AGENDA
CITY OF STURGEON BAY
INDUSTRIAL PARK DEVELOPMENT REVIEW TEAM
Thursday, December 2, 2021
12:00 Noon
Council Chambers, City Hall
421 Michigan Street

1. Roll call.

2. Adoption of agenda.

3. Consideration of: HVAC Project for Hatco Corp located at 208 E Deck Street.

4. Adjourn.

NOTE: DEVIATION FROM THE AGENDA ORDER SHOWN MAY OCCUR.

IPDRT Members:
Ald. Gary Nault
Bill Murrock
Sandy Hurley
Steve Jenkins, Alternate

11/24/21
2:45 p.m.
TM

Christopher Sullivan-Robinson
Planner/Zoning Administrator
421 Michigan Street
Sturgeon Bay, WI 54235

Phone: 920-746-2907
Fax: 920-746-2905
E-mail: csullivan-robinson@sturgeonbaywi.org
Website: www.sturgeonbaywi.org

MEMO

To: Industrial Park Development Review Team
From: Christopher Sullivan-Robinson
Date: November 24, 2021
Subject: HVAC Project Review for Hatco Corp.

Dave Obrien representing Hatco Corporation is requesting approval for an HVAC upgrade to the main building located at 208 E Deck Street. The project includes 12 new HVAC units to be added around the building. 11 of the 12 units will be 5.6' x 23' and located on a 32' x 16' concrete pad. The last unit is smaller at 7.5' x 12' on a 20' x 16' concrete pad. The submittal includes detailed information on the units and the proposed locations. The color will be the oyster color as shown on the last page.

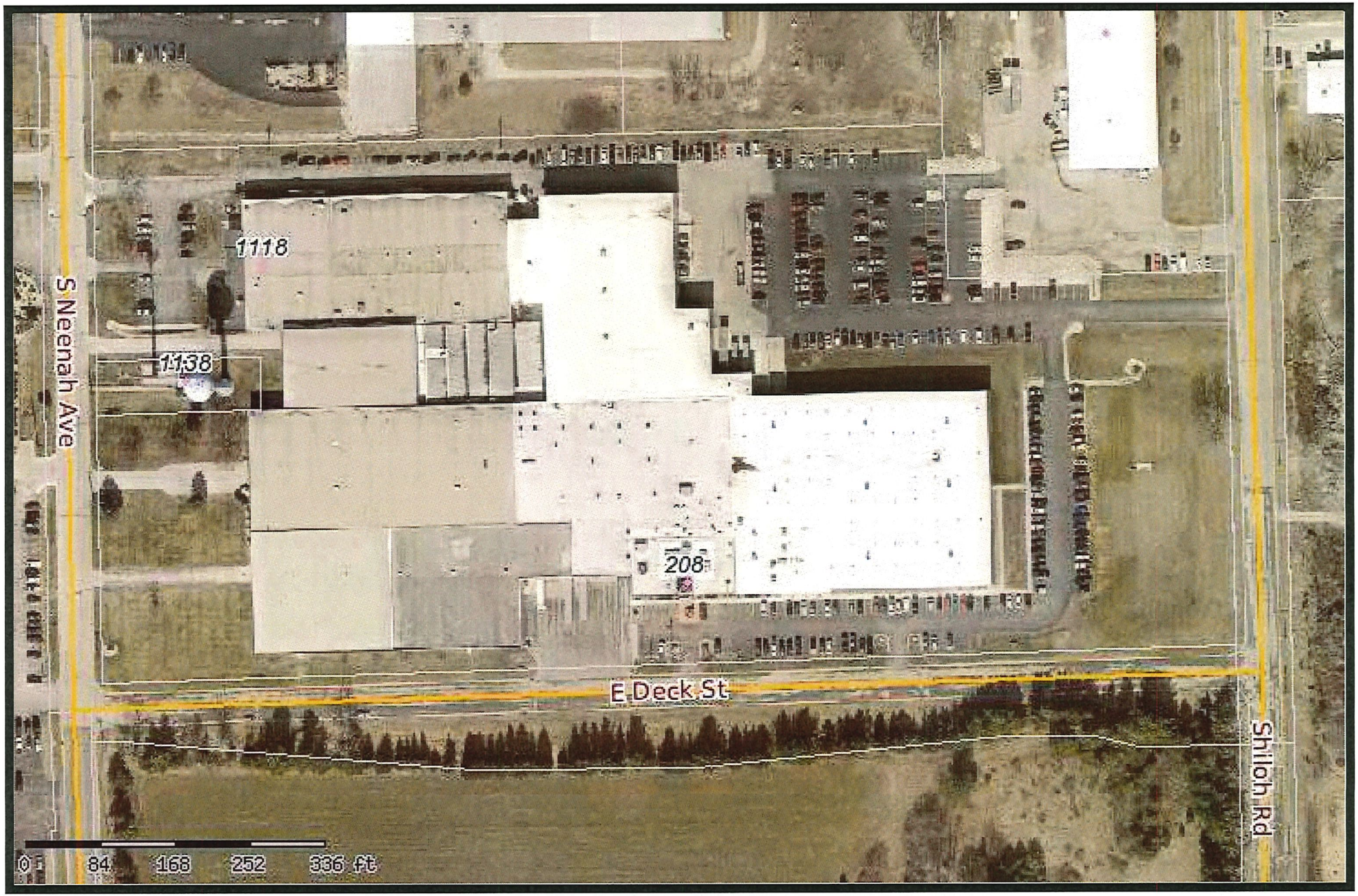
From a general design review standpoint, the City usually focuses on design elements that are visible from the street. Mainly the 4 units off of Deck Street will be visible. The proposed color appears to match the building. The committee can require screening around these units; however, there are minimum separation requirements for access and use. There are no design conflicts.

Map

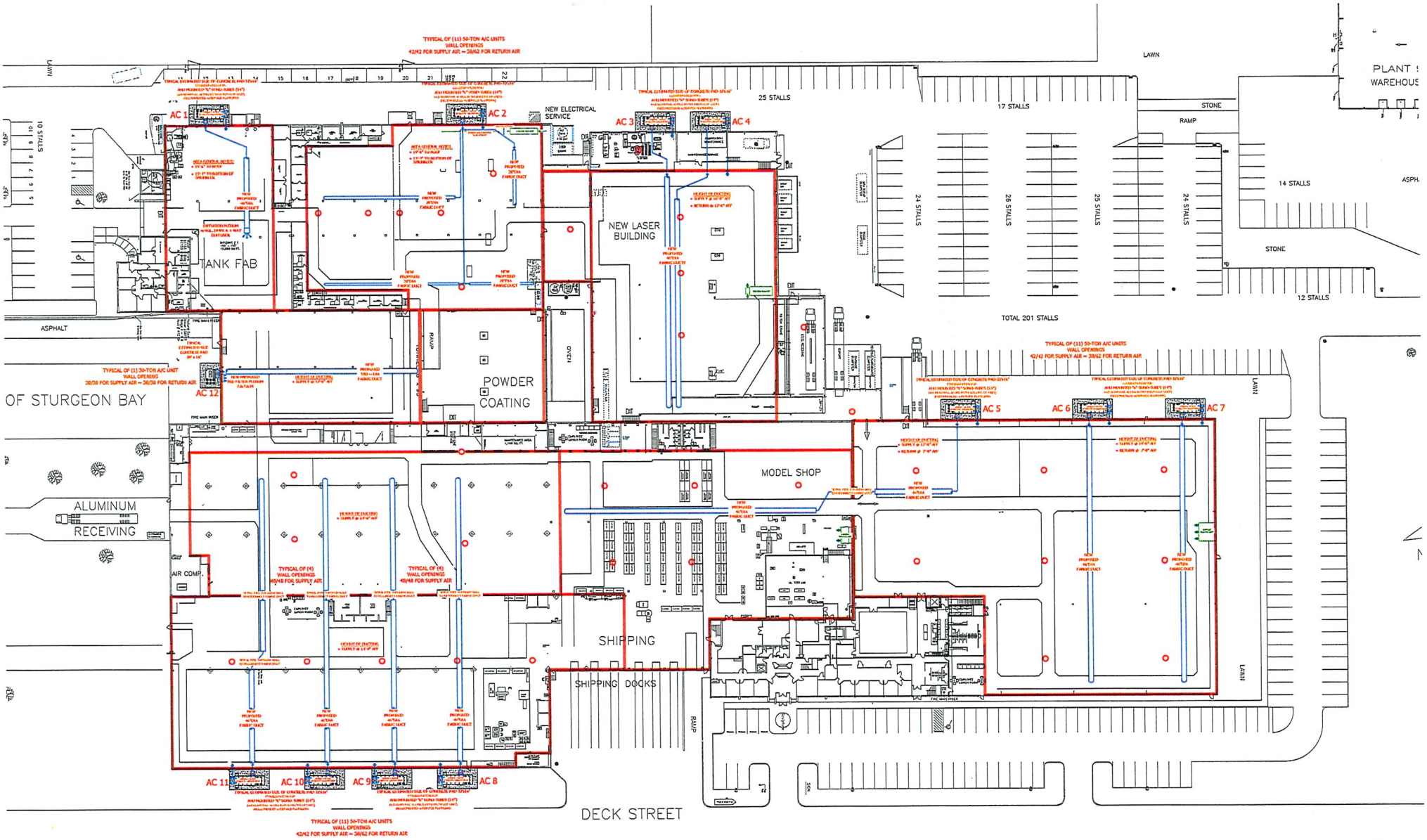
Printed 11/24/2021 courtesy of Door County Land Information Office

... from the Web Map of ...
(//www.co.door.wi.gov)

Door County, Wisconsin
... for all seasons!



Door County can not and does not make any representation regarding the accuracy or completeness, nor the error-free nature, of information depicted on this map. This information is provided to users "as is". The user of this information assumes any and all risks associated with this information. Door County makes no warranty or representation, either express or implied, as to the accuracy, completeness, or fitness for a particular purpose of this information. The Web Map is only a compilation of information and is NOT to be considered a legally recorded map or a legal land survey to be relied upon.



DATE:	8/8/2021
DRAWN BY:	AJS/LJS
SCALE:	1/32" = 1'-0"
SHEET NO.	M.1
	1 OF 1 SHEET

PROJECT:

HATCO CORPORATION

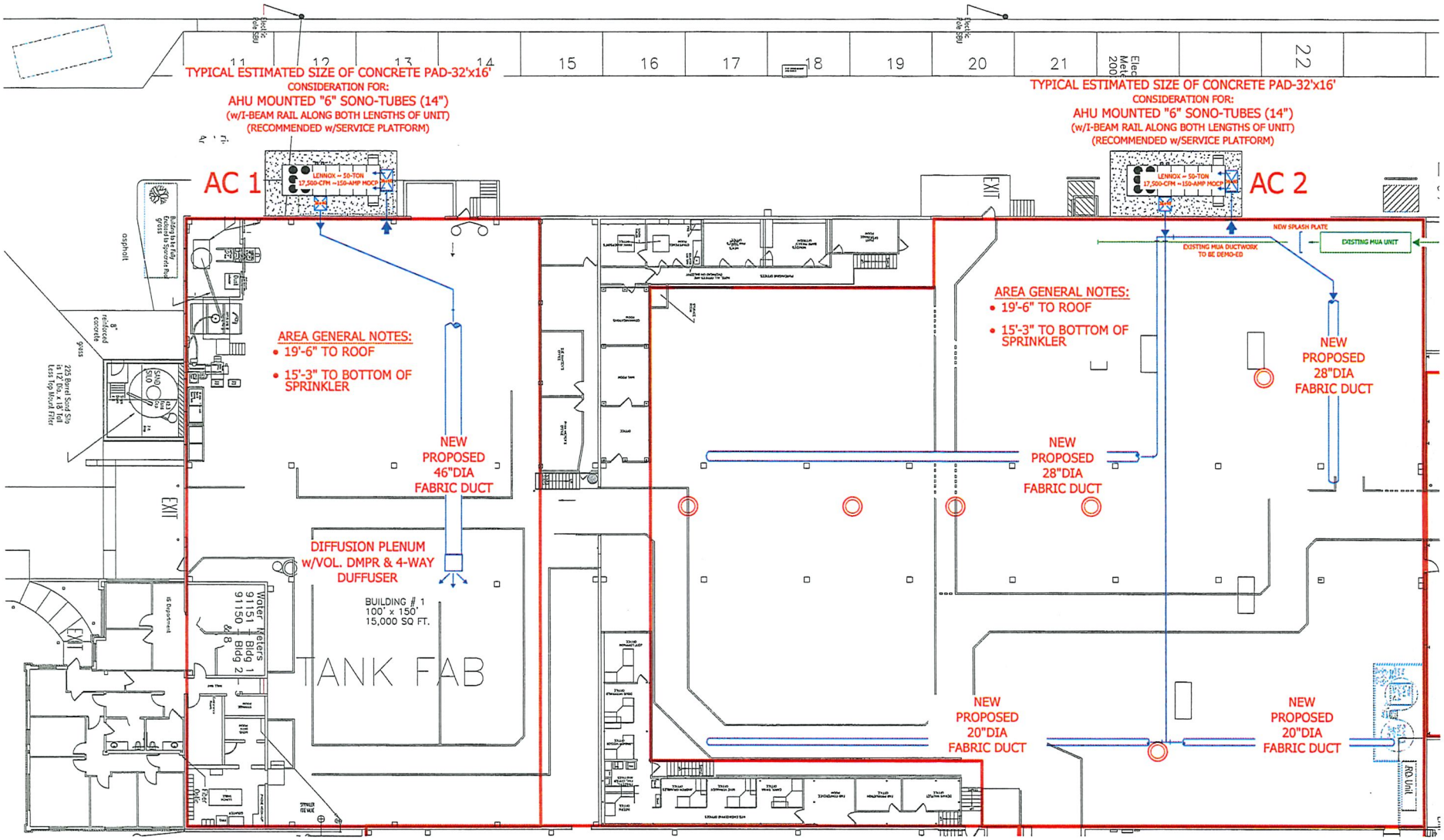
STURGEON BAY, WI

PROPOSED SPOT COOLING/DEHUMIDIFICATION PLAN

REVISIONS	BY:
08/08/2021	LJS
09/23/2021	LJS

SES GROUP, INC.
INNOVATIVE HVAC SOLUTIONS
COMMERCIAL, INDUSTRIAL, MECHANICAL SERVICES

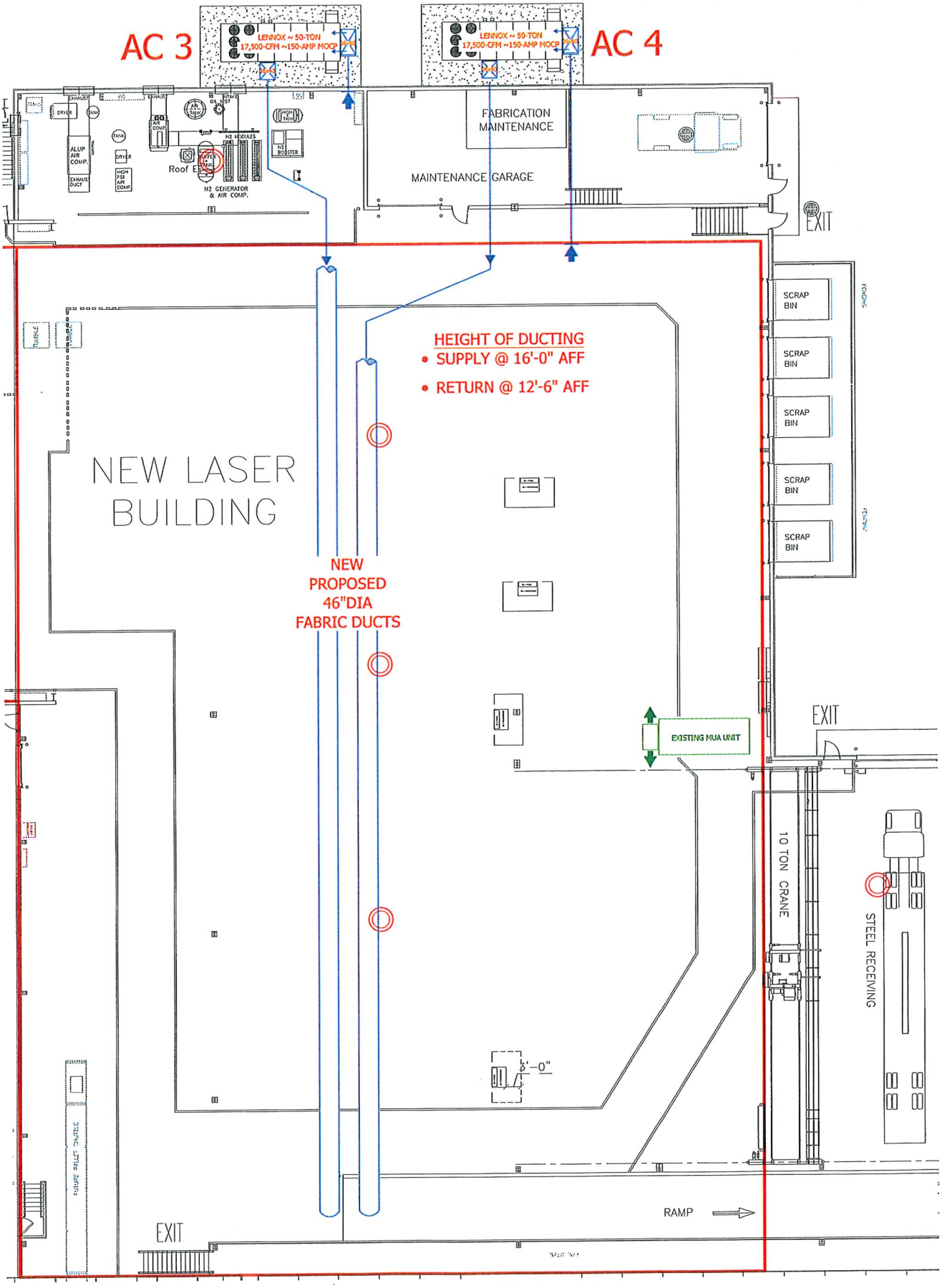
TYPICAL OF (11) 50-TON A/C UNITS
WALL OPENINGS
42/42 FOR SUPPLY AIR ~ 38/62 FOR RETURN AIR



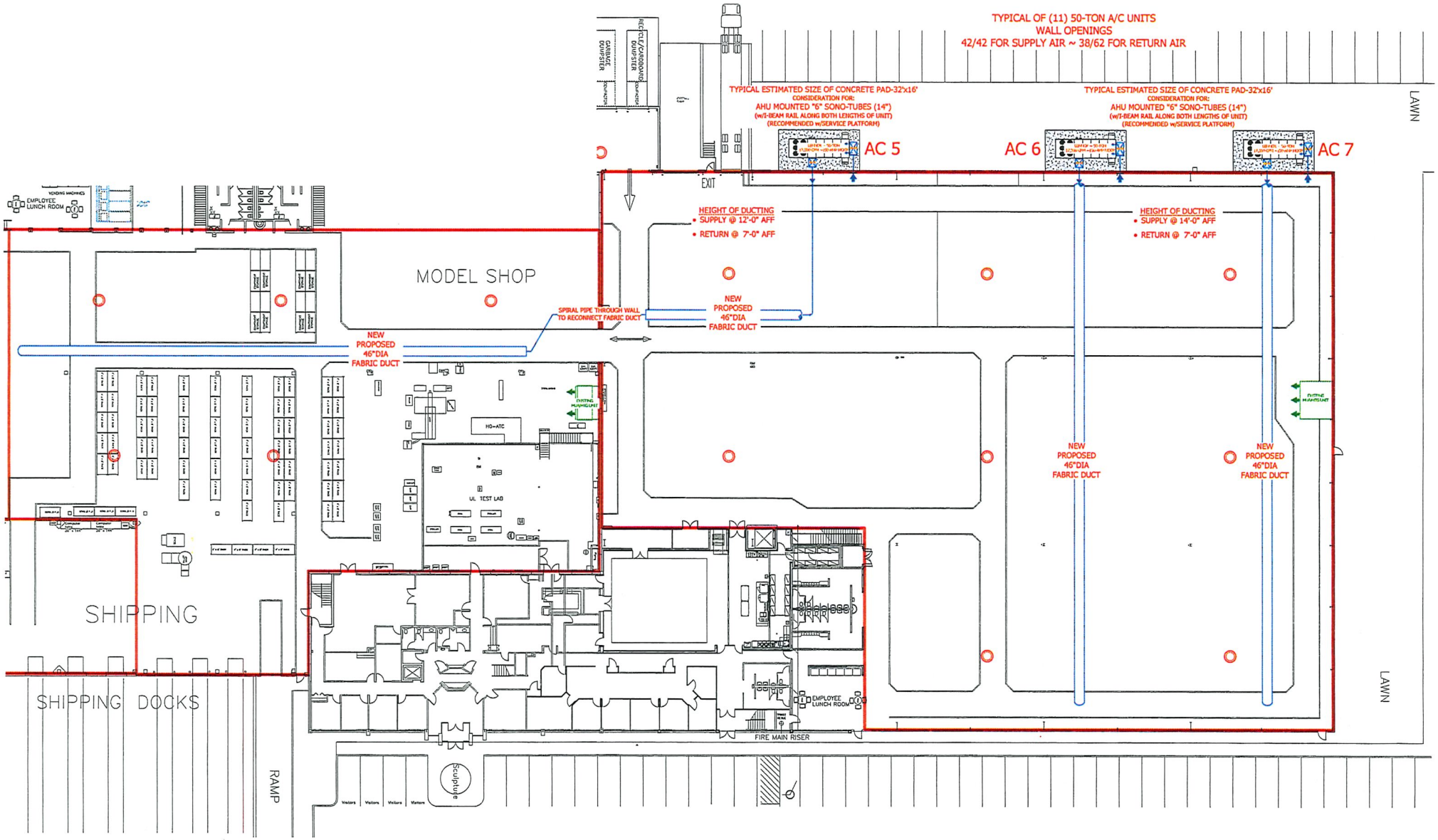
$\frac{3}{32}$" = 1'-0"

TYPICAL ESTIMATED SIZE OF CONCRETE PAD-32'x16'
CONSIDERATION FOR:
AHU MOUNTED "6" SONO-TUBES (14")
(w/I-BEAM RAIL ALONG BOTH LENGTHS OF UNIT)
(RECOMMENDED w/SERVICE PLATFORM)

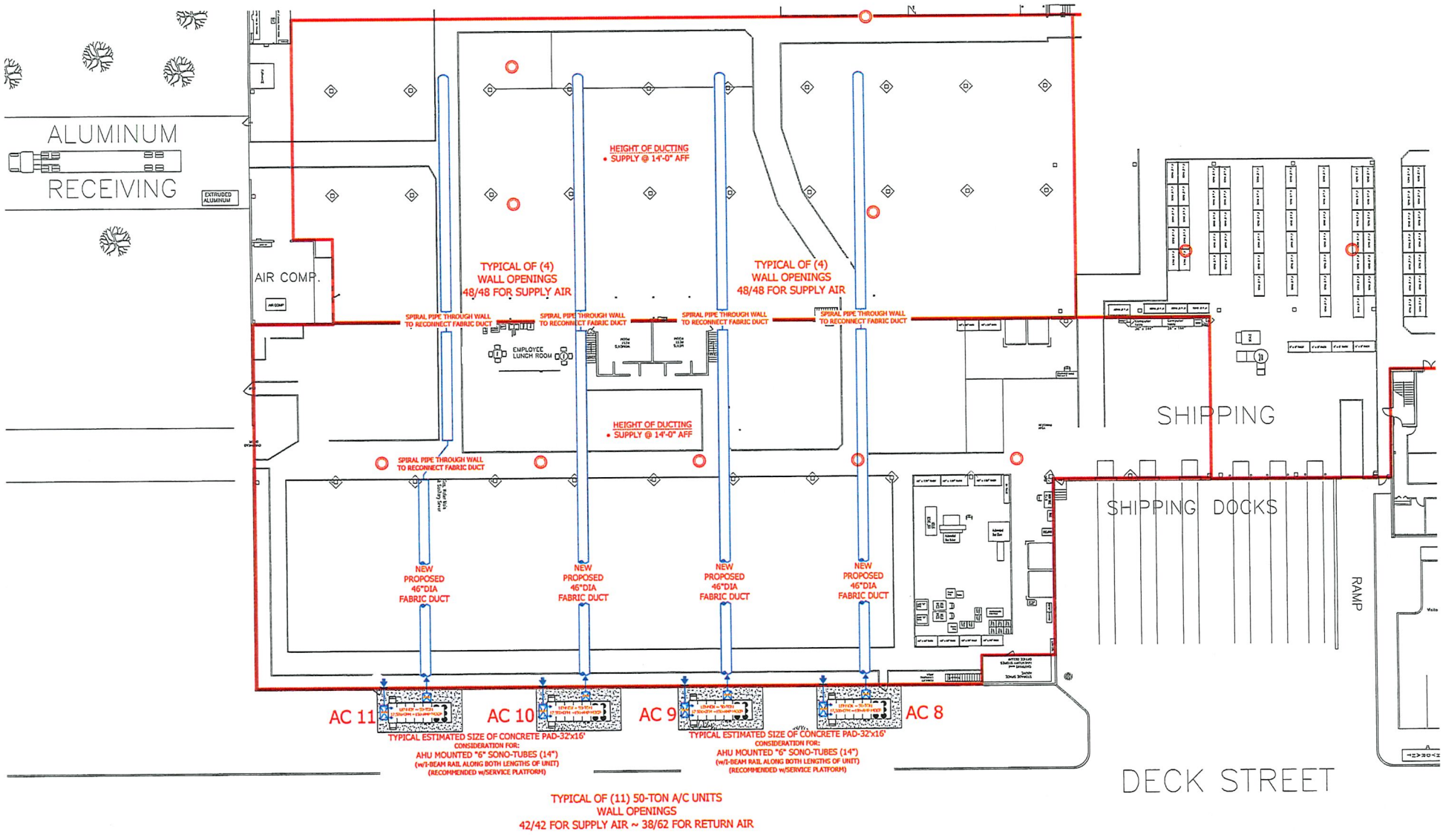
25 STALLS



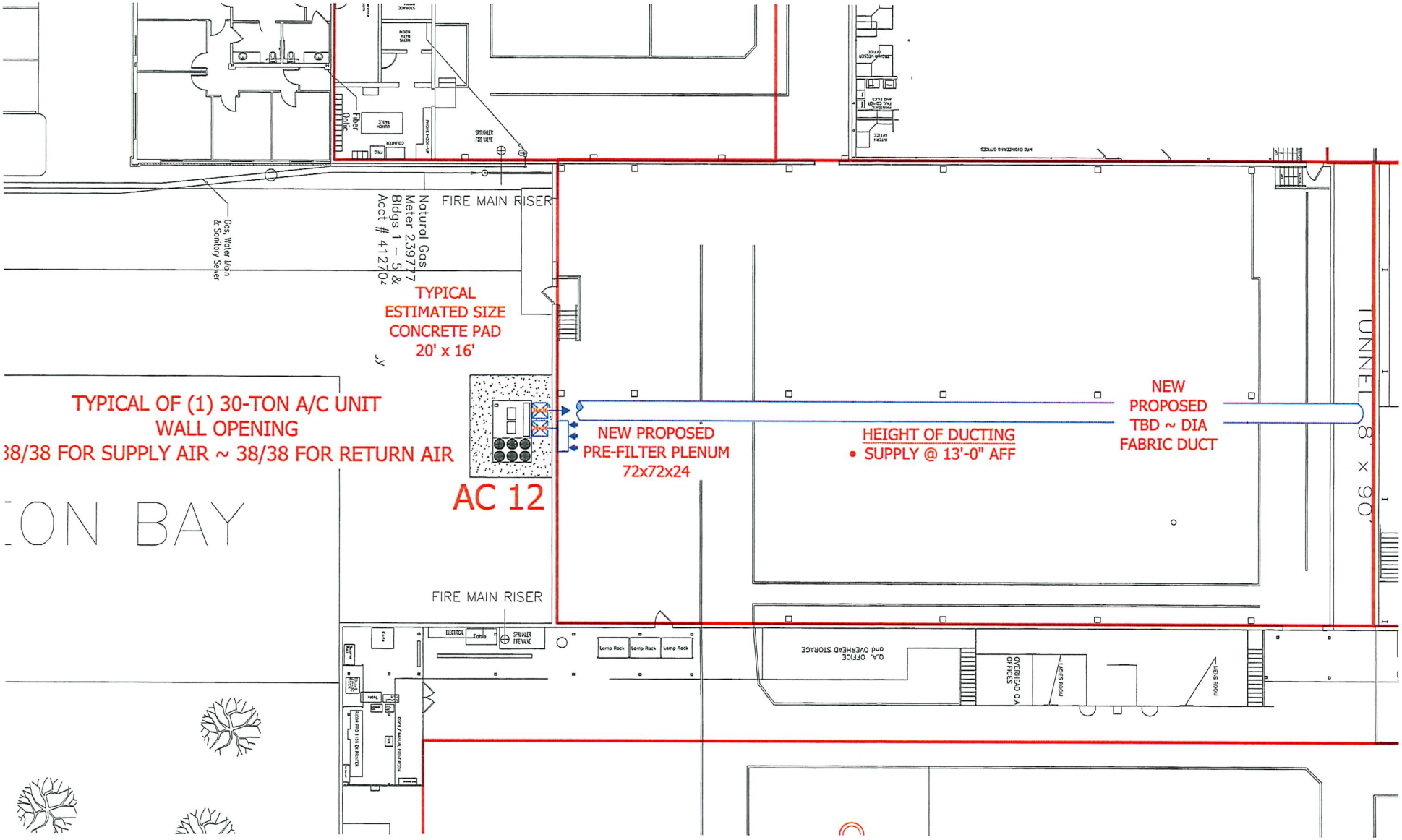
$\frac{1}{8}$" = 1'-0"


TYPICAL OF (11) 50-TON A/C UNITS
WALL OPENINGS
42/42 FOR SUPPLY AIR ~ 38/62 FOR RETURN AIR
TYPICAL ESTIMATED SIZE OF CONCRETE PAD-32'x16'
CONSIDERATION FOR:
AHU MOUNTED "6" SONO-TUBES (14")
(w/I-BEAM RAIL ALONG BOTH LENGTHS OF UNIT)
(RECOMMENDED w/SERVICE PLATFORM)
TYPICAL ESTIMATED SIZE OF CONCRETE PAD-32'x16'
CONSIDERATION FOR:
AHU MOUNTED "6" SONO-TUBES (14")
(w/I-BEAM RAIL ALONG BOTH LENGTHS OF UNIT)
(RECOMMENDED w/SERVICE PLATFORM)
AC 5
AC 6
AC 7
LAWN
EXIT
HEIGHT OF DUCTING
• SUPPLY @ 12'-0" AFF
• RETURN @ 7'-0" AFF
HEIGHT OF DUCTING
• SUPPLY @ 14'-0" AFF
• RETURN @ 7'-0" AFF
NEW PROPOSED 46"DIA FABRIC DUCT
SPIRAL PIPE THROUGH WALL TO RECONNECT FABRIC DUCT
NEW PROPOSED 46"DIA FABRIC DUCT
NEW PROPOSED 46"DIA FABRIC DUCT
NEW PROPOSED 46"DIA FABRIC DUCT
MODEL SHOP
EMPLOYEE LUNCH ROOM
VENDING MACHINES
HQ-ATC
UL TEST LAB
SHIPPING
SHIPPING DOCKS
RAMP
EMPLOYEE LUNCH ROOM
FIRE MAIN RISER
Sculpture
Visitors
Visitors
Visitors
Visitors
LAWN

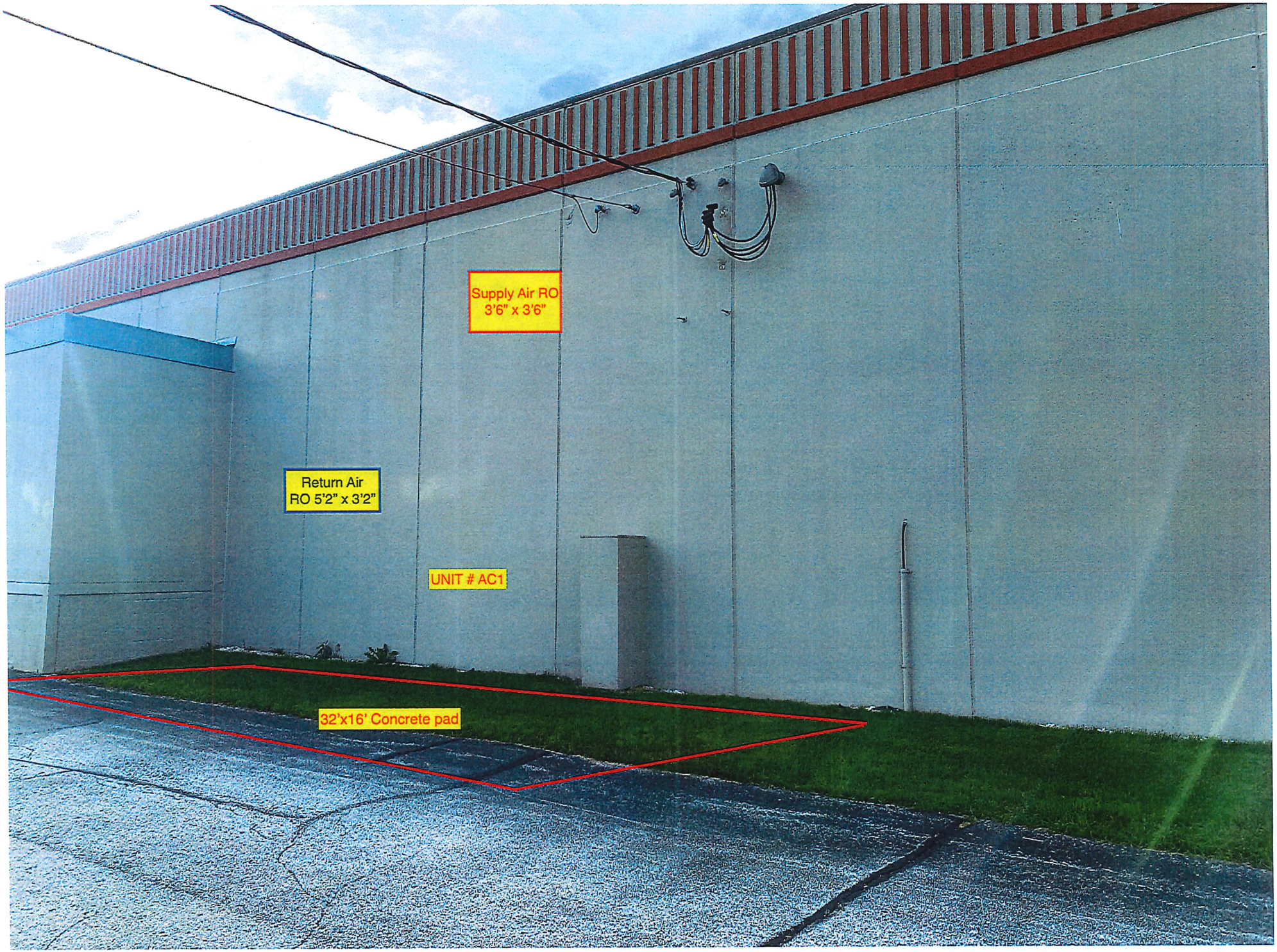
$\frac{1}{16}$" = 1'-0"

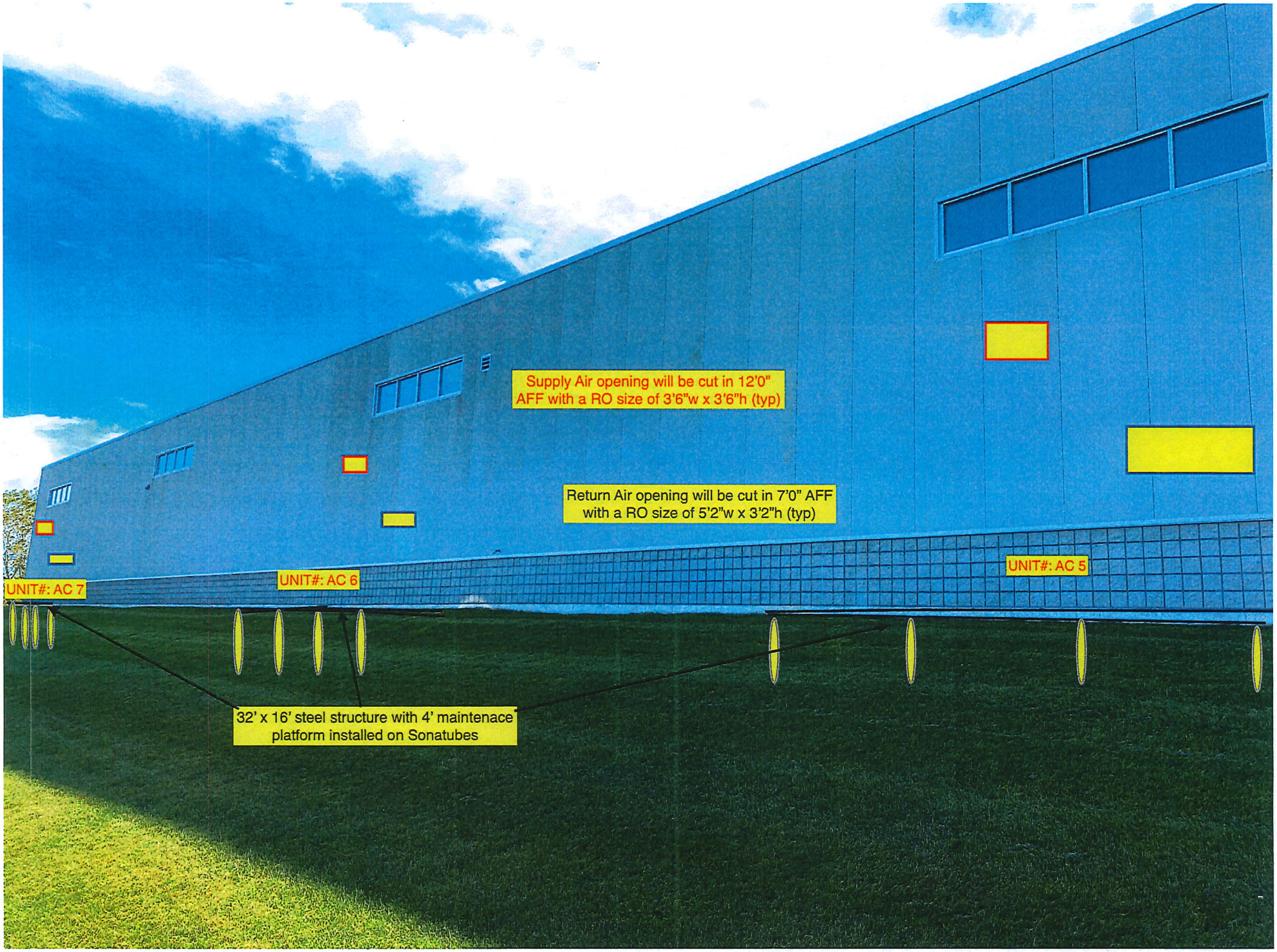

ALUMINUM
RECEIVING
EXTRUDED ALUMINUM
AIR COMP.
HEIGHT OF DUCTING
• SUPPLY @ 14'-0" AFF
TYPICAL OF (4)
WALL OPENINGS
48/48 FOR SUPPLY AIR
TYPICAL OF (4)
WALL OPENINGS
48/48 FOR SUPPLY AIR
SPIRAL PIPE THROUGH WALL
TO RECONNECT FABRIC DUCT
EMPLOYEE
LUNCH ROOM
HEIGHT OF DUCTING
• SUPPLY @ 14'-0" AFF
SHIPPING
SHIPPING DOCKS
RAMP
NEW
PROPOSED
46"DIA
FABRIC DUCT
AC 11
AC 10
AC 9
AC 8
TYPICAL ESTIMATED SIZE OF CONCRETE PAD-32'x16'
CONSIDERATION FOR:
AHU MOUNTED "6" SONO-TUBES (14")
(w/I-BEAM RAIL ALONG BOTH LENGTHS OF UNIT)
(RECOMMENDED w/SERVICE PLATFORM)
DECK STREET
TYPICAL OF (11) 50-TON A/C UNITS
WALL OPENINGS
42/42 FOR SUPPLY AIR ~ 38/62 FOR RETURN AIR

$\frac{1}{16}$" = 1'-0"

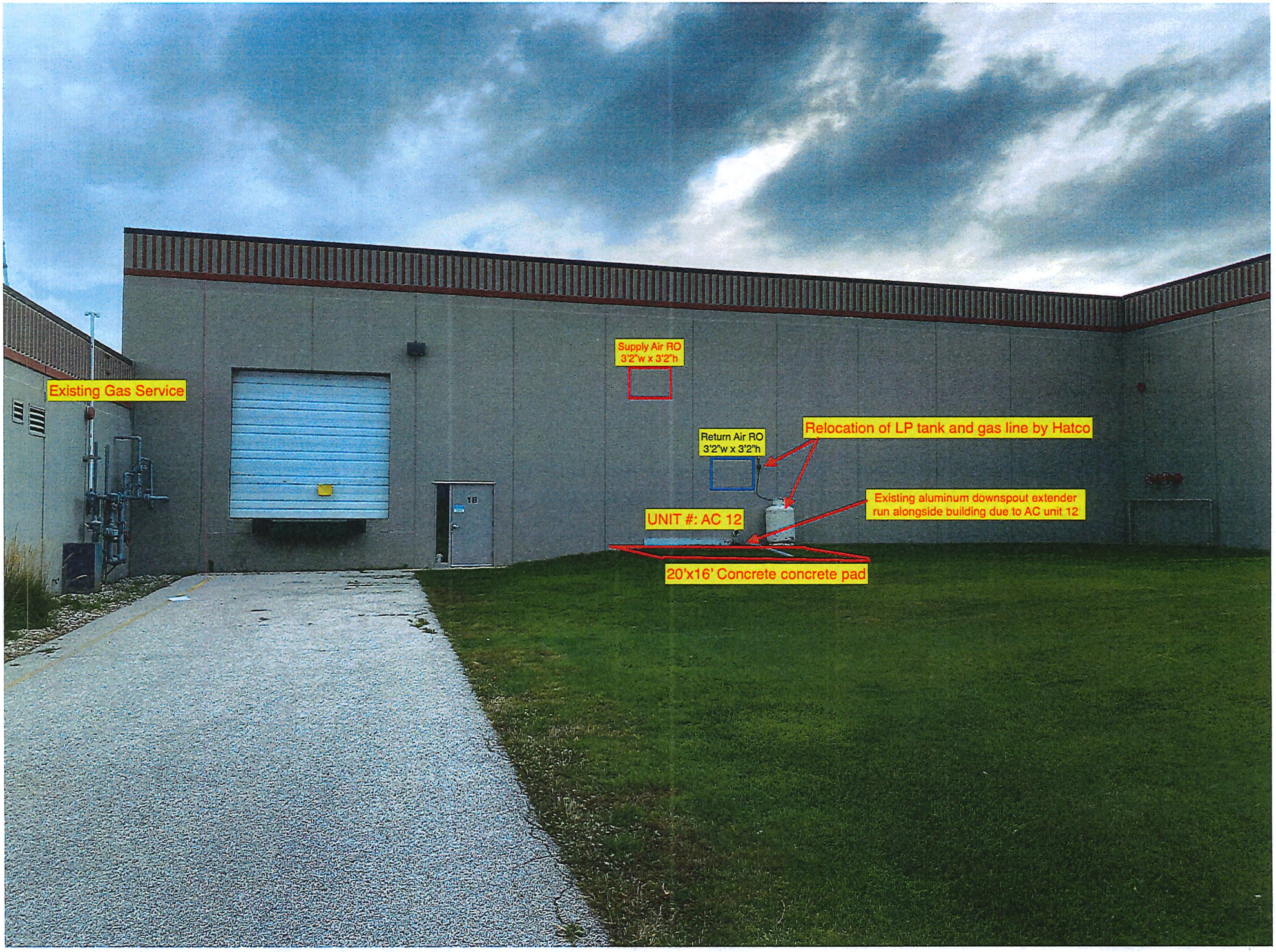

FIRE MAIN RISER
Natural Gas Meter 239777 Bldgs 1 – 5 & Acct # 412704
Cos. Water Main & Sanitary Sewer
TYPICAL ESTIMATED SIZE CONCRETE PAD 20' x 16'
TYPICAL OF (1) 30-TON A/C UNIT WALL OPENING
38/38 FOR SUPPLY AIR ~ 38/38 FOR RETURN AIR
AC 12
NEW PROPOSED PRE-FILTER PLENUM 72x72x24
HEIGHT OF DUCTING
• SUPPLY @ 13'-0" AFF
NEW PROPOSED TBD ~ DIA FABRIC DUCT
TUNNEL 8' x 90'
ON BAY
FIRE MAIN RISER
Lamp Rack
Lamp Rack
Lamp Rack
O.A. OFFICE and OVERHEAD STORAGE
OVERHEAD O.A. OFFICES
LADIES ROOM
MEN'S ROOM

$\frac{1}{8}$" = 1'-0"


Supply Air RO
3'6" x 3'6"
Return Air
RO 5'2" x 3'2"
UNIT # AC1
32'x16' Concrete pad


Supply Air opening will be cut in 12'0" AFF with a RO size of 3'6"w x 3'6"h (typ)
Return Air opening will be cut in 7'0" AFF with a RO size of 5'2"w x 3'2"h (typ)
UNIT#: AC 7
UNIT#: AC 6
UNIT#: AC 5
32' x 16' steel structure with 4' maintenace platform installed on Sonatubes

Supply Air opening will be cut in 14'0" AFF with a RO size of 3'6"w x 3'6" h (typ)
Return Air opening will be cut in 1'0" AFF with a RO size of 5'2"w x 3'2" h (typ)
UNIT #: AC 11
UNIT #: AC 10
UNIT #: AC 9
UNIT #: AC 8
32'x16' Concrete pad (typ)


Existing Gas Service
Supply Air RO
3'2"w x 3'2"h
Return Air RO
3'2"w x 3'2"h
Relocation of LP tank and gas line by Hatco
Existing aluminum downspout extender
run alongside building due to AC unit 12
UNIT #: AC 12
20'x16' Concrete concrete pad

Project Submittal

Project Name: Hatco Corp
Project Number: 156950
Project Altitude:
Project Location:
Sturgeon Bay, Wisconsin US

Customer: SES Grp Inc

Date: 8/3/2021
Quote: 108947
Roof Top Units: 24
Split Systems: 0

Table of Contents

Tag		Qty	Model	Description
50 Ton E/E RTU		11	LCH600S4M	LCH600S4M-G 50T CONF E=10.0
30 Ton E/E RTU		1	LCH360H4M	LCH360H4M-G 30T CONF E=10.8
50 Ton G/E RTU	Alt #1	11	LGH600S4M	LGH600S4M-G 50T CONF E=9.8
30 Ton G/E RTU	Alt #1	1	LGH360H4M	LGH360H4M-G 30T CONF E=10.6
Miscellaneous Items				

Project Submittal

Tag: 50 Ton E/E RTU
Model: LCH600S4M - LCH600S4M-G 50T CONF E=10.0

UNIT OVERVIEW

Voltage	IEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
460V 3Ph 60Hz	13.5 10	134 / 150	621.1 / 428.6	550.0 / 357.5	20,000	1.00 / 2.37	80.0 / 67.0	59.3 / 56.7

COOLING

Cooling Performance		Temperatures (DB/WB °F)		
Gross Cooling (Ttl/Sens)	621.1 / 428.6 MBH	Ambient	95.0	
Net Cooling (Ttl/Sens)	550.0 / 357.5 MBH	Entering	80.0	67.0
Coil Moisture Removal	181.47 lb/hr	Leaving – (Coil)	59.3	56.7
System Moisture Removal	181.47 lb/hr	Leaving – (Unit)	62.8	58.0

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	598.0 / 565.0 MBH	Cooling Stages	4	Type	R-410A	Qty	1
ARI Power	57,500 W	Compressor Qty	4	Charge		Size	1 in.
		Compressor RLA	74.4 amp			Pipe Thread	npt

HUMIDITROL - HOT GAS REHEAT

Humiditrol Dehumidification Performance		Temperatures (DB/WB °F)		
Gross Cooling - Stage 1(Ttl/Sens)	92.1 / 40.5 MBH	Ambient	95.0	
Gross Cooling - Stage 2 (Ttl/Sens)	503.5 / 302.1 MBH	Entering	80.0	67.0
Moisture Removal - Stage 1	48.6 lb/hr	Leaving – (Stage 1)	78.0	65.6
Moisture Removal - Stage 2	189.8 lb/hr	Leaving – (Stage 2)	65.5	58.9

SUPPLY FAN

Air Flow (cfm)		Supply Fan		Air Resistance (in.WC)	
Supply	20,000	Nominal Power	30.00 hp	Total	2.37
Outdoor	2,000	Required Power	25.83 hp	Ext Supply	1.00
		Drive Type	MSAV Belt Drive		
		RPM Range	1,075 - 1,285 rpm		
		Required RPM	1,094 rpm		

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)

Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.70	0.11		0.26			0.30	

ELECTRICAL

Voltage	460V 3Ph / 60Hz	Compressor RLA	74.4 amp
MCA	134 amp	Cooling FLA Total	133.8 amp
MOCP	150 amp	Condenser FLA	14.4 amp
Condenser Power	5000 W	Supply Fan FLA	45.0 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA

Cabinet	286.00 in. x 90.00 in. x 68.00 in.	Total Weight	7,298 lb
Horizontal Supply	40.0 in. x 36.0 in.	Base Unit Net Weight	6,550 lb
Horizontal Return	23.8 in. x 69.2 in.	OAS/Econ Weight	188 lb
Filters	**(11)** 25.0 in. x 16.0 in. x 2.0 in.	Humiditrol Weight	150 lb
Sound Rating	91 dBA	Supply Fan Motor Weight	360 lb

Project Submittal

Tag: 50 Ton E/E RTU

Factory Installed Options

High Performance Economizer Upgrade Factory Installed
Single Sensible Economizer
Standard Cap, Std Packaging
Unit Orientation Horizontal
Supply Fan: Multi-Stage Air Volume
440V/460V/480V 3Phase
150Amp Disconnect Factory Installed
Supply Motor - 30 Hp Std Eff w/MSAV
Supply Drive Kit 13 (1075-1285 RPM)
Barometric Relief Damper (Fac)
Condenser Louvered Panel Factory Installed
GFCI Factory Installed/Field Wired
Phase Monitor Factory Installed
Prodigy M3 BACnet Module (Fac)
Return Air Smoke Detector Factory Installed
Humiditrol Factory Installed
2" MERV4 - Std. Filter Factory Installed

Field Installed Accessories

Catalog Number	Qty	Description
17M50	11	Humidity Sensor Kit Field Installed

Product Features

Cabinet

Hinged Access Panels
Durable Outdoor Enamel Paint Finish
Totally Enclosed Outdoor Fan Motor
PVC Coated Fan Guard
Corrosion-Resistant Removable, Reversible Drain Pan
Isolated Compressor Compartment

Cooling System

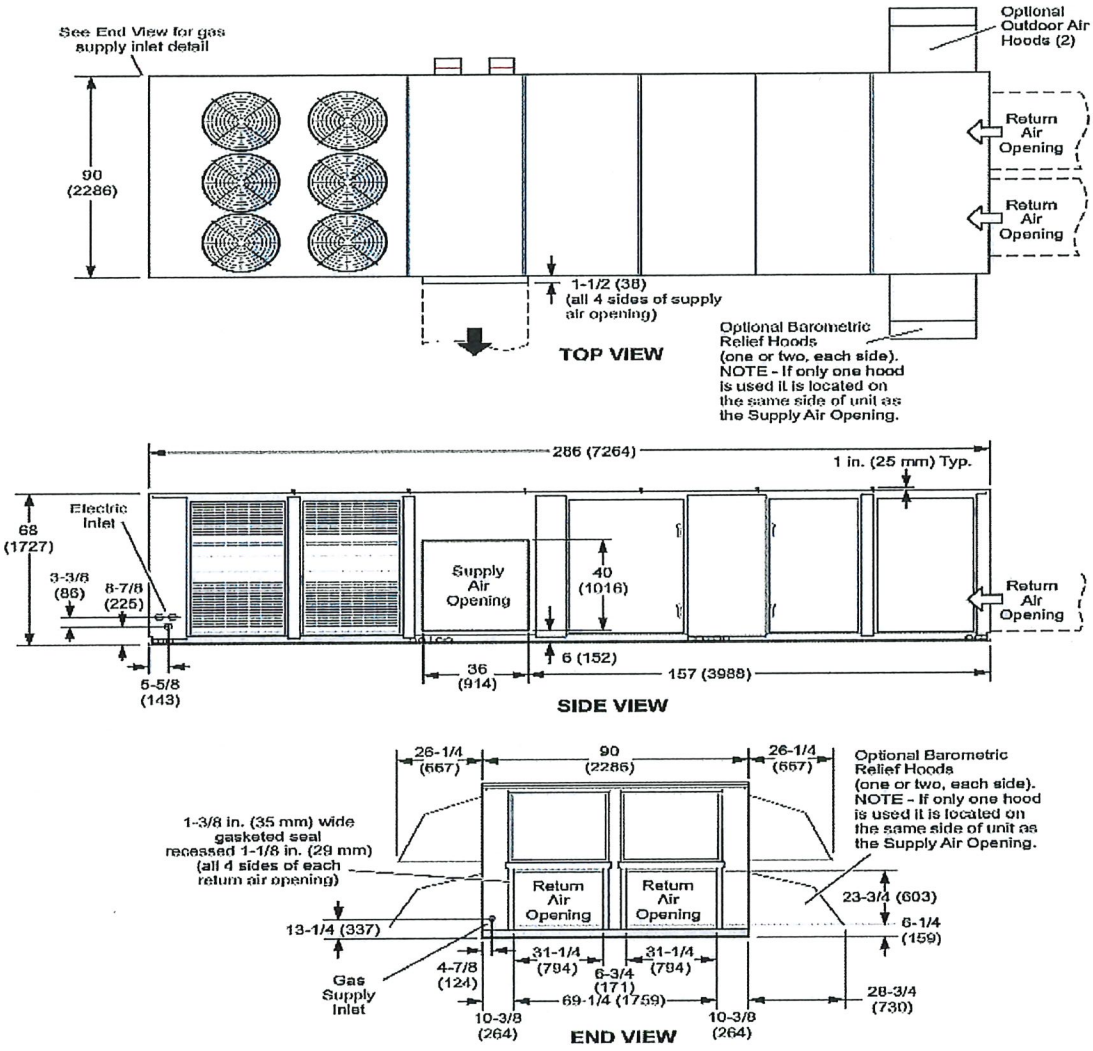
Scroll Compressor
Expansion Valves
High Capacity Driers
Crankcase Heater
System can operate from 0°F to 125°F without any additional controls
Pre-charged Refrigeration System
Timed Off Control
Internal Pressure Relief Valve
Building Automation Integrated Control - Up to 4 Stages of Cooling
Thermostat Control – 4 Stages of Cooling
Humiditrol - Hot Gas Reheat Dehumidification System

Control System

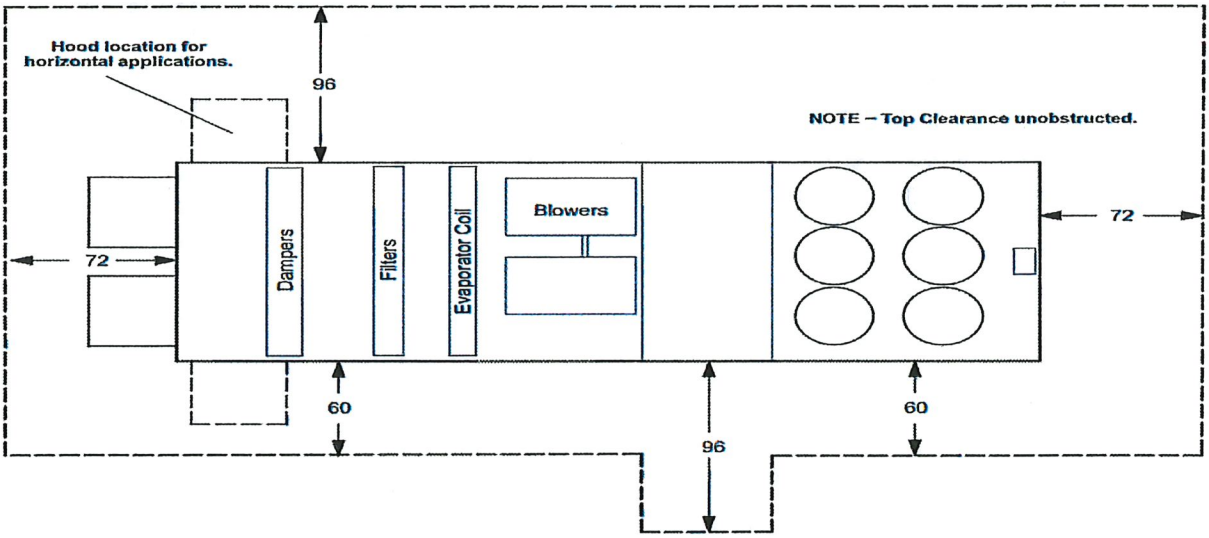
Prodigy 2.0 Control System
Auto reset high & low pressure switch with strike 3 lockout feature in Prodigy unit controller
Fan and Limit Controls
Overload Protection

Warranty

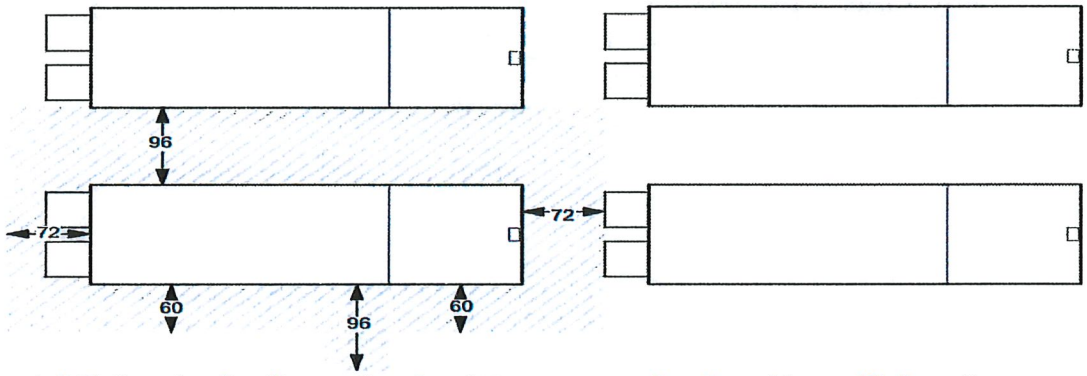
Limited warranty on compressor of 5 years
Limited warranty on Prodigy Unit Controller of 3 years
Limited warranty on High Performance Economizer of 5 years
Limited warranty on all other components of 1 year
See Limited Warranty Certificate included with unit for details


See End View for gas supply inlet detail
Optional Outdoor Air Hoods (2)
90 (2286)
Return Air Opening
Return Air Opening
1-1/2 (38) (all 4 sides of supply air opening)
TOP VIEW
Optional Barometric Relief Hoods (one or two, each side). NOTE - If only one hood is used it is located on the same side of unit as the Supply Air Opening.
286 (7264)
1 in. (25 mm) Typ.
Electric Inlet
68 (1727)
3-3/8 (86)
8-7/8 (225)
Supply Air Opening
40 (1016)
Return Air Opening
6 (152)
36 (914)
157 (3988)
5-5/8 (143)
SIDE VIEW
26-1/4 (667)
90 (2286)
26-1/4 (667)
Optional Barometric Relief Hoods (one or two, each side). NOTE - If only one hood is used it is located on the same side of unit as the Supply Air Opening.
1-3/8 in. (35 mm) wide gasketed seal recessed 1-1/8 in. (29 mm) (all 4 sides of each return air opening)
Return Air Opening
Return Air Opening
23-3/4 (603)
13-1/4 (337)
6-1/4 (159)
31-1/4 (794)
31-1/4 (794)
4-7/8 (124)
6-3/4 (171)
Gas Supply Inlet
69-1/4 (1759)
28-3/4 (730)
10-3/8 (264)
10-3/8 (264)
END VIEW

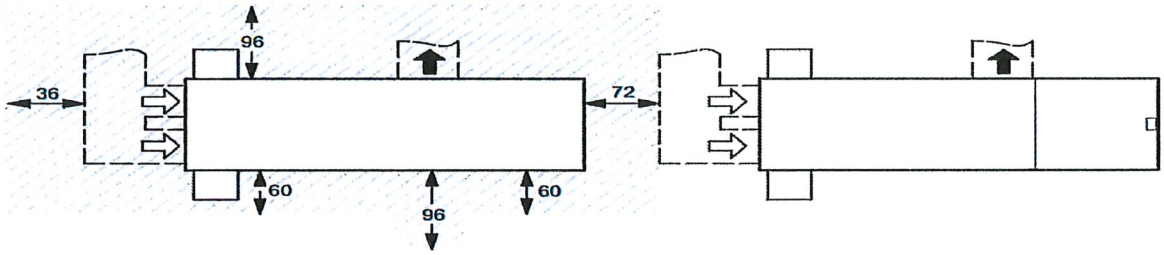
INSTALLATION/SERVICE CLEARANCES



Vertical Airflow Applications – Service clearances can be shared by multiple units.



Horizontal Airflow Applications – Service dearances can be shared by multiple units.



Project Submittal

Tag: 30 Ton E/E RTU
Model: LCH360H4M - LCH360H4M-G 30T CONF E=10.8

UNIT OVERVIEW

Voltage	IEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
460V 3Ph 60Hz	14.4 10.8	75 / 80	379.0 / 284.2	355.2 / 260.4	12,000	1.00 / 1.63	80.0 / 67.0	57.1 / 56.5

COOLING

Cooling Performance		Temperatures (DB/WB °F)		
Gross Cooling (Ttl/Sens)	379.0 / 284.2 MBH	Ambient	95.0	
Net Cooling (Ttl/Sens)	355.2 / 260.4 MBH	Entering	80.0	67.0
Coil Moisture Removal	89.30 lb/hr	Leaving – (Coil)	57.1	56.5
System Moisture Removal	89.30 lb/hr	Leaving – (Unit)	59.0	57.2

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	370.0 / 350.0 MBH	Cooling Stages	4	Type	R-410A	Qty	1
ARI Power	32,400 W	Compressor Qty	4	Charge	32 LBS. 0 OZ.	Size	1 in.
		Compressor RLA	48.8 amp			Pipe Thread	npt

HUMIDITROL - HOT GAS REHEAT

Humiditrol Dehumidification Performance		Temperatures (DB/WB °F)		
Gross Cooling - Stage 1(Ttl/Sens)	50.2 / 15.1 MBH	Ambient	95.0	
Gross Cooling - Stage 2 (Ttl/Sens)	209.9 / 125.9 MBH	Entering	80.0	67.0
Moisture Removal - Stage 1	33.1 lb/hr	Leaving – (Stage 1)	78.7	65.7
Moisture Removal - Stage 2	79.1 lb/hr	Leaving – (Stage 2)	69.9	61.5

SUPPLY FAN

Air Flow (cfm)		Supply Fan		Air Resistance (in.WC)	
Supply	12,000	Nominal Power	10.00 hp	Total	1.63
Outdoor	1,200	Required Power	8.38 hp	Ext Supply	1.00
		Drive Type	MSAV Belt Drive		
		RPM Range	870 - 1,045 rpm		
		Required RPM	935 rpm		

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)

Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.20			0.10		0.33		

ELECTRICAL

Voltage	460V 3Ph / 60Hz	Compressor RLA	48.8 amp
MCA	75 amp	Cooling FLA Total	70.6 amp
MOCP	80 amp	Condenser FLA	7.8 amp
Condenser Power	2500 W	Supply Fan FLA	14.0 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA

Cabinet	145.00 in. x 90.75 in. x 65.00 in.	Total Weight	3,640 lb
Horizontal Supply	18.0 in. x 75.0 in.	Base Unit Net Weight	2,997 lb
Horizontal Return	15.0 in. x 78.5 in.	OAS/Econ Weight	138 lb
Filters	**(12)** 20.0 in. x 20.0 in. x 2.0 in.	Humiditrol Weight	0 lb
Sound Rating	95 dBA	Curb Weight	505 lb

Project Submittal

Tag: 30 Ton E/E RTU

Factory Installed Options

High Performance Economizer Upgrade Factory Installed
Single Sensible Economizer
Standard Cap, Std Packaging
Unit Orientation Horizontal
Supply Fan: Multi-Stage Air Volume
440V/460V/480V 3Phase
150Amp Disconnect Factory Installed
Supply Motor - 10 Hp Std Eff w/MSAV
Supply Drive Kit 2 (870-1045 RPM)
GFCI Factory Installed/Field Wired
Phase Monitor Factory Installed
Prodigy M3 BACnet Module (Fac)
Return Air Smoke Detector Factory Installed
Environ Coil System Factory Installed
Humiditrol Factory Installed
2" MERV4 - Std. Filter Factory Installed

Field Installed Accessories

Catalog Number	Qty	Description
33K78	1	Horizontal Barometric Relief Dampers Field Installed
11T90	1	30" HZ - Slab Applications Field Installed
38K48	1	Horiz Return Air Panel Kit Field Installed
73K33	1	Insulation Kit for 30" Curb Field Installed
17M50	1	Humidity Sensor Kit Field Installed

Product Features

Cabinet

Hinged Access Panels
Durable Outdoor Enamel Paint Finish
Totally Enclosed Outdoor Fan Motor
PVC Coated Fan Guard
Corrosion-Resistant Removable, Reversible Drain Pan
Isolated Compressor Compartment

Cooling System

Scroll Compressor
Expansion Valves
High Capacity Driers
Crankcase Heater
System can operate from 0°F to 125°F without any additional controls
Pre-charged Refrigeration System
Timed Off Control
Internal Pressure Relief Valve
Building Automation Integrated Control - Up to 4 Stages of Cooling
Thermostat Control – 4 Stages of Cooling
Humiditrol - Hot Gas Reheat Dehumidification System

Control System

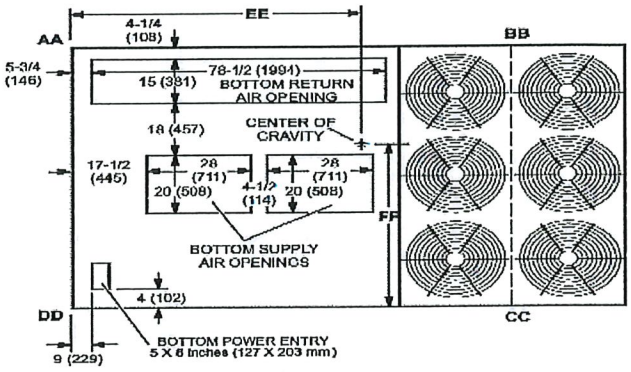
Prodigy 2.0 Control System
Auto reset high & low pressure switch with strike 3 lockout feature in Prodigy unit controller
Fan and Limit Controls
Overload Protection

Warranty

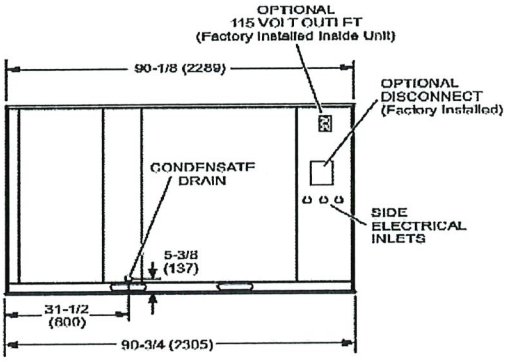
Limited warranty on compressor of 5 years
Limited warranty on Environ Coil System of 3 years
Limited warranty on Prodigy Unit Controller of 3 years
Limited warranty on High Performance Economizer of 5 years
Limited warranty on all other components of 1 year
See Limited Warranty Certificate included with unit for details

Project Submittal

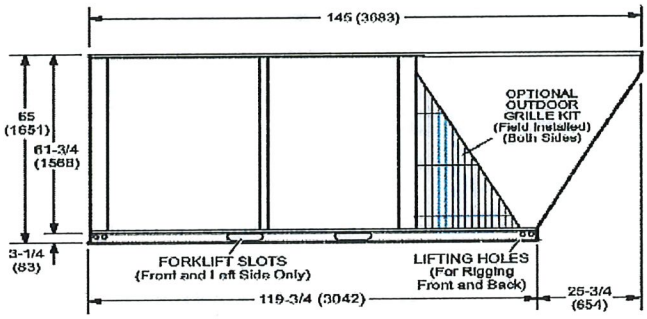
Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
610	693	612	696	880	1,001	895	1,018	60.00	60.00	37.00	37.00



TOP VIEW

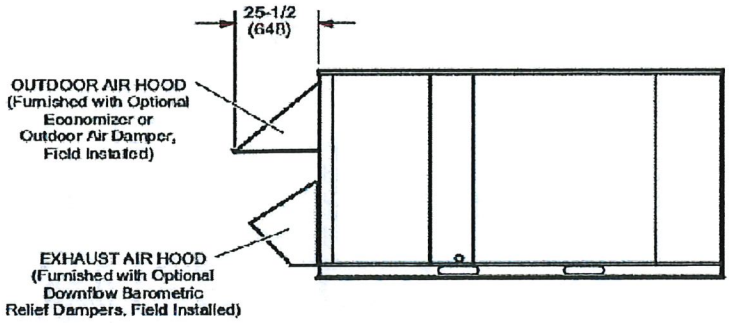


END VIEW

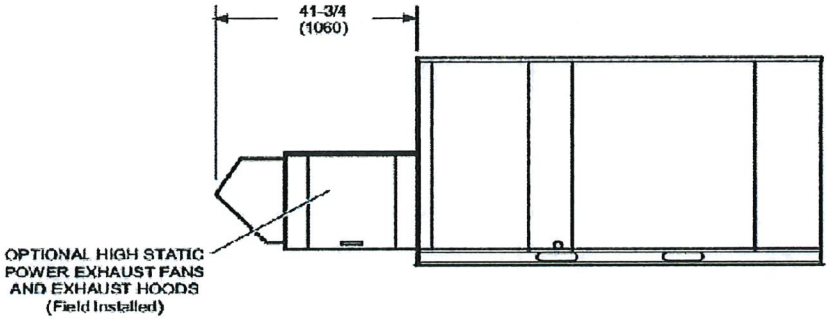


SIDE VIEW

OUTDOOR AIR HOOD DETAIL

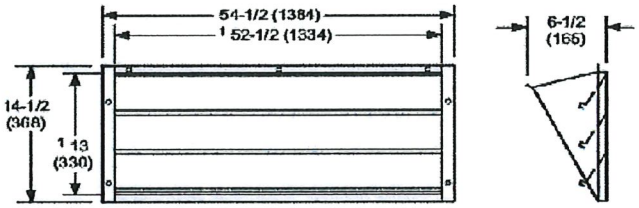


OPTIONAL HIGH STATIC POWER EXHAUST FANS DETAIL



OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD

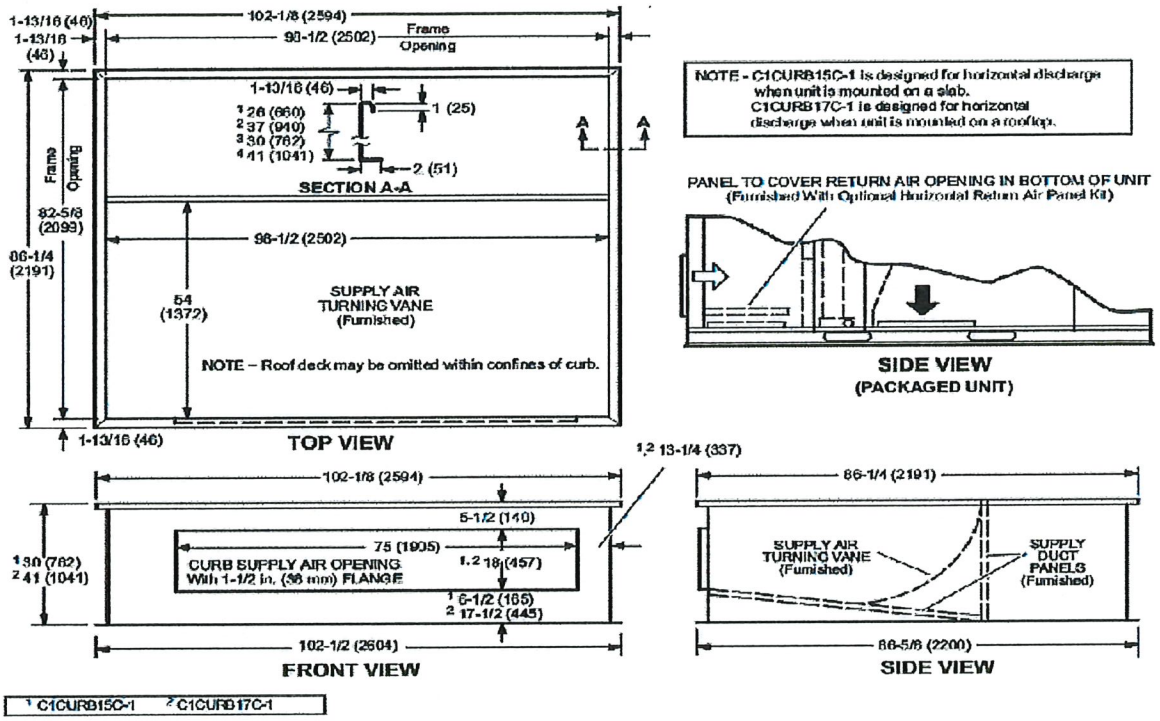
(Field installed in horizontal return air duct adjacent to unit)



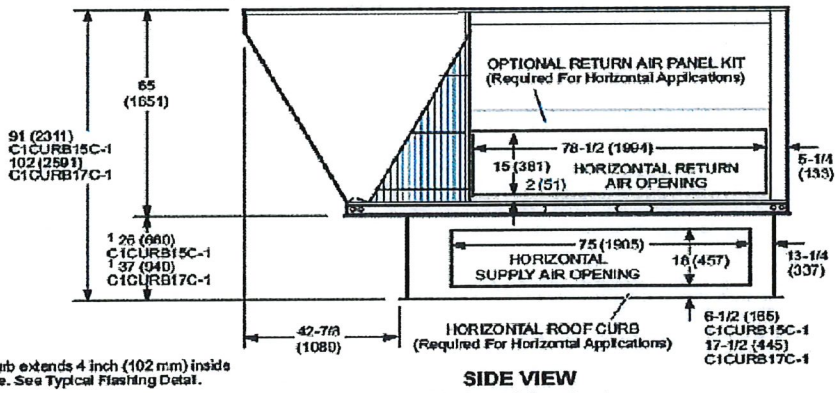
FRONT VIEW SIDE VIEW

NOTE - Two furnished per order no.
[1] NOTE - Opening size required in return air duct.

HORIZONTAL ROOF CURBS – Requires Optional Horizontal Return Air Panel Kit

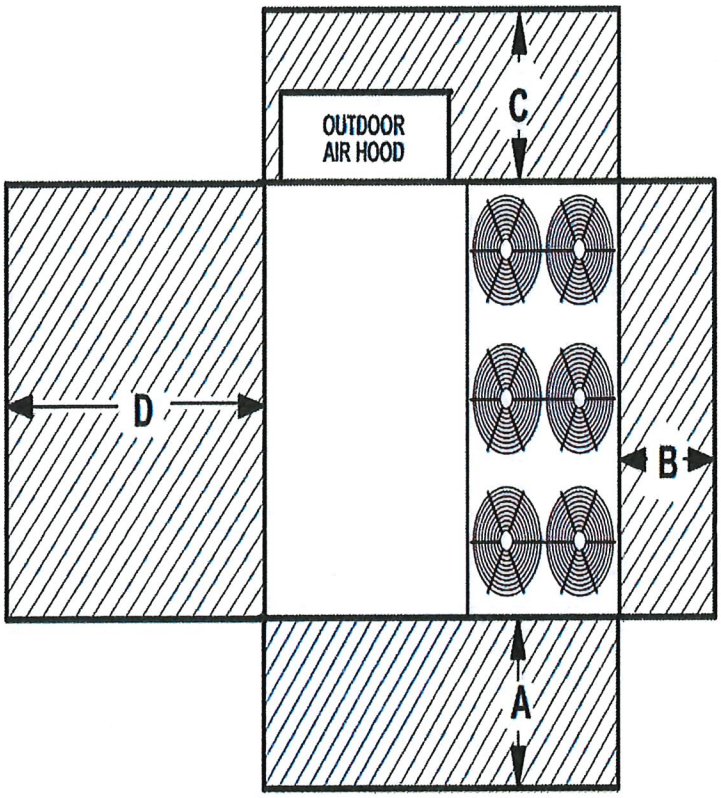


HORIZONTAL SUPPLY AND RETURN AIR OPENINGS ROOFTOP UNIT WITH HORIZONTAL ROOF CURB



1 NOTE – Top of Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical Flashing Detail.

Unit With Economizer



[1] Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	36	914	66	1676	Unobstructed
Minimum Operation Clearance	45	1143	36	914	36	914	41	1041	

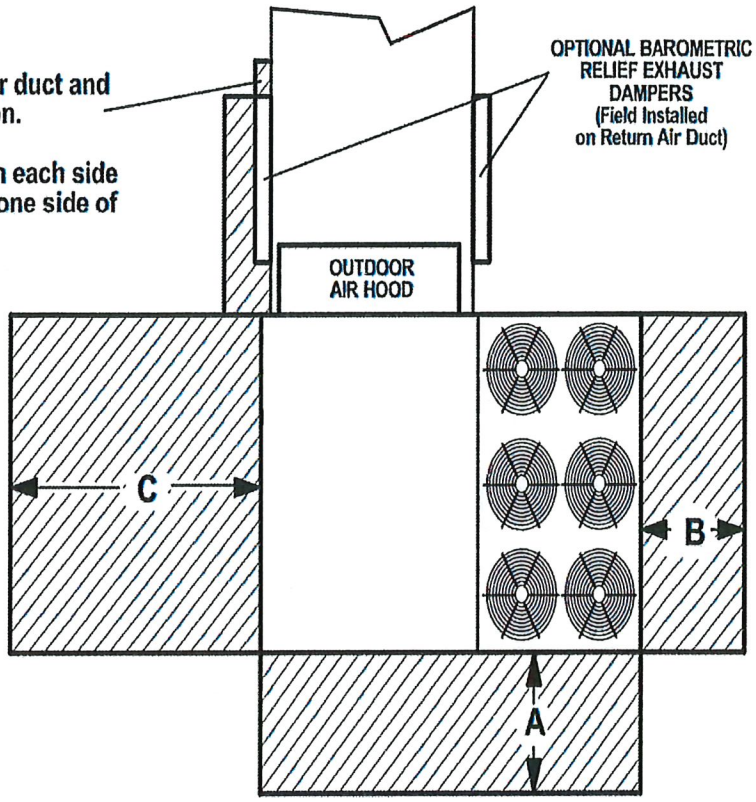
NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

[1] **Service Clearance** - Required for removal of serviceable parts.
Minimum Operation Clearance - Required clearance for proper unit operation.

Unit With Horizontal Barometric Relief Dampers

NOTE Allow adequate clearance for duct and barometric relief damper installation.

NOTE Dampers may be installed on each side of return air duct or end to end on one side of return air duct.



[1] Unit Clearance	A		B		C		Top Clearance
	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	66	1676	Unobstructed
Minimum Operation Clearance	45	1143	36	914	41	1041	

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

[1] **Service Clearance** - Required for removal of serviceable parts.
Minimum Operation Clearance - Required clearance for proper unit operation.

Project Submittal

Tag: 50 Ton G/E RTU
Model: LGH600S4M - LGH600S4M-G 50T CONF E=9.8

UNIT OVERVIEW

Voltage	IEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
460V 3Ph 60Hz	13.5 9.8	134 / 150	621.1 / 428.6	549.2 / 356.7	20,000	1.00 / 2.43	80.0 / 67.0	59.3 / 56.7

COOLING

Cooling Performance		Temperatures (DB/WB °F)		
Gross Cooling (Ttl/Sens)	621.1 / 428.6 MBH	Ambient	95.0	
Net Cooling (Ttl/Sens)	549.2 / 356.7 MBH	Entering	80.0	67.0
Coil Moisture Removal	181.47 lb/hr	Leaving – (Coil)	59.3	56.7
System Moisture Removal	181.47 lb/hr	Leaving – (Unit)	62.8	58.1

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	598.0 / 565.0 MBH	Cooling Stages	4	Type	R-410A	Qty	1
ARI Power	58,700 W	Compressor Qty	4	Charge		Size	1 in.
		Compressor RLA	74.4 amp			Pipe Thread	npt

HUMIDITROL - HOT GAS REHEAT

Humiditrol Dehumidification Performance		Temperatures (DB/WB °F)		
Gross Cooling - Stage 1(Ttl/Sens)	92.1 / 40.5 MBH	Ambient	95.0	
Gross Cooling - Stage 2 (Ttl/Sens)	503.5 / 302.1 MBH	Entering	80.0	67.0
Moisture Removal - Stage 1	48.6 lb/hr	Leaving – (Stage 1)	78.0	65.6
Moisture Removal - Stage 2	189.8 lb/hr	Leaving – (Stage 2)	65.5	58.9

HEATING

Heating Performance		Temperatures (DB/WB °F)		Specifications	
Output (High/Low)	640.0 / 422.4 MBH	Leaving	29.6	Heat Stages	2
Input (High/Low)	800.0 / 528.0 MBH			Thermal Efficiency	80.0%
Heat Rise	29.6 °F			Gas Line Size	1.25 in.
				Gas Pressure	7 in.WC

SUPPLY FAN

Air Flow (cfm)		Supply Fan		Air Resistance (in.WC)	
Supply	20,000	Nominal Power	30.00 hp	Total	2.43
Outdoor	2,000	Required Power	26.12 hp	Ext Supply	1.00
		Drive Type	MSAV Belt Drive		
		RPM Range	1,075 - 1,285 rpm		
		Required RPM	1,100 rpm		

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)

Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.70	0.11	0.06	0.26			0.30	

ELECTRICAL

Voltage	460V 3Ph / 60Hz	Compressor RLA	74.4 amp
MCA	134 amp	Cooling FLA Total	133.8 amp
MOCP	150 amp	Condenser FLA	14.4 amp
Condenser Power	5000 W	Supply Fan FLA	45.0 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA

Cabinet	286.00 in. x 90.00 in. x 68.00 in.	Total Weight	7,678 lb
Horizontal Supply	40.0 in. x 36.0 in.	Base Unit Net Weight	6,820 lb
Horizontal Return	23.8 in. x 69.2 in.	OAS/Econ Weight	188 lb
Filters	**(11)** 25.0 in. x 16.0 in. x 2.0 in.	Humiditrol Weight	150 lb
Sound Rating	91 dBA	Gas Heat Weight	110 lb
		Supply Fan Motor Weight	360 lb

Project Submittal

Tag: 50 Ton G/E RTU

Factory Installed Options

High Performance Economizer Upgrade Factory Installed
Single Sensible Economizer
Standard Cap, Std Packaging
Unit Orientation Horizontal
Supply Fan: Multi-Stage Air Volume
440V/460V/480V 3Phase
150Amp Disconnect Factory Installed
Supply Motor - 30 Hp Std Eff w/MSAV
Supply Drive Kit 13 (1075-1285 RPM)
Barometric Relief Damper (Fac)
800K A.S. (Dual Stage)
Condenser Louvered Panel Factory Installed
GFCI Factory Installed/Field Wired
Phase Monitor Factory Installed
Prodigy M3 BACnet Module (Fac)
Return Air Smoke Detector Factory Installed
Humiditrol Factory Installed
2" MERV4 - Std. Filter Factory Installed

Field Installed Accessories

Catalog Number	Qty	Description
17M50	11	Humidity Sensor Kit Field Installed

Product Features

Cabinet

Hinged Access Panels
Durable Outdoor Enamel Paint Finish
Totally Enclosed Outdoor Fan Motor
PVC Coated Fan Guard
Corrosion-Resistant Removable, Reversible Drain Pan
Isolated Compressor Compartment

Cooling System

Scroll Compressor
Expansion Valves
High Capacity Driers
Crankcase Heater
System can operate from 0°F to 125°F without any additional controls
Pre-charged Refrigeration System
Timed Off Control
Internal Pressure Relief Valve
Building Automation Integrated Control - Up to 4 Stages of Cooling
Thermostat Control – 4 Stages of Cooling
Humiditrol - Hot Gas Reheat Dehumidification System

Heating System

Redundant Automatic Gas Valve with Manual Shut-off
Electronic Flame Sensor
Direct Spark Ignition
Aluminized Steel Inshot Burners
AGA-CGA Certified
If configured for room sensor control, additional staging may be possible. Refer to performance tables within the EHB

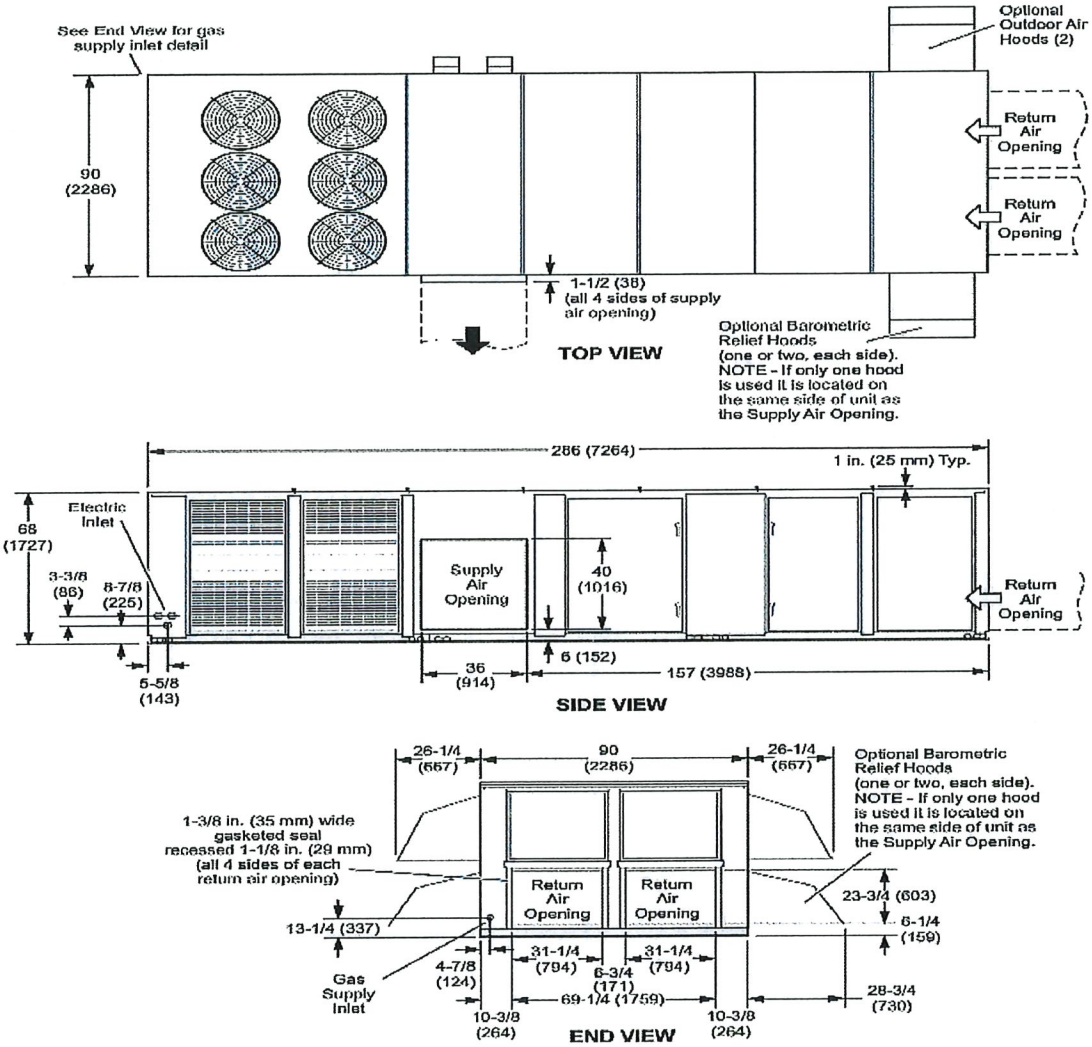
Control System

Prodigy 2.0 Control System
Auto reset high & low pressure switch with strike 3 lockout feature in Prodigy unit controller
Fan and Limit Controls
Overload Protection

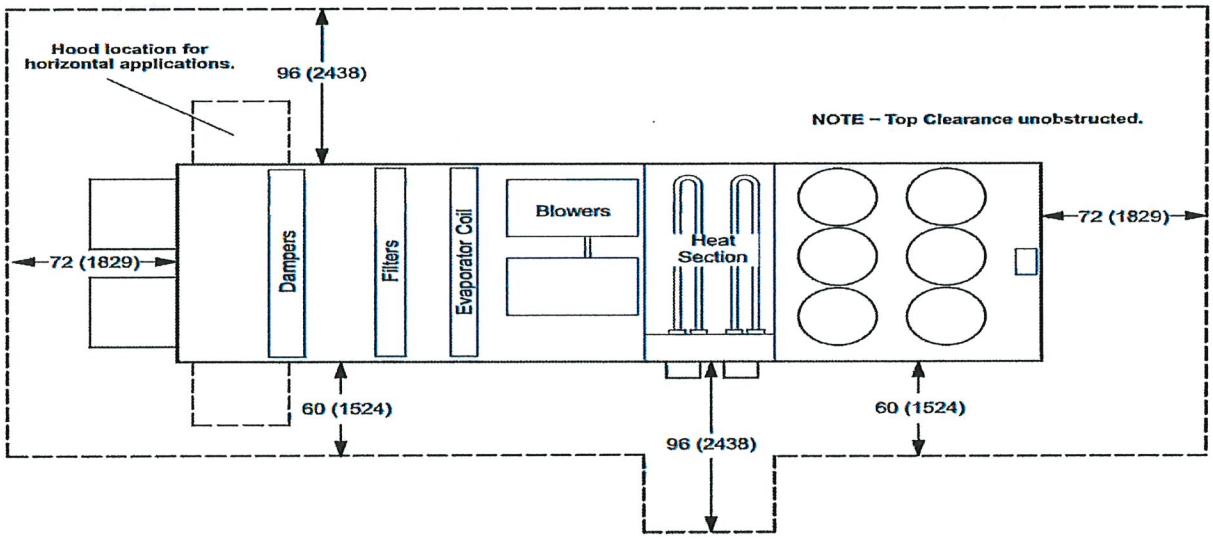
Warranty

Limited warranty on aluminized heat exchanger of 10 years
Limited warranty on compressor of 5 years
Limited warranty on Prodigy Unit Controller of 3 years
Limited warranty on High Performance Economizer of 5 years

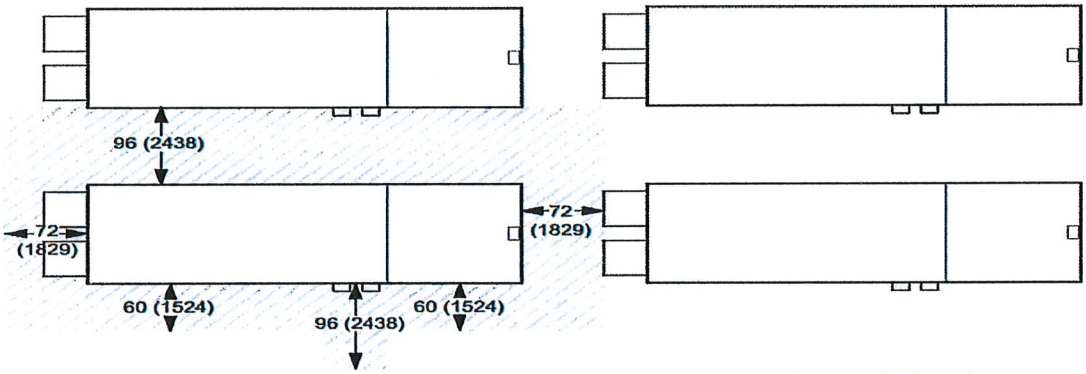
Limited warranty on all other components of 1 year
See Limited Warranty Certificate included with unit for details


See End View for gas supply inlet detail
Optional Outdoor Air Hoods (2)
90 (2286)
Return Air Opening
Return Air Opening
1-1/2 (38) (all 4 sides of supply air opening)
TOP VIEW
Optional Barometric Relief Hoods (one or two, each side). NOTE - If only one hood is used it is located on the same side of unit as the Supply Air Opening.
286 (7264)
1 in. (25 mm) Typ.
Electric Inlet
68 (1727)
3-3/8 (86)
8-7/8 (225)
Supply Air Opening
40 (1016)
Return Air Opening
6 (152)
36 (914)
157 (3988)
5-5/8 (143)
SIDE VIEW
26-1/4 (667)
90 (2286)
26-1/4 (667)
Optional Barometric Relief Hoods (one or two, each side). NOTE - If only one hood is used it is located on the same side of unit as the Supply Air Opening.
1-3/8 in. (35 mm) wide gasketed seal recessed 1-1/8 in. (29 mm) (all 4 sides of each return air opening)
Return Air Opening
Return Air Opening
23-3/4 (603)
13-1/4 (337)
6-1/4 (159)
31-1/4 (794)
31-1/4 (794)
4-7/8 (124)
6-3/4 (171)
Gas Supply Inlet
69-1/4 (1759)
28-3/4 (730)
10-3/8 (264)
10-3/8 (264)
END VIEW

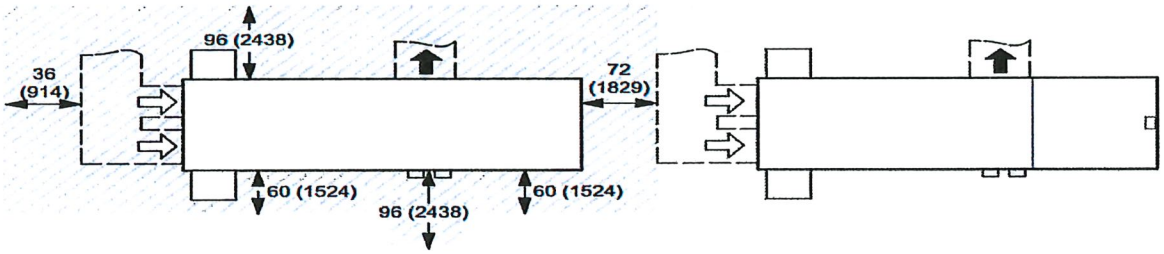
INSTALLATION/SERVICE CLEARANCES



Vertical Airflow Applications – Service clearances can be shared by multiple units.



Horizontal Airflow Applications – Service clearances can be shared by multiple units.



Project Submittal

Tag: 30 Ton G/E RTU
Model: LGH360H4M - LGH360H4M-G 30T CONF E=10.6

UNIT OVERVIEW

Voltage	IEER EER	MCA/MOCP (amp)	Gross Cooling Ttl/Sens (MBH)	Net Cooling Ttl/Sens (MBH)	Supply Air Flow (cfm)	ESP/TSP (in.WC)	EAT DB/WB (°F)	LAT DB/WB (°F)
460V 3Ph 60Hz	14 10.6	75 / 80	379.0 / 284.2	351.2 / 256.4	12,000	1.00 / 2.23	80.0 / 67.0	57.1 / 56.5

COOLING

Cooling Performance		Temperatures (DB/WB °F)		
Gross Cooling (Ttl/Sens)	379.0 / 284.2 MBH	Ambient	95.0	
Net Cooling (Ttl/Sens)	351.2 / 256.4 MBH	Entering	80.0	67.0
Coil Moisture Removal	89.30 lb/hr	Leaving – (Coil)	57.1	56.5
System Moisture Removal	89.30 lb/hr	Leaving – (Unit)	59.2	57.3

ARI Performance		Compressors		Refrigerant		Condensate Drain	
ARI Cooling	370.0 / 350.0 MBH	Cooling Stages	4	Type	R-410A	Qty	1
ARI Power	33,500 W	Compressor Qty	4	Charge	32 LBS. 0 OZ.	Size	1 in.
		Compressor RLA	48.8 amp			Pipe Thread	npt

HUMIDITROL - HOT GAS REHEAT

Humiditrol Dehumidification Performance		Temperatures (DB/WB °F)		
Gross Cooling - Stage 1(Ttl/Sens)	50.2 / 15.1 MBH	Ambient	95.0	
Gross Cooling - Stage 2 (Ttl/Sens)	209.9 / 125.9 MBH	Entering	80.0	67.0
Moisture Removal - Stage 1	33.1 lb/hr	Leaving – (Stage 1)	78.7	65.7
Moisture Removal - Stage 2	79.1 lb/hr	Leaving – (Stage 2)	69.9	61.5

HEATING

Heating Performance		Temperatures (DB/WB °F)		Specifications	
Output (High/Low)	384.0 / 249.6 MBH	Leaving	29.6	Heat Stages	2
Input (High/Low)	480.0 / 312.0 MBH			Thermal Efficiency	80.0%
Heat Rise	29.6 °F			Gas Line Size	1 in.
				Gas Pressure	7 in.WC

SUPPLY FAN

Air Flow (cfm)		Supply Fan		Air Resistance (in.WC)	
Supply	12,000	Nominal Power	10.00 hp	Total	2.23
Outdoor	1,200	Required Power	9.79 hp	Ext Supply	1.00
		Drive Type	MSAV Belt Drive		
		RPM Range	870 - 1,045 rpm		
		Required RPM	1,042 rpm		

AIR RESISTANCE - OPTIONS/ACCESSORIES (in.WC)

Wet Coil	Humiditrol	Heat	Economizer	Filters	Diffuser	Exhaust	ERW
0.20		0.60	0.10		0.33		

ELECTRICAL

Voltage	460V 3Ph / 60Hz	Compressor RLA	48.8 amp
MCA	75 amp	Cooling FLA Total	70.6 amp
MOCP	80 amp	Condenser FLA	7.8 amp
Condenser Power	2500 W	Supply Fan FLA	14.0 amp
Oper Range-Nom Volt	+/- 10%		

ADDITIONAL DATA

Cabinet	145.00 in. x 90.75 in. x 65.00 in.	Total Weight	3,814 lb
Horizontal Supply	18.0 in. x 75.0 in.	Base Unit Net Weight	3,107 lb
Horizontal Return	15.0 in. x 78.5 in.	OAS/Econ Weight	138 lb
Filters	**(12)** 20.0 in. x 20.0 in. x 2.0 in.	Humiditrol Weight	0 lb
Sound Rating	95 dBA	Gas Heat Weight	64 lb
		Curb Weight	505 lb

Project Submittal

Tag: 30 Ton G/E RTU

Factory Installed Options

High Performance Economizer Upgrade Factory Installed
Single Sensible Economizer
Standard Cap, Std Packaging
Unit Orientation Horizontal
Supply Fan: Multi-Stage Air Volume
440V/460V/480V 3Phase
150Amp Disconnect Factory Installed
Supply Motor - 10 Hp Std Eff w/MSAV
Supply Drive Kit 2 (870-1045 RPM)
480K A.S. (Dual Stage)
GFCI Factory Installed/Field Wired
Phase Monitor Factory Installed
Prodigy M3 BACnet Module (Fac)
Return Air Smoke Detector Factory Installed
Environ Coil System Factory Installed
Humiditrol Factory Installed
2" MERV4 - Std. Filter Factory Installed

Field Installed Accessories

Catalog Number	Qty	Description
33K78	1	Horizontal Barometric Relief Dampers Field Installed
11T90	1	30" HZ - Slab Applications Field Installed
38K48	1	Horiz Return Air Panel Kit Field Installed
73K33	1	Insulation Kit for 30" Curb Field Installed
17M50	1	Humidity Sensor Kit Field Installed

Product Features

Cabinet

Hinged Access Panels
Durable Outdoor Enamel Paint Finish
Totally Enclosed Outdoor Fan Motor
PVC Coated Fan Guard
Corrosion-Resistant Removable, Reversible Drain Pan
Isolated Compressor Compartment

Cooling System

Scroll Compressor
Expansion Valves
High Capacity Driers
Crankcase Heater
System can operate from 0°F to 125°F without any additional controls
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Timed Off Control
Internal Pressure Relief Valve
Building Automation Integrated Control - Up to 4 Stages of Cooling
Thermostat Control – 4 Stages of Cooling
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Direct Spark Ignition
Aluminized Steel Inshot Burners
AGA-CGA Certified
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Auto reset high & low pressure switch with strike 3 lockout feature in Prodigy unit controller
Fan and Limit Controls
Overload Protection

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Limited warranty on all other components of 1 year
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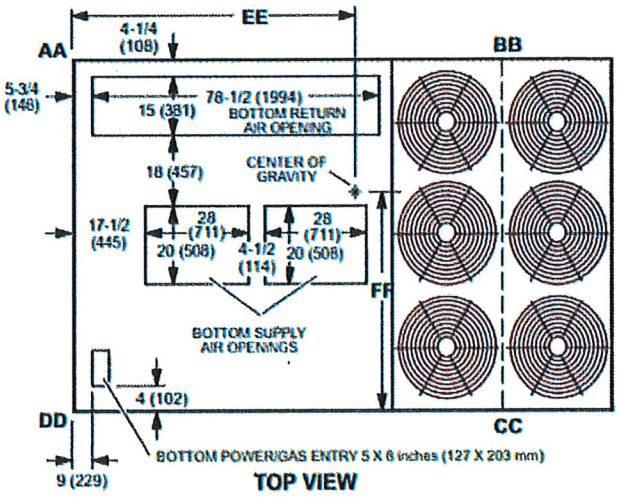
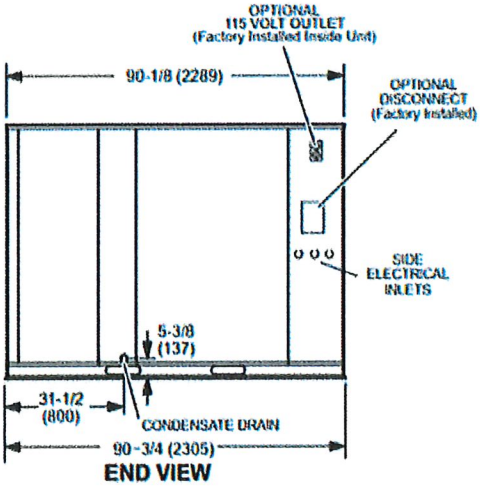
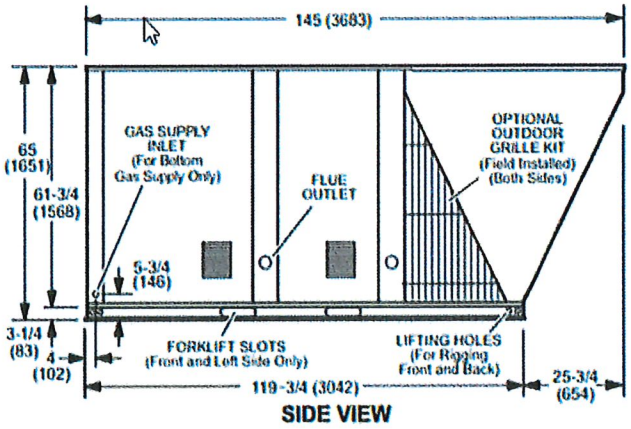
Project Submittal

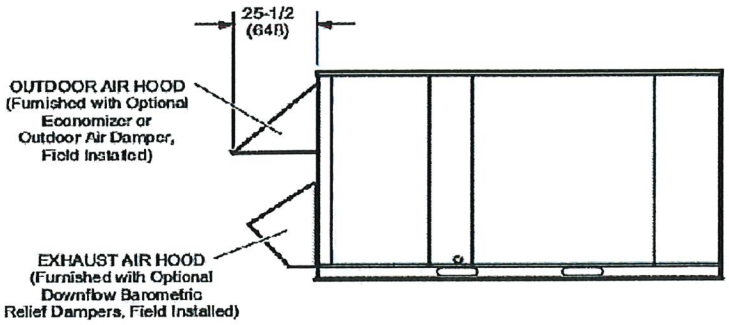
Corner Weights (lb)								Center of Gravity (in.)			
AA		BB		CC		DD		EE		FF	
Base	Max	Base	Max	Base	Max	Base	Max	Base	Max	Base	Max
632	709	635	712	912	1,023	928	1,041	60.00	60.00	37.00	37.00



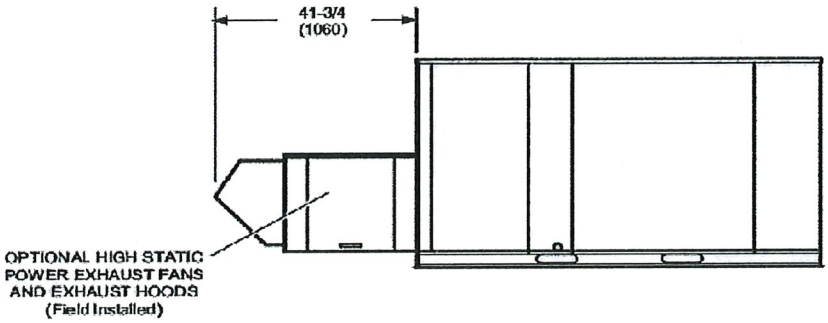




OUTDOOR AIR HOOD DETAIL

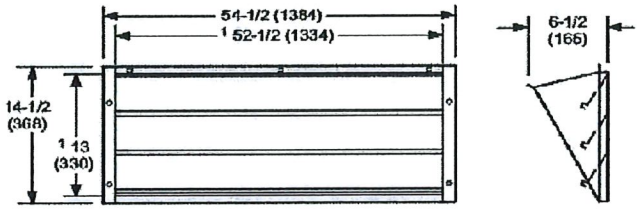


OPTIONAL HIGH STATIC POWER EXHAUST FANS DETAIL



OPTIONAL HORIZONTAL BAROMETRIC RELIEF DAMPERS WITH HOOD

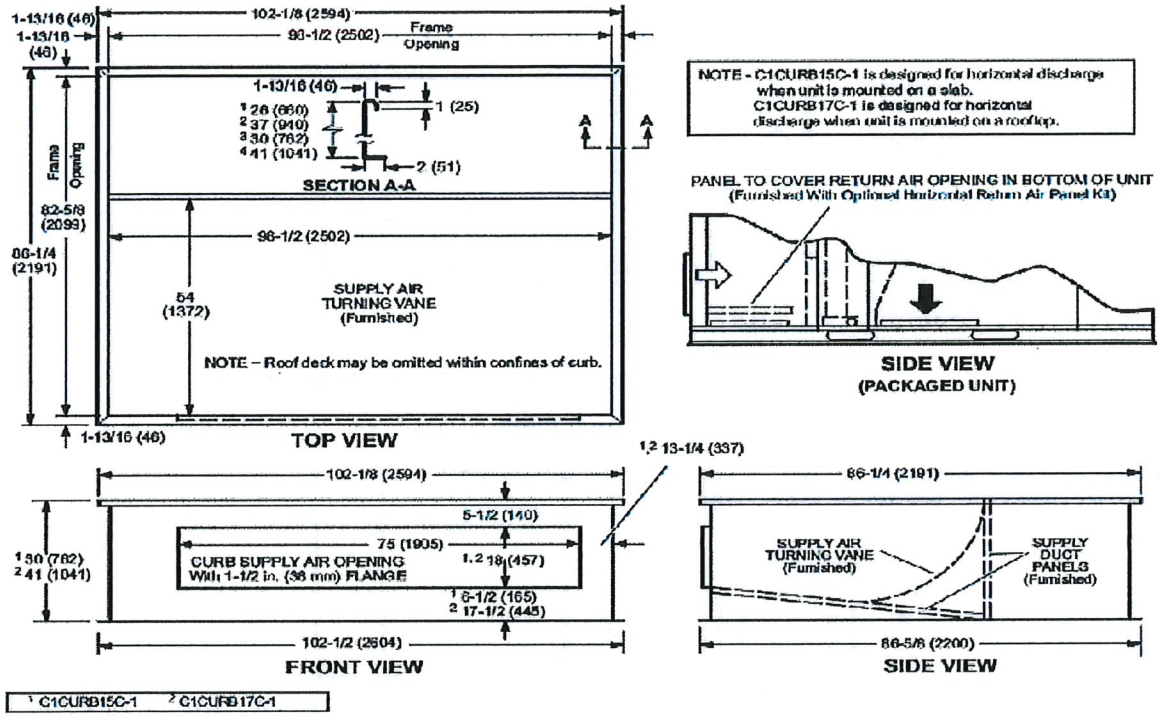
(Field installed in horizontal return air duct adjacent to unit)



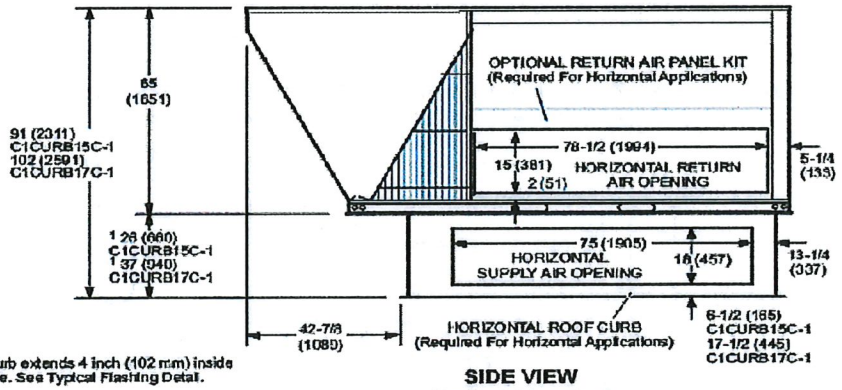
FRONT VIEW SIDE VIEW

NOTE - Two furnished per order no.
[1] NOTE - Opening size required in return air duct.

HORIZONTAL ROOF CURBS – Requires Optional Horizontal Return Air Panel Kit

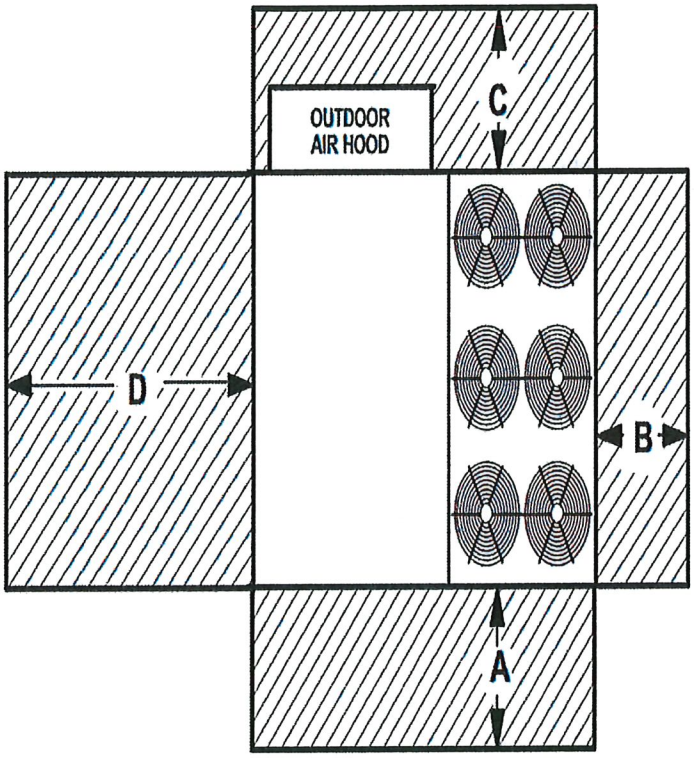


HORIZONTAL SUPPLY AND RETURN AIR OPENINGS ROOFTOP UNIT WITH HORIZONTAL ROOF CURB



1 NOTE – Top of Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical Flashing Detail.

Unit With Economizer



[1] Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	36	914	66	1676	Unobstructed
Clearance to Combustibles	36	914	1	25	1	25	1	25	
Minimum Operation Clearance	45	1143	36	914	36	914	41	1041	

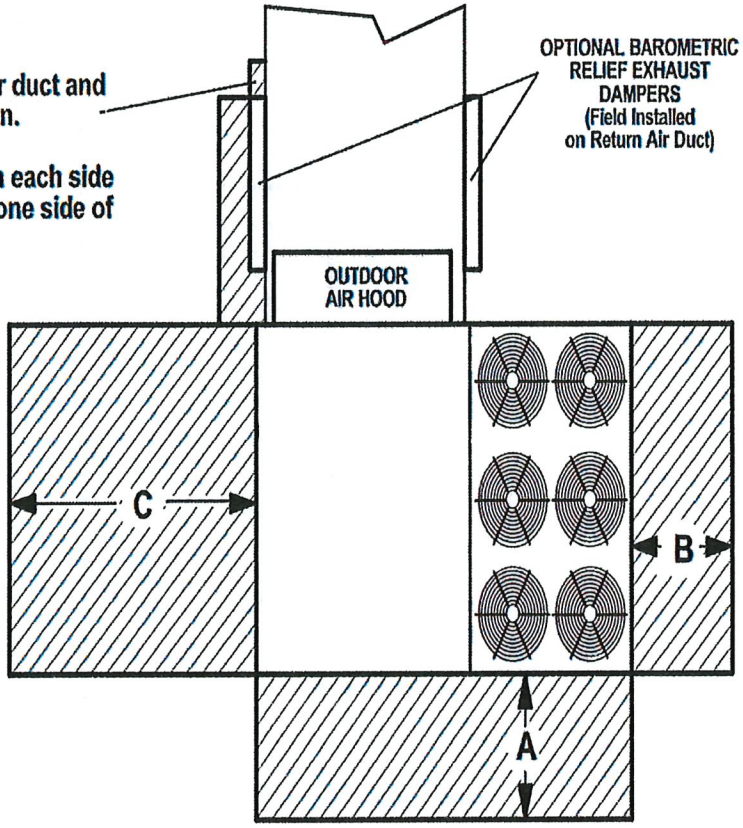
NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

[1] Service Clearance - Required for removal of serviceable parts.
Clearance to Combustibles - Required clearance to combustible material.
Minimum Operation Clearance - Required clearance for proper unit operation.

Unit With Horizontal Barometric Relief Dampers

NOTE Allow adequate clearance for duct and barometric relief damper installation.

NOTE Dampers may be installed on each side of return air duct or end to end on one side of return air duct.



[1] Unit Clearance	A		B		C		Top Clearance
	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	66	1676	Unobstructed
Clearance to Combustibles	36	914	1	25	1	25	
Minimum Operation Clearance	45	1143	36	914	41	1041	

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

[1] **Service Clearance** - Required for removal of serviceable parts.
Clearance to Combustibles - Required clearance to combustible material.
Minimum Operation Clearance - Required clearance for proper unit operation.

Project Submittal

Tag: Miscellaneous Items

Miscellaneous Items

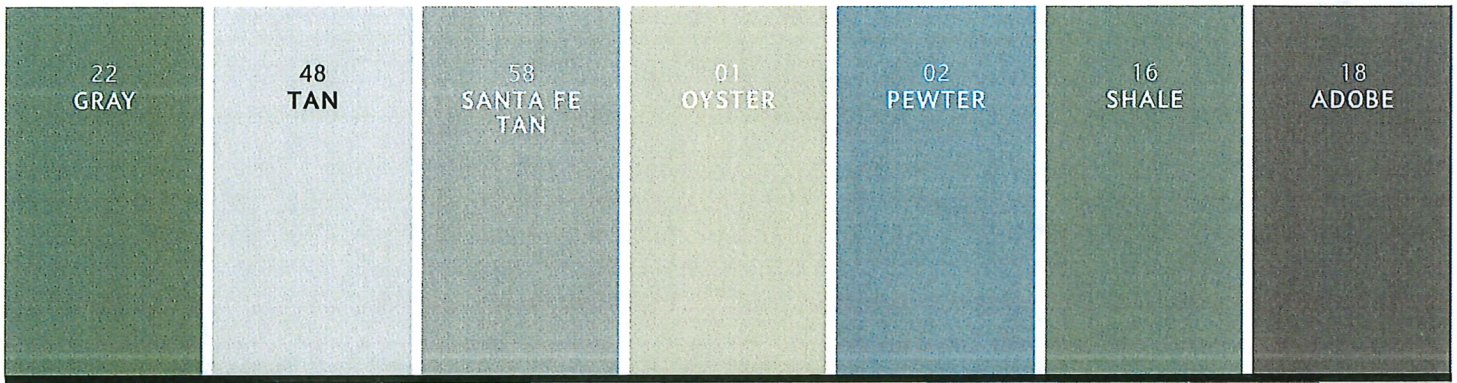
Tag	Catalog Number	Qty	Description
ALT - 14" Standard Hybrid Curb (50 Ton Units Only)			
	11F67	1	14" Downflow - Hybrid Curb Field Installed
ALT - 24" Standard Hybrid Curb (50 Ton Units Only)			
	11F69	1	24" Downflow - Hybrid Curb Field Installed

GacoFlex™

STANDARD COLORS

Gaco offers an extensive line of roof and deck coatings designed to provide lasting protection and waterproofing on a variety of substrates. GacoFlex coatings are available in a variety of standard colors as shown below, however, additional lead times may be necessary for certain products and colors, and availability may change without notice.

Please contact your Gaco representative for more information.



CATEGORY	PRODUCT	WHITE	GRAY	TAN	SANTA FE TAN	OYSTER	PEWTER	SHALE	ADOBE	IVORY
Acrylic	A30	•								
Acrylic	A31	•								
Acrylic	A38	•				•	•	•	•	
Acrylic	A47	•								
Silicone	S20	•	•	•	•					
Silicone	S42	•	•	•	•					
Urethane	UA60	•				•	•		•	
Urethane	U61					•	•	•	•	
Urethane	U64						•			
Urethane	U66					•	•	•	•	
Urethane	U87									•
Urethane	U91					•	•	•	•	

Color swatches presented are representations of actual colors. Actual color may vary slightly due to lighting conditions and other factors.

For more information call **800.331.0196** or visit **Gaco.com**.

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