PROPOSAL LOGIC

Confirming your request, this proposal/contract lists and describes the "Inline" refrigerated conveying system and ambient air cooling conveyor required to cool 6,000 lbs. per hour of 3/8" cubed, or 3/16" sliced potato products from 185°F to 40°F using a two stage cooling process. The first stage is an ambient air cooler, cooling product from 185°F to 90°F using outside air. While the second stage is an inline conveyor using refrigerated air to cool product from 90°F to a final average temperature of 40°F.

ENGINEERING DATA:

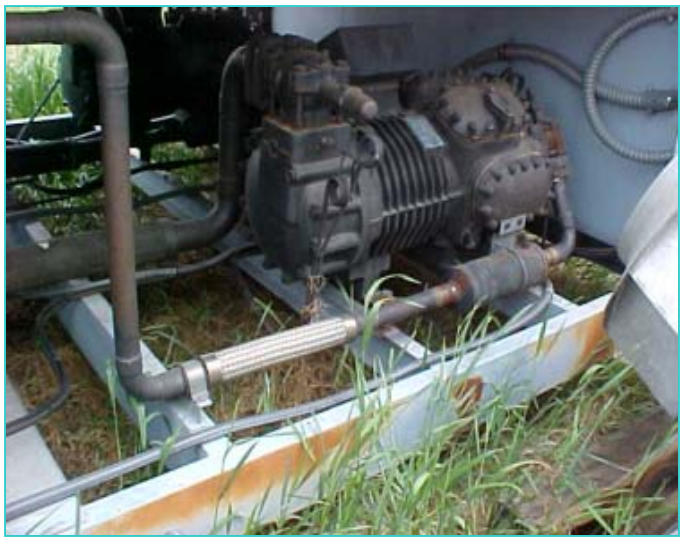
Product:	Potatoes, diced and sliced
Size/Type:	3/8" diced, 3/16" slice
Quantity:	6,000 lbs/hr
Freezing pt.:	30.8°F
S.H. above freezing:	0.85 btu/lb/°F
Latent heat of fusion:	116 btu/lb
S.H. below freezing:	0.44 btu/lb/°F
Avg. Depth on refrigerated cooler belt:	2 1/2"-3" deep (8-9 min. dwell)
Avg. Depth on ambient cooler belt:	5"-6" deep (9-10 min dwell)

SYSTEM REFRIGERATED LOAD:

Product:	6,000 lb/hr x (90°F - 40°F) x .85	= 255,000 btuh
Box:	838 sq. ft. x (90°F - 30°F) x .068	= 3,411 btuh
Floor:	220 sq. ft. x (65°F - 30°F) x .75	= 9,900 btuh
Conveyor:	1/2 hp x 4250 btuh	= 4,250 btuh
Fans:	4 ea. x 7 1/2 bhp x 2950 btuh	= 88,500 btuh
Infiltration:		= 48,000 btuh
Misc. Loads, lighting, etc.:		= 4,000 btuh
Product moisture load:	255,000 btuh x .15	= 38,250 btuh
Summary		= 451,311 btuh
Safety factor 7%		= 31,213 btuh
TOTAL LOAD		482,903 btuh
		÷12000 btuh/TR=
		40.24 TR

A total 40TR at +22°F evaporator temperature is required.

Cloudy & Britton -Potato Cooler RC4-48 S/N #7127K




Manufacturer's Name Cloudy & Britton, Inc
Date of Manufacture Feb 19 - 1993
Serial Number 7127 K
Model Number PC4 - 48
Equipment Name Potato Cooler


Copeland Discus
052-1808-00
MODEL 8DP1-5000-TSK-205
SERIAL B 94H04570S
208/230V 3PH 60HZ
460V 3PH 60HZ
200V 3PH 50HZ
400V 3PH 50HZ
RLA
180
90
180
90
OIL

SPECIFICATIONS

AMBIENT AIR COOLER

ONE (1) CLOUDY & BRITTON, INC. model 414 "Ambient Air Cooler" supplied as follows:

ONE (1) Ambient air conveyor complete with 4 foot wide stainless steel 72-24-16 mesh, 2060 stainless steel side chain, stainless steel air plenum, and support structure. Includes UHMW filler wheels, sprockets, belt guide and pillowblock bearings. Drive will be AC electric close coupled to gear box. A stainless steel exhaust hood is provided. Unit complete with stainless steel belt washer manifold for intermittent or continuous belt washing and water atomizing manifolds to assist with evaporative cooling.

ONE (1) 5' x 14' stainless steel exhaust hood attached to ambient air conveyor frame.

ONE (1) Roof top supply air package complete with intake hood with bird screen, 24" AF fan with 20 hp ODP belt driven motor, prefilter rack with fan 30/30 filters, final filter rack with fan Riga-Flo 100 high efficiency type final filters. Weight 3300 lbs.

ONE (1) Elbow roof exhaust fans completed with discharge bird screen, unit curb, back draft damper and direct drive 10 hp ODP motor.

ONE (1) Exhaust air duct, maximum 20' vertical riser, provided in 30" round stainless steel spiral ducting. (Straight run to the roof is assumed.)

ONE (1) Supply air duct, maximum 24' vertical riser provided in 30" round stainless steel spiral ducting. (Ductwork is provided uninsulated and straight run to the roof is assumed.)

ONE (1) Rectangular to round stainless steel transition for supply air.

ONE (1) Rectangular supply air elbow into ambient air conveyor.

INLINE COOLING SYSTEM

ONE (1) CLOUDY & BRITTON, INC. Refrigerated Inline Conveyor Assembly, complete as follows:

ONE (1) Inline Conveyor Model 422 conveyor constructed of stainless steel, complete as follows:

ONE (1) Structural stainless steel support stand and base complete with adjustable legs insulated floor, 12 gauge stainless steel welded interior floor pan and 20 gauge exterior floor.

ONE (1) Kalt Manufactured insulated structural enclosure, assembled from mechanically cam-locked, and caulked panels. Panel walls and roof are constructed of 3.5" thick foam-in-place urethane with wood frames and stainless steel interior and exterior skin. Includes three (3) 2'-11" x 6'-6" high infitting cooler doors and three (3) 1'-6" wide x 5'-6" high infitting cooler doors and attachment screed; overall enclosure size is approximately 11' W x 22' L x 9' H. (Lighting and light switches are by others.)

TWO (2) All aluminum vertical face coils, complete with aluminum tubes, with 12 rows at 4 fpi spacing. Coil will be plate fin design and arranged for horizontal airflow, R22 DX coil feed and air defrost arrangement. The coil casing and drain pan are aluminum construction.

TWO (2) Sets of liquid line solenoid valves, and thermostatic expansion valves piped from coils to exterior of enclosure.

FOUR (4) 30" SWSI AF centrifugal aluminum plug fans, with stainless steel shaft extended to exterior bearing supports.

FOUR (4) 10 hp TEFC 1750 rpm 208V, 3 phase, 60 cycle motor mounted on above plug assembly. Complete with pulleys, belts, SS belt guard and drive bearings. (7.5 bhp operation per fan.)

ONE (1) 48" wide stainless steel belt type 72-24-16 mesh and 2060 stainless steel side chain.

ONE (1) Stainless steel belt carrier complete with leg supports.

ONE (1) 1/2 hp AC drive motor and gear box drive.

ONE (1) Set of 16 gauge stainless steel fan/coil plenums and isolation walls between coil, conveyor and fans.

ONE (1) Prewired UL Nema 4X stainless steel control panel with individual ambient air cooler and inline refrigerated cooler AC inverters for speed control. Includes non-fused main disconnect switch, control transformer, fan contractors for ambient air fans and inline conveyor fans, oil tight switches and pilot lights for each fan motor.

ONE (1) Stainless steel belt washer manifold installed on return belt at infeed end.

T-STAT

T-stat for temperature control.

JOBSITE INSTALLATION

Install skid mounted inline conveyor assembly, ambient air precooler, roof top units and associated duct.

INSTALLATION AND PARTS MANUAL

TWO (2) Bound copy of system installation manual, manufacturer's parts list and service instructions.

JOBSITE START-UP AND INSTRUCTION

TWO (2) Days on-site equipment start-up and instruction for designated operator(s).