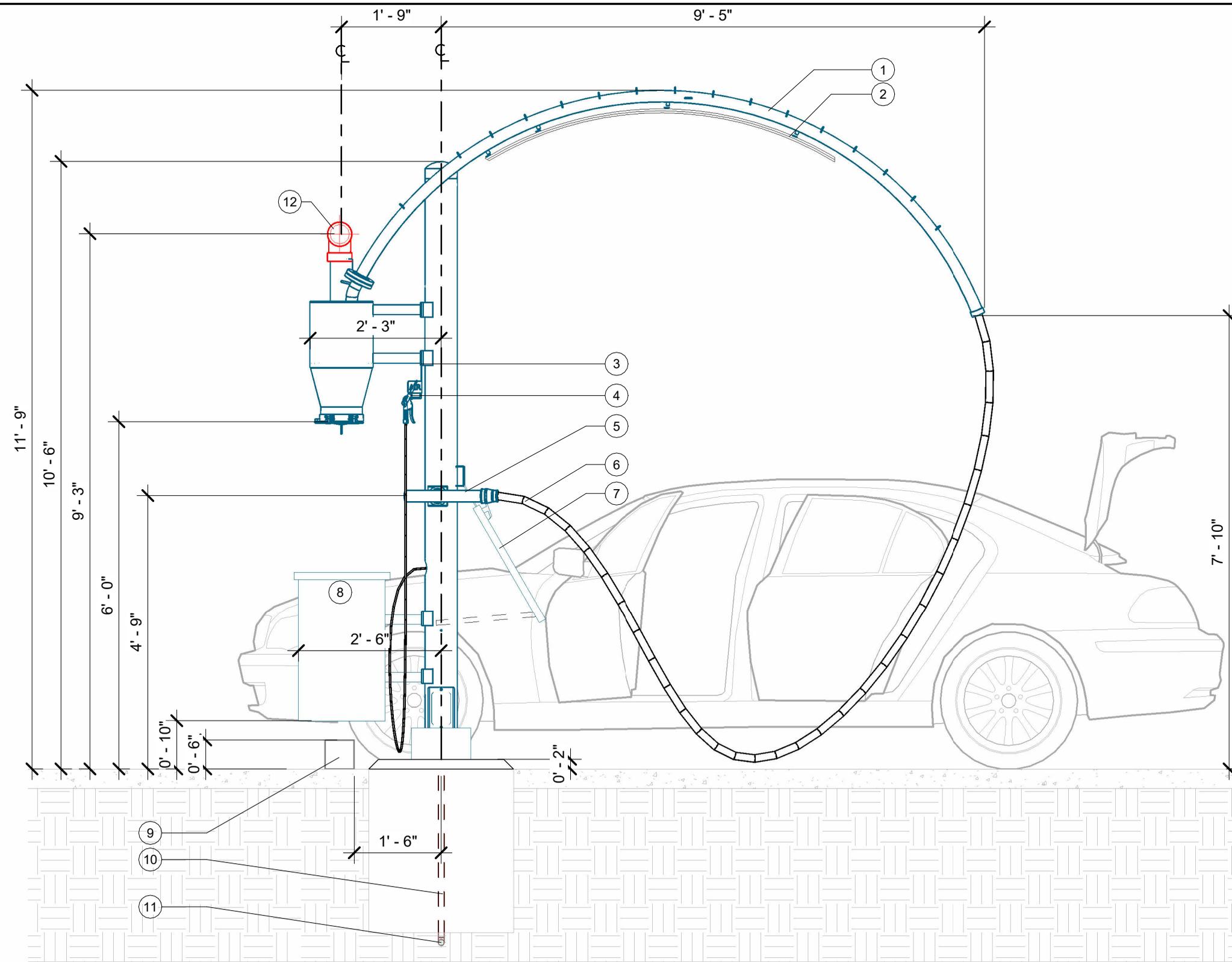
VACUUM EQUIPMENT INSTALLED IN AN ENCLOSURE WITH 4 WALLS AND A ROOF MUST BE ADEQUATELY VENTILATED OR ROOM CONDITIONED IN ORDER TO PROPERLY DISSIPATE THE HEAT GENERATED BY THE MECHANICAL AND ELECTRICAL EQUIPMENT. IMPROPER VENTILATION AND HEAT DISSIPATION CAN AND WILL RESULT IN DAMAGE TO THE MECHANICAL AND ELECTRICAL EQUIPMENT INCLUDING VFD'S, MOTOR STARTERS, ELECTRIC MOTORS AND VACUUM PRODUCERS. PLEASE REFERENCE THE HEAT GENERATION TABLE INCLUDED IN THIS DETAIL TO DETERMINE THE AMOUNT OF HEAT LOAD THAT THE TURBINE(S) AND STARTING EQUIPMENT WILL GENERATE AND THE CORRESPONDING REQUIRED AIR FLOW OF EXHAUST AND AIR INTAKE TO DISSIPATE THE HEAT GENERATED BY THE VACUTECH EQUIPMENT. IF ADDITIONAL EQUIPMENT IS INSTALLED IN THE EQUIPMENT ROOM (AIR COMPRESSORS, ELECTRICAL PANELS, TUNNEL CONTROLS, ETC.) PLEASE CONSULT YOUR HVAC DESIGN ENGINEER FOR PROPER TEMPERATURE CONTROL DESIGN OF YOUR EQUIPMENT ROOM. OPERATING TEMPERATURES ABOVE 104 °F (TYPICAL MAXIMUM ENVIRONMENTAL TEMPERATURE FOR ELECTRICAL EQUIPMENT) WILL SHORTEN THE LIFE OF THE VACUUM EQUIPMENT AND MAY INVALIDATE THE VACUTECH LLC WARRANTY.

THE VACUUM TURBINE MUST BE EXHAUSTED OUTSIDE WITH METALLIC PIPE NO SMALLER THAN THE DIAMETER OF THE EXHAUST OUTLET OF THE TURBINE. THE EXHAUST PIPE OPENING MUST BE PROTECTED FROM ELEMENTS. IF EXHAUST DISTANCE IS GREATER THAN 20 FEET USE ONE PIPE SIZE LARGER AFTER 10 FEET OF RUN (I.E. FOR A 20-FOOT RUN OF 8" EXHAUST, USE 8" FOR FIRST 10 FEET AND 10" FOR REMAINING 10 FEET OF THE OVERALL 20-FOOT RUN).

FOR EQUIPMENT ROOMS WITH MULTIPLE TURBINE SETUPS, ADD THE CFM REQUIREMENT PER TURBINE TO DETERMINE TOTAL CFM REQUIREMENT FOR THE EQUIPMENT ROOM. THIS ASSUMES EQUIPMENT ROOM DIMENSIONS 15' X 15' WITH 10' CEILINGS. THIS ASSUMES AN OUTSIDE AIR TEMPERATURE OF 90°F AND A MAXIMUM ROOM TEMPERATURE OF 104°F (NEMA CLASS F INSULATION RATING, MAXIMUM TEMPERATURE) AND DOES NOT ACCOUNT FOR RADIANT HEATING FROM THE ENVIRONMENT OR ANY OTHER EQUIPMENT INSTALLED IN EQUIPMENT ROOM. THESE VALUES ARE ESTIMATES ONLY AND DEPEND ON EQUIPMENT ROOM DIMENSIONS, GEOGRAPHIC LOCATION AND EQUIPMENT SETUP. TO CALCULATE YOUR SPECIFIC CONFIGURATION AND SITE CONDITIONS PLEASE CONSULT YOUR MECHANICAL HVAC DESIGNER AND ASHRAE STANDARDS.

**FIELD VERIFY ALL DIMENSIONS**

**PIER DESIGN AND REINFORCEMENT FOR CONCEPTUAL USE ONLY. CONSULT STRUCTURAL ENGINEER IN YOUR AREA FOR SPECIFIC DESIGN CRITERIA.**



F.G.  
0' - 0"

**1** PARKING ELEVATION

PARKING ELEVATION		PARKING ELEVATION	
ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	DUAL USER UMBRELLA ARCH	8	30 GALLON WASTE RECEPTACLE
2	6' LED LIGHT	9	CURB
3	AIR TOOL HANGER	10	COMPRESSED AIR LINE RAN UP THROUGH FOOTING WITH 1/2" FIPT ADAPTER, 10" ABOVE FOOTING GRADE (BY OTHERS)
4	AIR NOZZLE & HOSE	11	BURIED COMPRESSED AIR LINE (BY OTHERS)
5	CREVICE VACUUM TOOL	12	4" OVERHEAD ALUMINUM VACUUM TUBE
6	1-1/2"x15' RAPIDLOCK HOSE		
7	17" MAT RACK		