

[REDACTED]

October 15, 2019

To: [REDACTED]

**Pre-Start Health and Safety Review
Dust Collection System – Packaging**

This review covers the named equipment installed at the above address. A new facility has been constructed to produce powdered milk.

A 1,300 cfm dust collection system has been installed to capture nuisance dust generated at a packaging line. The dust is combustible. The collector is located indoors and the filtered air is being exhausted to atmosphere.

The following design features provide compliance with the Ontario Ministry of Labour, Ontario Fire Code and relevant NFPA standards:

- The dust collector is grounded and the ductwork electrically bonded to the collector.
- The collector is fitted with a flameless explosion vent c/w a burst indicator.
- Fire protection is installed.
- An explosion isolation valve c/w indicator switch is installed in the dirt air ducting.
- A signal from any of the above will de-energize the fan and create an alarm.
- Transport velocities exceed 1068 m/min.
- The packaging line is interlocked to the operation of the dust collector fan.

The installation was verified by the start-up and commissioning report dated October 10.

The following drawings and report represent the installation:

Item	Title
Dwg. IG13798167L001	10 hp dust collector – Donaldson DFE2-4
Dwg. SO-25783-B1	Rotary valve c/w finger guard
A.S.T. Oct. 10, 2019	Commissioning Report
ESA Oct. 9, 2019	Certificate of Inspection

The following sections of Ontario OHSA “Regulation 851 for Industrial Establishments” were applied:

- Section 63 – process producing dust capable of forming explosive mixture
- Section 65 – dust collectors for dust of easily ignitable nature

A picture of a flex hose connected to the ductwork was received. It is supplied by the owner. It is noted that the helix wire needs to be electrically bonded to the metal ducting and process machinery.

Based on a review of the installation, I consider that the dust collection system installed by Air Separation Technologies per above does comply with the Act and regulations listed in this letter.

The review has been carried out in accordance with “Guidelines for Pre-Start Health and Safety Reviews” issued by the Ontario Ministry of Labour, April 2001 and as required by Regulation 528/00 amending Section 7 of regulations for Industrial Establishments, Regulation 851 of the Ontario Occupational Health and Safety Act.

It is required under Regulation 851 that a copy of this Letter of Confirmation and attachments be kept at or near the workplace at which the equipment is located.



Attachments:

- Listed drawings and reports
- Picture dust collector and flex hose

REV	DESCRIPTION	DATE
1	UPDATED PER REQUEST	

1

DO NOT INSTALL OR OPERATE THIS EQUIPMENT UNTIL YOU HAVE READ AND UNDERSTOOD THE INSTRUCTIONS AND WARNINGS IN THE INSTALLATION AND OPERATING MANUAL. FOR A REPLACEMENT MANUAL CONTACT DONALDSON CO. (800-363-1331)

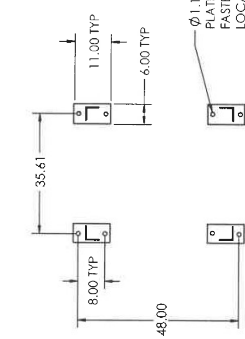
SPECIFICATIONS DFE 2-4

REMOTE TIMER-----110 VAC 50/60 HZ
 NUMBER OF FILTERS-----4 ULTRA-WEB CONDUCTIVE FR
 ACTUAL FILTER AREA-----1,016 SQ FT
 OPERATING TEMPERATURE-----0.4 BAR
 NUMBER OF VALVES-----4
 COMPRESSED AIR REQUIRED-----5.2 SCFM @ 60 PSIG
 HOUSING RATING-----25" WC
 APPROXIMATE WEIGHT-----4,145 POUNDS

IBC 2015 SPECIFICATIONS:

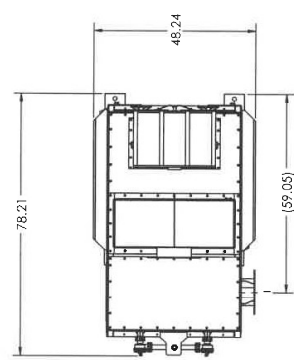
OCCUPANCY CATEGORY 2
 BASIC WIND SPEED & EXPOSURE: 115 MPH, EXPOSURE C, 3 SEC GUST
 SEISMIC SPECTRAL ACCELERATION, $S_s=1.50$ & $S_1=0.60$, SITE CLASS D
 ROOF LIVE LOAD: 20 PSF
 COLLECTOR BASE AT GRADE

NOTE:
 1. GROUND TEST DOCUMENTATION SHIPS WITH COLLECTOR.

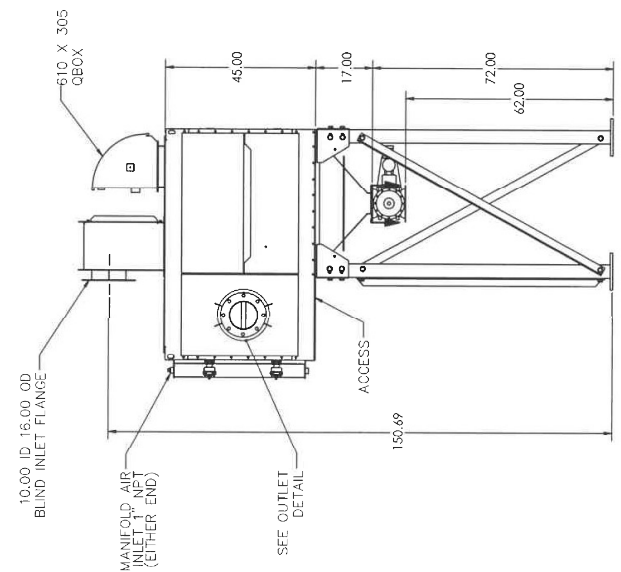


SECTION A-A

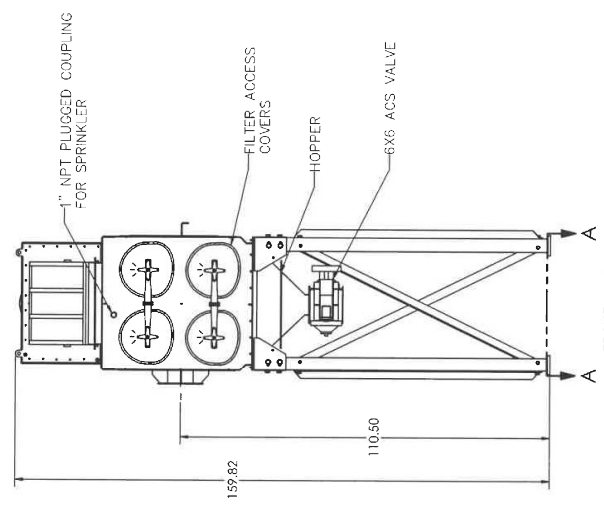
ANCHOR BOLTS BY OTHERS. FINAL SELECTION WILL DEPEND ON JOBSITE LOAD CONDITIONS, FOUNDATION DESIGN, LOCAL CODES, ETC. CONSULT PRODUCT IOM FOR GENERAL INSTALLATION INFORMATION.



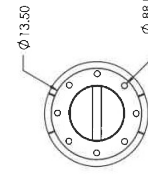
TOP VIEW



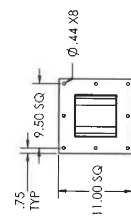
LEFT VIEW



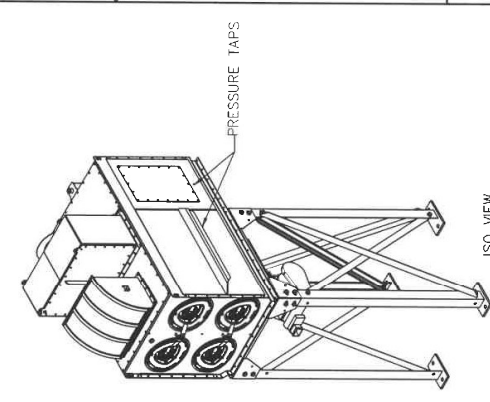
FRONT VIEW



OUTLET DETAIL



HOPPER OUTLET DETAIL



ISO VIEW

AIR SEPARATION

MATERIAL	VALVE 2-4 INLET COLLECTOR WITH GBOX AND BLIND FLANGE INLET
RELEASE AND DATE	UNN C. STACY
EXP. DATE	DATE 9/4/2019
REFERENCE TO LANCES PER	IG13798167L001
GP42/0.01	SCALE NONE SHEET 1 OF 1
DESIGNS DRAWING NO.	DATE
LOG	DATE
TOLERANCES	SCALE
FINISHES	ANGLES
UNIT	ANGLES
UNIT	ANGLES

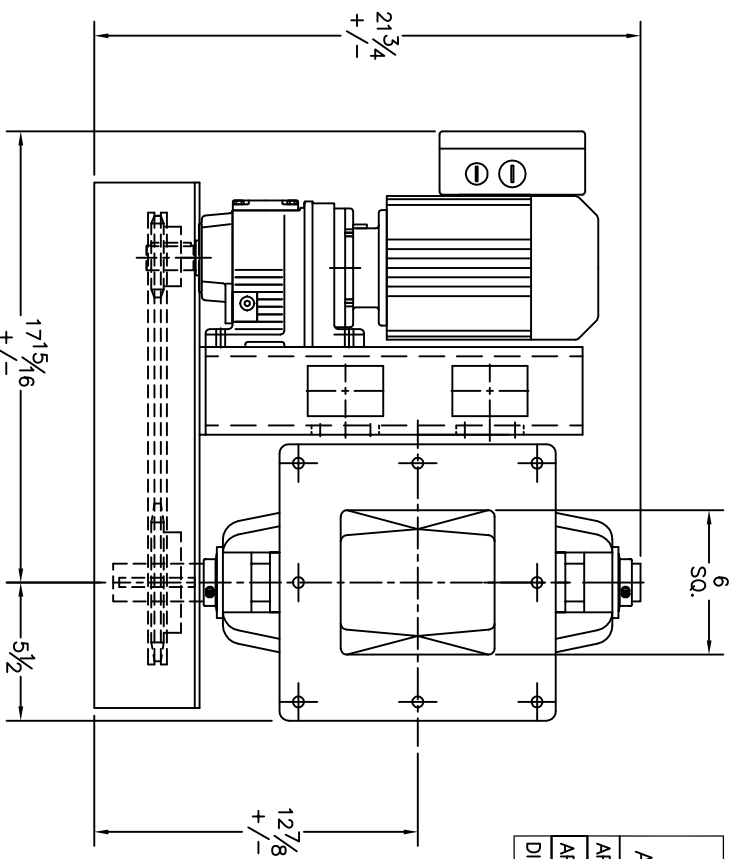


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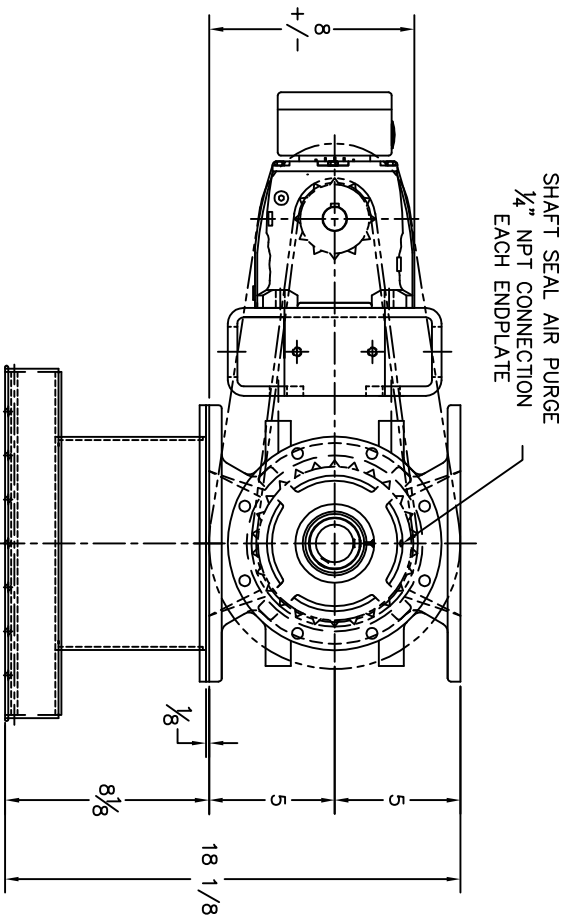
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FOR APPROVAL

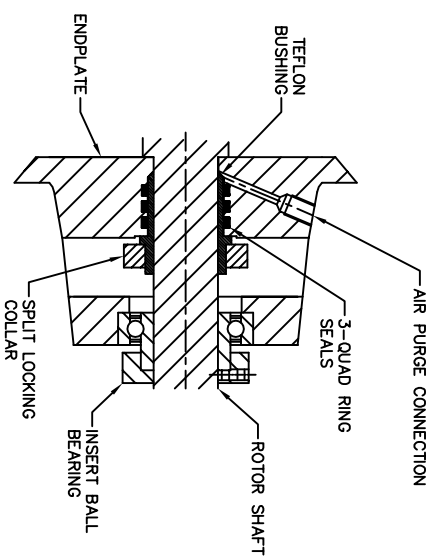
APPROVAL BY : _____	DATE : _____
APPROVED : PROCEED WITH FABRICATION	
APPROVED WITH COMMENTS	
DISAPPROVED : CORRECT & RESUBMIT	



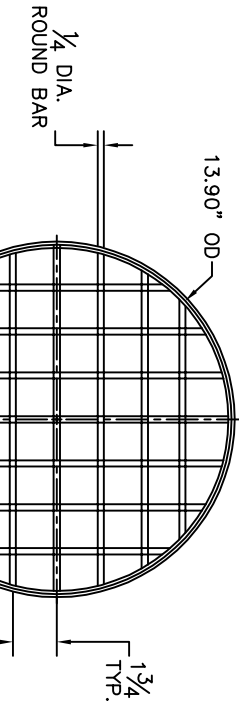
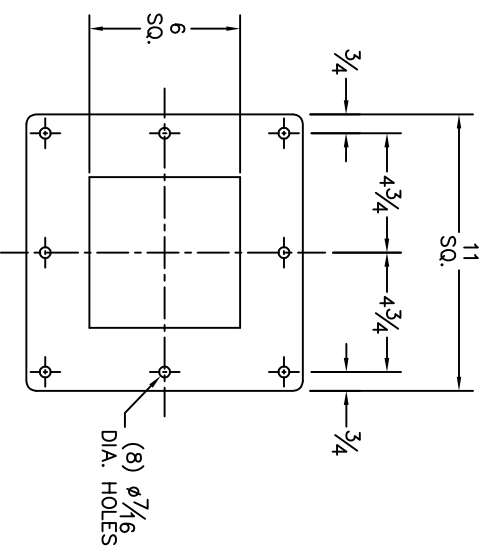
PLAN VIEW



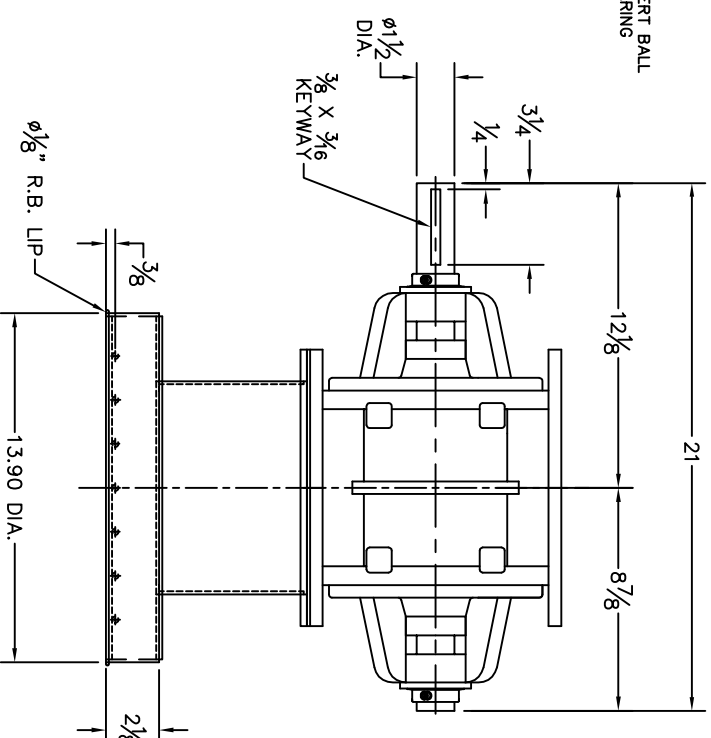
ACST-4 SEAL DETAIL



FLANGE DETAIL



ELEVATION



ELEVATION

HOUSING	ENDPLATE	ROTOR	TYPE	MAT'L	BLADE TIP	CLEARANCE
MAT'L	MAT'L	MAT'L		MAT'L		<0.0079"
IRON	IRON	MILD STEEL	FIXED EDGE	MILD STEEL		FOR NFPA

MFG.	HP	VOLTAGE	ENCLOSURE	RATING	EFFICIENCY	RPM
SEW EURODRIVE	3/4	3/60/575v	TEFC	CSA APPROVED	PREM. EFF.	180
R-SERIES						

MFG.	FRAME	RATIO	SIZE	R.P.M.
SEW EURODRIVE	R37	36.72	R37DRS71M4	46
R-SERIES				
CHAIN DRIVE	SIZE	BORE	OPERATING TEMP.	SHAFT SEAL
60B12	Ø1	60B28	Ø1-1/2	NORMAL (50-250°F)
				ACST-4

PRODUCT HANDLED	MILK POWDER
PRODUCT DENSITY	---
DISPLACEMENT / REV.	0.10 C.F.R.
VALVE SPEED	20 RPM
CONVEY RATE	---

NOTES

- ALL DIMENSIONS IN INCHES
- CONSTRUCTION:
CAST GREY IRON HOUSING AND ENDPLATES (CL.40,217 BRINELL)
FABRICATED 8-VANE CARBON STEEL ROTOR, OPEN END FIXED WITH RELIEVED TIPS (1/8" LAND) CLOSE TOLERANCE C.C.W. ROTATION LOOKING AT THE DRIVE END.
- BOTTOM & TOP FLANGE BOLT PATTERNS ARE SYMMETRICAL
- PAINT:
STANDARD METAL PREPARATION, EXTERIOR PRIMED AND ONE COAT FINISH ENAMEL - ACS BLUE
DRIVE GUARD - HIGH VISIBILITY SAFETY YELLOW, MOTOR/GEARMOTOR - MANUFACTURERS STANDARD FINISH
- ACST-4 SHAFT SEAL ASSEMBLY (SEE DETAIL)
- INCLUDED FEATURES
- ENDPLATES: CAST IRON CONSTRUCTION
- ENDPLATES: SHAFT SEAL AIR PURGE CONNECTION, 1/4" NPT
- ROTOR: FABRICATED 8-VANE OPEN END MILD STEEL
- ROTOR: FIXED EDGE MILD STEEL ROTOR TIPS - BEVELED
- HOUSING: CAST IRON CONSTRUCTION
- NFPA COMPLIANT
- DISCHARGE FLANGE GUARD - 13.9" TRANSITION

ACS VALVES

611 ARGYLE STEEL NORTH
CALEDONIA ONT. N3W-1M1
PHONE: 905-765-2004
FAX: 905-765-4491
sales@ancasterconveying.com
www.ancasterconveying.com

TITLE: ACS MODEL C.I. 6 X 6 ROTARY VALVE, GENERAL ARRANGEMENT

FOR: AIR SEPARATION

P.O.: 200445

ISSUE	DATE	REVISION	BY	CHECKED:
A	AUG/13/19	APPROVAL	NS	

SO-25783-B1

Proprietary Information
This drawing is the confidential and trade secret of Ancaster Conveying Systems Ltd. and is not to be reproduced, used or disclosed, in whole or in part, of the design or construction of any equipment without the express written permission of Ancaster Conveying Systems Inc.



Date: Thursday October 10th, 2019

Customer

Application: Packaging Line – Milk Powder

Performed by: Amir Fard (AST) and Hossein (Northridge Electric)

Start Up & Commissioning Report for DFE 2-4 (Serial #IG13798167L001)

- **Dust Collector Installation:** The dust collector is assembled as per drawing enclosed.
- **Ductwork Installation (Dirty Side):** Complete based on the enclosed 3D layout.
- **Ductwork Installation (Clean Side):** The customer delayed the roofing and cut the hole in a different side. They are responsible to finish the installation with providing the proper offset. The no loss stack is supplied by AST.
- **Ductwork Bonding:** All the between the blow back damper and application is galvanized QF and copper jumpers are added on.
- **Dust Collector Grounding:** The grounding lug of the dust collector is wired to a steel column of the building.
- **Electrical installation:** Complete
 - Panel on stand beside collector
 - Main Power to the panel
 - Wire to solenoids
 - Wire to fan
 - Wire to rotary airlock
 - Wire to burst indicator of the flameless explosion vent
 - Wire to the sensors of blow back damper
 - Wire to interlock the dust collector to the application (packing line won't run unless the dust collector running)
 - Wire to FireTrace pressure switch
- **Safety Installation:** Complete
 - Flameless explosion Vent and Burst panel interlock with the fan
 - Blow Back Damper and Micro Switch interlock with the fan
 - Dust Deposit Sensor and alarm light on the panel
 - FireTrace Fire Distinguishing System interlock with the fan (see enclosed report)





- **Filter Cleaning System Installation: Complete**

- ☑ Air Tube to Dirty Plenum
- ☑ Air Tube to Clean Plenum
- ☑ High Set @ 4" wg
- ☑ Low Set @ 2" wg
- ☑ Alarm Set @ 6" wg

- **Rotary Airlock Installation:** Complete and rotation checked. The outlet of the airlock is equipped with CSA finger guard as per approved drawing.

- **Airline Installation:** Complete and the regulator was set at 60 PSI

- **Fan Rotation:** Checked and was going CW

- **Airflow Testing:** Complete. Here is the result:



V=4,800 FPM @ 6"Ø
Q = 940 CFM



V=5,400 FPM @ 5"Ø
Q = 735 CFM





- Initial Differential Pressure Across the filters: 0.2” WG

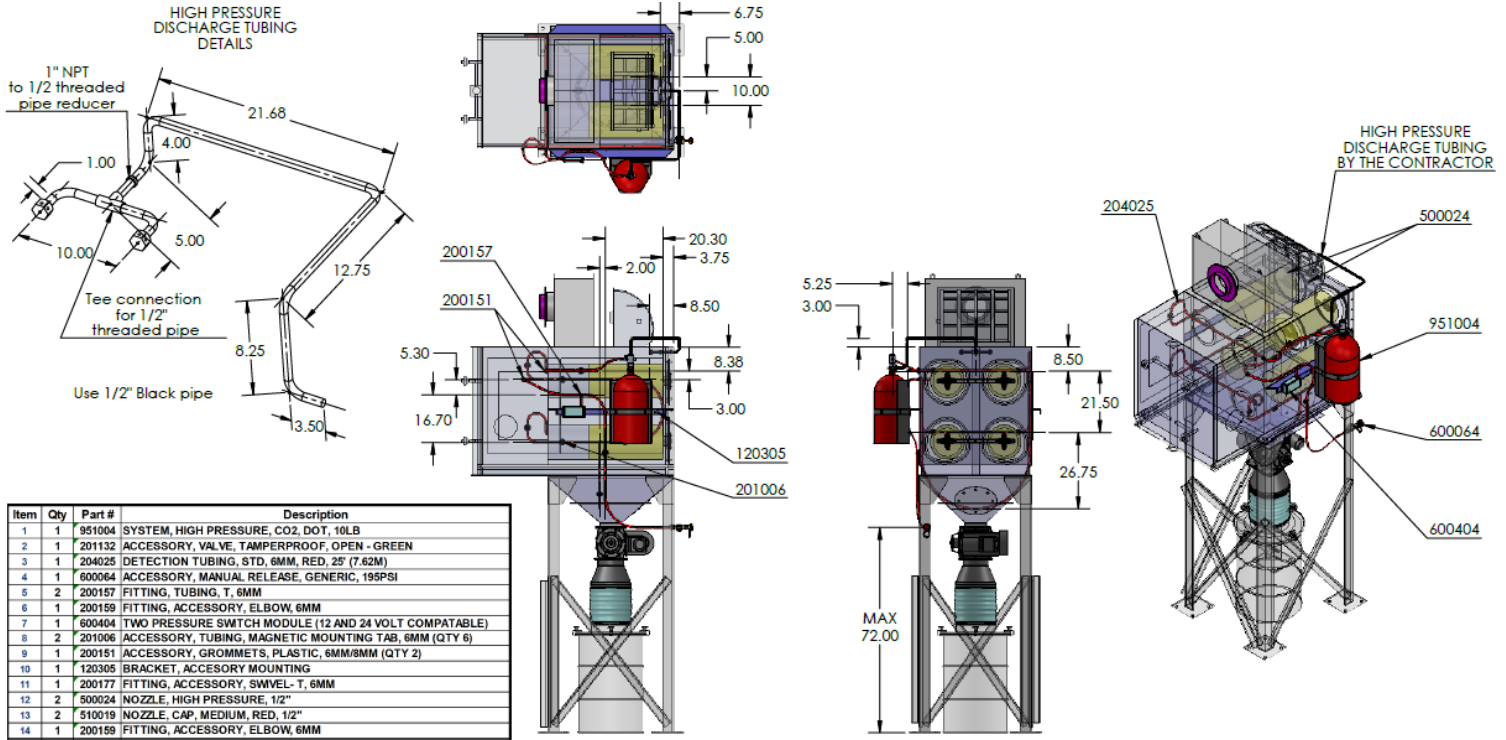


PHOTOS OF INSTALLATION:



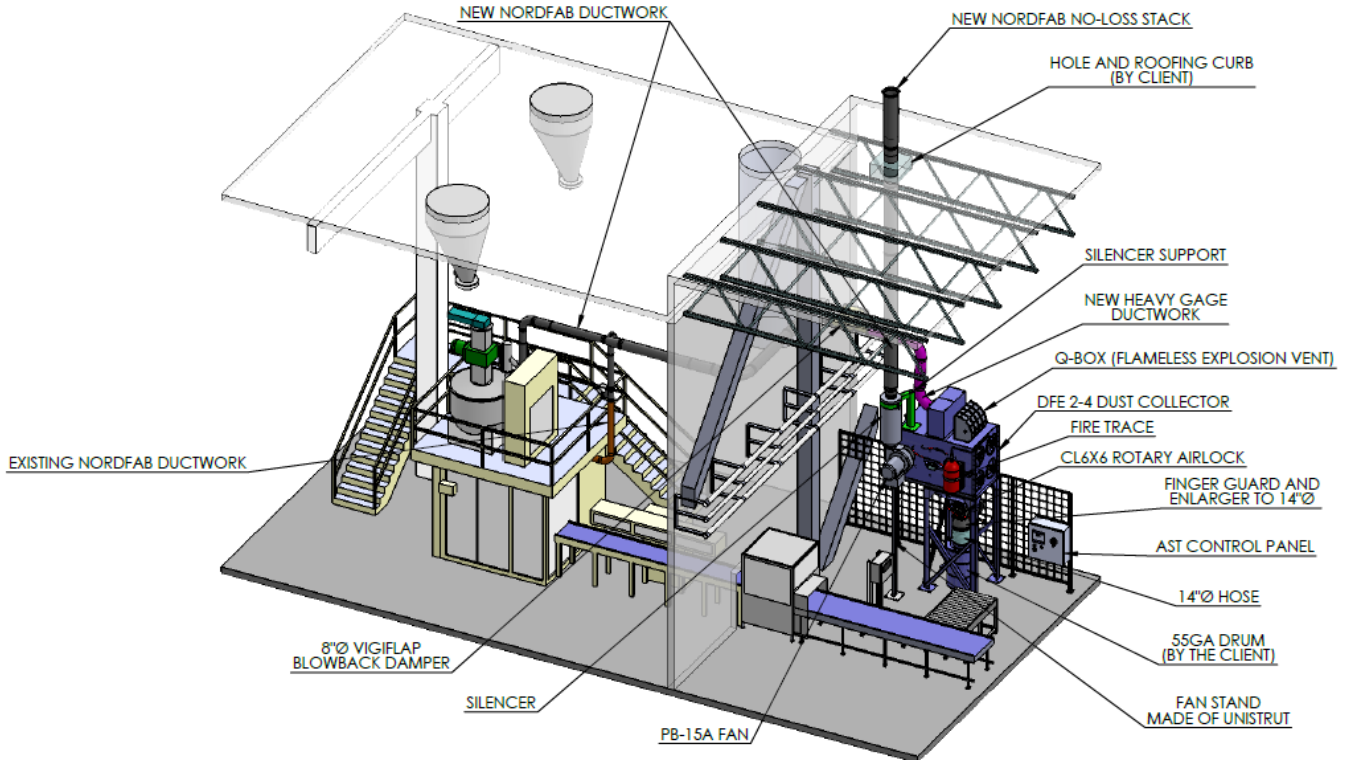
FireTrace System:

The FireTrace is sized and installed as per manufacturer recommendation



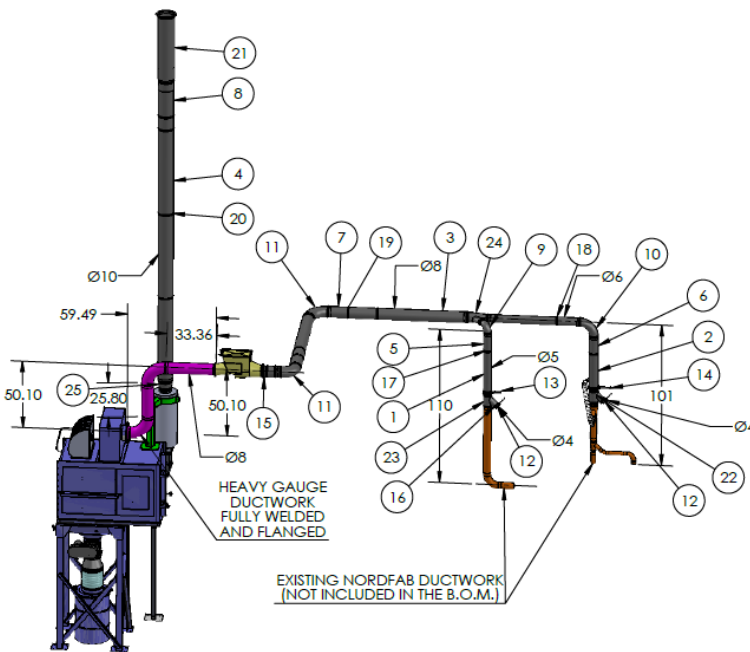


System Layout in 3D:



NEW NORDFAB COMPONENTS BOM

LINE	PCS	ITEM NO.	DESCRIPTION	lbs
				271
1	1	3200-0500-100000	PIPE 5" x 59.25" LONG	6.7
2	2	3200-0600-100000	PIPE 6" x 59.25" LONG	15.9
3	5	3200-0800-100000	PIPE 8" x 59.06" LONG	66.3
4	4	3200-1000-100000	PIPE 10" x 59.06" LONG	66.4
5	1	3202-0500-100000	ADJ NIPPLE WITH O-RING 5"	1.3
6	2	3202-0600-100000	ADJ NIPPLE WITH O-RING 6"	3.2
7	3	3202-0800-100000	ADJ NIPPLE WITH O-RING 8"	8.1
8	1	3202-1000-100000	ADJ NIPPLE WITH O-RING 10"	3.4
9	1	3210-0590-105000	ELBOW 5" 90Deg. 1.0CLR	1.2
10	1	3210-0690-106000	ELBOW 6" 90Deg. 1.0CLR	1.5
11	2	3210-0890-112000	ELBOW 8" 90Deg. 1.5CLR	12.2
12	2	3240-0400-100000	MANUAL BLAST GATE 4"	4.5
13	1	3240-0500-100000	MANUAL BLAST GATE 5"	3.0
14	1	3240-0600-100000	MANUAL BLAST GATE 6"	3.8
15	1	3250-0800-100000	ANGLE FLANGE ADAPTER 8"	3.2
16	4	3260-0400-100900	CLAMP WITH PIN 4"	1.2
17	8	3260-0500-100900	CLAMP WITH PIN 5"	2.0
18	10	3260-0600-100900	CLAMP WITH PIN 6"	2.8
19	13	3260-0800-100900	CLAMP WITH PIN 8"	7.0
20	8	3260-1000-100900	CLAMP WITH PIN 10"	5.0
21	1	3204-1000-100000	NO-LOSS STACKHEAD 10"	36.0
22	1	3220-0604-106000	BRANCH, A=06 B=04 C=06	4.3
23	1	3220-0504-105000	BRANCH, A=05 B=04 C=05	3.8
24	1	3220-0805-106000	BRANCH, A=08 B=05 C=06	6.0
25	1	3222 Reducer	A=8RawOD, B=10GF, Length = 7"	2.3



IMPORTANT!

PLEASE NOTE, THAT IS THE CONTRACTOR / INSTALLER'S RESPONSIBILITY TO CHECK AND PROOF THE ABOVE BILL OF MATERIAL.

Certificate of Inspection

NORTHRIDGE ELECTRIC INC
119 MILVAN DR
WESTON ON M9L 1Z8

NOTICE DATE: October 09, 2019
NOTIFICATION #: 16461813
PRINT DATE: October 09, 2019
CUSTOMER ID: 5897
CUST. ORDER #: 8014
LICENCE NUMBER: 0007002670

Re:

[Redacted]

WE HEREBY CERTIFY THAT AN ELECTRICAL INSPECTION AT THE AFOREMENTIONED
ADDRESS WAS CONDUCTED OR IS DEEMED CONDUCTED ON THE INSTALLATION
DESCRIBED HEREIN

1 LV ICIA MISCELLANEOUS EQUIPMENT
DUST COLLECTION UNIT: 10HP 600V MOTOR

8 OUTLETS AND OTHER DEVICES NON CLASSIFIED
DUST COLLECTION UNIT: DEVICES

The Electrical Safety Authority (ESA) operates as a delegated authority on behalf of the provincial government in accordance with Part VIII, section 113 of the Electricity Act, 1998, S.O. 1998, c.15, Sched. A. (the Act), and the Safety and Consumer Statutes Administration Act, 1996, S.O. 1996, c.19. ESA's mandate is to administer the Act and corresponding Regulations on behalf of the Province of Ontario.

ESA is a not-for-profit corporation under the direction and control of a Board of Directors and is accountable to the Ministry of Government and Consumer Services in accordance with an Administrative Agreement.



