KITCHEN REPLACEMENT
ISHI CONSERVATION CAMP
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
JCCA# 18011

SUBMITTAL REVIEW

Submitted By: Ginno Construction Inc.

Date Received: 12/07/22

Submittal No.: 068-237800-002

Date Returned: 12/08/22

Reviewed By: JC Chang & Associates

Description: Make Up Air Unit

☑ REVIEWED	☐ REJECTED
☐ REVISE AND RESUBMIT	☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF THE GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS OR HER WORK WITH THAT OF ALL OTHER TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.

BY RHONEIL FULINARA DATE 12/08/22

J.C. CHANG & ASSOCIATES, INC.

Comments:

No exception taken.

GINNO CONSTRUCTION, INC.
General Building Contractor Lic. #921238

SUBMITTAL FORM

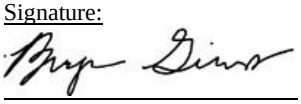
SECTION I (to be completed by contractor)

To: William Greenleaf, Project Director J.C. Chang & Assoc., Inc.	Check One: **Approval Request** √ Information Only ☐	Submittal Section #: **23 78 00**
From: **B&M Builders**	Project: Ishi Conservation Camp Project No.: 00000000004673	Check One: ☐ This is a new submittal √ **This is a re-submittal of**: 068-233713-001

Specification Title: Evap. Cooling and Heating Air Handling Units	Submittal Category: Product Data - Makeup Air Unit

Description of Work Covered & Contractor Remarks:
***See "Specification Section 23 78 00 - Submittal" to review specification documents.**
***Review & return cover page with your disposition indicated.**

The Contractor represents that this submittal is in conformance with contract requirements.

Contractor	Name: Bryan Ginno	Signature: 	Submittal Date: 12/5/22	Title: Project Manager

SECTION II (To be completed by Owner or Architect)

	Name:	Signature:	Date:	Disposition Code:

Disposition Codes for "Approval Request"		Disposition Codes for "Information Only"
A- Approved B- Approved with comments, resubmission not required	C- Approved with comments, resubmission required D- Disapproved, resubmission required	**R**- Receipt Acknowledged **RX**- Receipt Acknowledged, does not comply with contract requirements, resubmission required

Action taken herein does not relieve the Contractor of his responsibility to meet all Contract Requirements; nor does it authorize increase in the contract price or delay in delivery.

External Comments:

If the Contractor considers that any comments made above and or Ginno Construction, Inc.'s disposition will resulting a contract price increase or delay in delivery, no action should be taken in complying with this document and the Contractor's proposal for accomplishing the work should be submitted to the Contract Administrator as soon as possible.

SECTION III (to be completed by Contractor)

Note: Contractor is required to return a copy of this submittal form to Owner/Architect confirming receipt of all documents listed	**Documents Received by:**	**Date:**

855 Marauder St., Ste. 100, Chico, CA 95973
(530)894-6859

SUBSTITUTION REQUEST FORM

Substitutions are only allowed within number of days specified. Use this for m for requesting "or equal" products and materials.

Project: Ishi Conservation Camp Kitchen Replace	Substitution Request Number: 1
	From: B&M Builders, Inc.
To:	Date: 12/5/22
	Project Number: 00000000004673

Specification Section Title: Make Up Air Unit (MUA-1 sheet M0.2)		
Section Number: 23 78 00	Page:	Article/Paragraph:
Specified Item: Greenheck IGX-118-H32-S		

Proposed Substitution: Greenheck IGX-P127-H32-MF-S	
Manufacturer: Greenheck	Address: 2374 Gold River Rd. Rancho Cordova, CA 95670
Contact Name: Ken Nelson	Phone Number: 916-381-6666
☐ Comparison between proposed substitution and specified product is attached. Note all differences.	

Reason for not using specified item:

☑ Specified product is no longer available.
☐ Substitution will improve lead time by _____ days
☐ Substitution will save Owner $ _____
☐ Other:

☐ List 3 similar installations including project name, address, owner, and date installed is attached.
Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explanation attached.

Supporting Data Attached:

☐ Product Data (indicate any options to be included)
☐ Drawings ☐ Test Reports ☐ Samples ☐ Color Chart ☐ Other:

Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable is available.
- Proposed substitution will not affect or delay Construction Progress Schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including architectural or engineering design, detailing, and construction costs caused by the requested substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

- Substitutions for products or systems involving structural, fire/life safety and access compliance will require AHJ approval. This will add time required to review those substitutions requiring AHJ approval. Contractor is solely responsible for all documentation, cost, and time required to obtain AHJ approval.

Submitted by: Eric Costa	Firm: B&M Builders, Inc.
Signature: Eric Costa	Date: 12/5/22
Comments:	

A/E Review:
☐ Approve Substitution.
☐ Approve Substitution as Noted.
☐ Reject Substitution. Use specified product.
☐ Reject Substitution. Use specified product. Substitution request received too late.

Signed by:	Date:
Comments:	

Owner's Review and Action (Approval of substitution is not valid without Owner's signature)
☐ Substitution approved.
☐ Substitution approved as Noted.
☐ Substitution rejected. Use specified product.

Signed by:	Date:

Comments:

End of Substitution Request Form

KITCHEN REPLACEMENT
ISHI CONSERVATION CAMP
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
JCCA# 18011

SUBMITTAL REVIEW

Submitted By: Ginno Construction Inc.

Date Received: 09/27/22

Submittal No.: 068-233713-001

Date Returned: 09/28/22

Reviewed By: JC Chang & Associates

Description: Air Outlet MUA

☐ REVIEWED ☑ REJECTED

☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF THE GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS OR HER WORK WITH THAT OF ALL OTHER TRADES AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.

BY RHONEIL FULINARA DATE 09/28/22

J.C. CHANG & ASSOCIATES, INC.

Comments:

1. Change Title to Make Up Air Unit.

2. Wrong submittal section. Change to 23 78 00.

3. Selection not correct. See schedule on M0.2 for correct information and accessories. Contact Kent Kung of NSW in Anaheim for correct information.

4. This is the same MUA information submitted under Submittal 023. See comment under Submittal 023.

GINNO CONSTRUCTION, INC.
General Building Contractor Lic. #921238

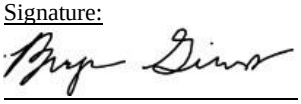
SUBMITTAL FORM

SECTION I (to be completed by contractor)

To: William Greenleaf, Project Director J.C. Chang & Assoc., Inc.	Check One: **Approval Request** √ Information Only ☐	Submittal Section #: **23 37 13**
From: **B&M Builders**	Project: Ishi Conservation Camp Project No.: 00000000004673	Check One: ☐ This is a new submittal √ **This is a re-submittal of**: 023-238115-001
Specification Title: Air Outlet/MUA	Submittal Category: Product Data	

Description of Work Covered & Contractor Remarks:
***See "Specification Section 23 37 13 – Air Outlet/MUA- Submittal" to review specification documents.**
***Review & return cover page with your disposition indicated.**

The Contractor represents that this submittal is in conformance with contract requirements.

Contractor	Name: Bryan Ginno	Signature: 	Submittal Date: 9/23/22	Title: Project Manager

SECTION II (To be completed by Owner or Architect)

	Name:	Signature:	Date:	Disposition Code:

Disposition Codes for "Approval Request"		Disposition Codes for "Information Only"
A- Approved B- Approved with comments, resubmission not required	C- Approved with comments, resubmission required D- Disapproved, resubmission required	**R**- Receipt Acknowledged **RX**- Receipt Acknowledged, does not comply with contract requirements, resubmission required

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SECTION III (to be completed by Contractor)

Note: Contractor is required to return a copy of this submittal form to Owner/Architect confirming receipt of all documents listed	**Documents Received by:**	**Date:**

855 Marauder St., Ste. 100, Chico, CA 95973
(530)894-6859

NORMAN S. WRIGHT
Mechanical Equipment Corporation
2374 Gold River Road, Rancho Cordova, CA 95670–4555 • tel 916.381.6666 • fax 916.381.8057

Heating
Ventilation
Air Conditioning
Hydronic Systems

norman-wright.com

MAKE UP AIR UNIT SUBMITTAL

Date: September 7, 2022

PROJECT: Ishi Conservation Camp Replace Kitchen
LOCATION: Paynes Creek
MECHANICAL ENGINEER: JCC & Associates Inc
MECHANICAL CONTRACTOR: B&M Builders
DOCUMENT DATE: Plans dtd: 1.8.21 and Specs dtd: 8.2021 Addenda 1&2
PREPARED BY: Ken Nelson for Tyler Countryman

GREENHECK MAKE UP AIR UNIT

Tag	Model	Inclusions
MAU-1	IGX-P127-H32-MF-S	• Volume: 7,914 CFM at 2.955 in. wg • Operating Power: 7.46 hp (per fan) • Motor: Qty. 1, 7-1/2 HP, 208/60/3, 1180 RPM • Fan Speed: 1215 RPM • Heating: Indirect Gas (LP) ▪ Furnace Size: 1,050.0 MBH ▪ Energy In/Out: 1,050.0/840.0 MBH ▪ Leaving Dry Bulb: 97.3 F • Cooling: Evaporative ▪ Total Energy: 102.9 MBH ▪ Leaving DB/WB: 71.7/0.0 F ▪ Required Flow: 0.4 GPM • Air Flow Arrangement: Outdoor Air Only • Damper: Inlet • Outdoor Air Intake Position: End • Discharge Position: Horizontal • Coating: Permatector - Concrete Gray (RAL 7023) • Insulation: Double Wall - Entire Unit • Supply Fan Control: VFD • VFD Control: ConstantVolume • Hinged Access • Access Side: Right-Hand • Electrical Options/Accessories • Control Center • Heat Inlet Air Sensor • Cool Inlet Air Sensor • Dirty Filter Switch • Remote Panel: Kitchen (ships loose) • Unit Controls: Remote Panel • Temperature Control: Discharge • Motor with shaft grounding

		• Indirect Gas Options/Accessories • Outdoor Install.-Standard Vent. • Heat Exchanger: Stainless Steel • Furnace Control: 12 to 1 Electronic • Evap Cooling Options/Accessories • Evap Media: CELdek • Evap Control: Recirculating Pump • With Louvered Intake and Aluminum Mesh Filters: ▪ 16x20x2 - (6) ▪ 20x20x2 - (2) • 12” high curb, pitched

***NOTE:** Left or Right hand configuration to be specified prior to release

GREENHECK
Building Value in Air.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

IGX-P127-H32-MF-S

Unit Performance

Design Conditions

Elevation (ft)	Summer		Winter (°F)	Supply (CFM)	Outdoor Air (CFM)
	DB (°F)	WB (°F)			
95	83.7	70.2	-1.0	7,914	7,914

Unit Specifications

Qty	Weight (lb)	Cooling Type	Heating Type	Unit Installation	Unit ETL Listing	Furnace ETL Listing
1	3,076 (+/- 5%)	Direct Evaporative	Indirect Gas Furnace	Outdoor	UL / cUL 1995	ANSI Z83.8 / CSA 2.6

Configuration

Unit Orientation	Unit Configuration	Outdoor Air Intake	Return Air Intake	Supply Air Discharge
Horizontal	Constant Volume 100% OA	End	-	End

Cooling Specifications

Type	Cooling Media	Media Depth (in.)	Required Flow (GPM)	Performance (DB/WB)	
				EAT (°F)	LAT (°F)
Direct Evaporative	CELdek	12	0.4	83.7 / 70.2	71.7 / 70.2

Heating Specifications

Type	Gas Type	Gas Pressure		Capacity (MBH)		Temperature Rise		Turndown	Performance	
		Min (in. wg)	Max (PSI)	Input	Output	Min (°F)	Max (°F)		EAT (°F)	LAT (°F)
Indirect Gas Furnace	LP	10	0.5	1,050.0	840.0	8.2	98.3	12:1	-1.0	97.3

Air Performance

Type	Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Fan			
						Qty	Type	Size (in.)	Drive-Type
Supply	7,914	1.5	2.955	1215	7.46	1	Mixed Flow	33	Direct-Drive

Motor Specifications

Motor	Qty	Size (HP)	Enclosure	Efficiency	RPM
Supply Fan Motor	1	7-1/2	ODP	NEMA Premium	1180

Electrical Specifications

Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	SCCR
Unit	208/60/3	36.8	60	5kA

GREENHECK
Building Value in Air.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

CONSTRUCTION FEATURES AND ACCESSORIES

Unit	
Unit Installation - Outdoor	Std
Unit Construction - Double Wall	X
Wall Insulation - 1in. fiberglass - Tempering on	X
Base Insulation - 1in. fiberglass - entire unit base pan	Std
Paneled Bottom - Sheet metal liner for base insulation	
Corrosion Resistant Fasteners	Std
Access and Connections - Right side when facing intake	X
Service Access - Hinged access doors	X
Unit Finish - Permatector ASTM B117 salt spray 2500 hours	X
Finish Color - Concrete Gray (RAL 7023)	X
Supply Fan - Direct-drive, mixed flow plenum	X
Supply Fan and Motor Vibration isolation - Neoprene	X
Controls	
Unit Controls - Terminal strip with remote panel	X
Remote Panel - Industrial (NEMA-1)	X
BMS Communication	
BMS Protocol	
Temperature Control - Discharge control	X
Supply Fan VFD - VFD by factory	X
Supply Fan Control - Constant Volume	X
Unoccupied Mode (Night Setback)	
Control Accessories	
Remote display	
Heating Inlet Air Sensor	X
Cooling Inlet Air Sensor	X
Dirty Filter Switch	X
Fire Stat Type III (Ships loose)	
120V/24V Smoke Detector (Ships loose)	
Inlet Damper End Switch	
External Cooling Lockout Relay	
Freeze Protection (Supply Air Low Limit)	
Auxiliary Supply Starter Contacts	
Auxiliary Exhaust Starter Contacts	
Airflow Proving Monitoring Contact	

Accessories	
Factory Installed, Lockable, NEMA 3R Disconnect	Std
Weatherhood - Louvered with aluminum mesh filters	X
Supply Air Filters	
Outdoor Air Inlet Damper - Low leakage	X
Supply Air Outlet Damper	
Return Air Damper	
Diffuser	
Roof Curb - GPIP	X
Combination Curb	
Electrofin Coil Coating	
Fan Bearing Extended Lube Lines	
Inlet Damper Module	
Spare Belts	
Spare Filters	
Motor with Shaft Grounding	X
Service Outlet	
Service Lights	
Gas Heating Accessories	
Furnace Venting - Outdoor	X
Venting Type - Power vented	Std
Furnace Venting Method - Standard	X
Concentric Venting Adapter	
Direct Spark Ignition	Std
Flame Sensing - Flame rod	Std
Heat Exchanger Material - Stainless steel	X
Furnace Controls - 12:1 Modulating	X
Agency Approval - ETL	Std
External Gas Pressure Regulator (Ships loose)	
DDC Assisted Furnace Commisioning	X
Evaporative Cooling Accessories	
Evap Controls - Recirculating Pump	X
Evap Valves (Ship loose)	
Louvered intake provided with 2" aluminum mesh filters	X
Warranty Options	
Unit Warranty - 18 months (std.)	X
5 Year Compressor Warranty	
5 Year Heat Exchanger Warranty	
10 Year Heat Exchanger Warranty	

Standard Option	Std
Not Included	
Included	X

Notes
Damper(s) supplied are low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft^2 @ 1 in.wg), Class 1A

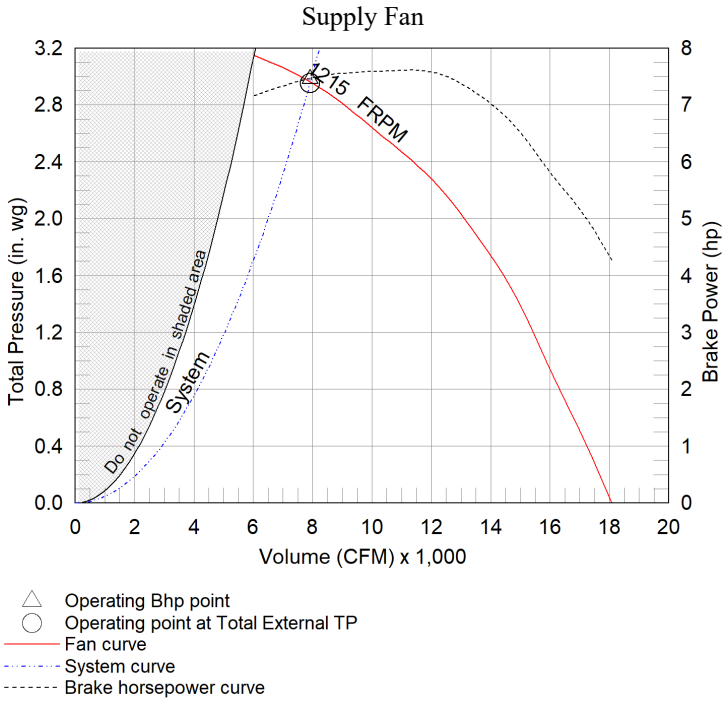
Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Fan Charts And Performance

Supply Fan Performance									
Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Motor		Fan		
					Qty	Size (HP)	Qty	Type	Drive-Type
7,914	1.5	2.955	1215	7.46	1	7-1/2	1	Mixed Flow	Direct

Pressure Drop (in. wg)							
Diffuser	Weatherhood	Filter	Damper	Cooling	Heating	External	Total
-	-	-	0.071	0.539	0.846	1.5	2.955

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
90	84	86	0	0	81	78	72	93	82	33



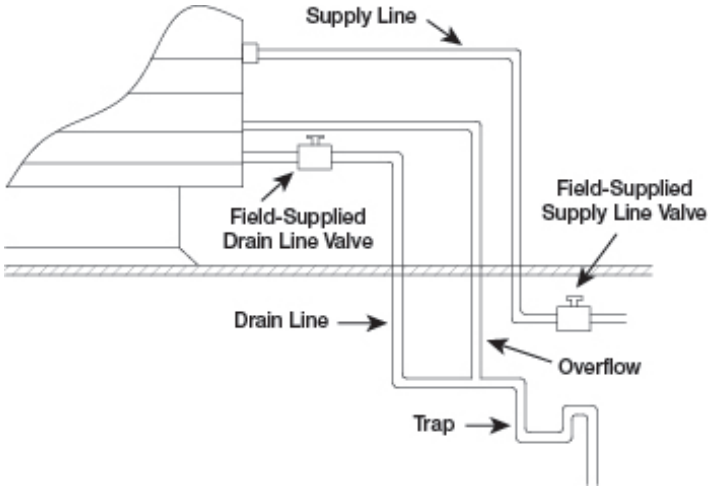
Cooling Specifications

Cooling Performance					
Type	Cooling Media	Media Depth (in.)	Required Flow (GPM)	Performance (DB/WB)	
				EAT (°F)	LAT (°F)
Direct Evaporative	CELdek	12	0.4	83.7 / 70.2	71.7 / 70.2

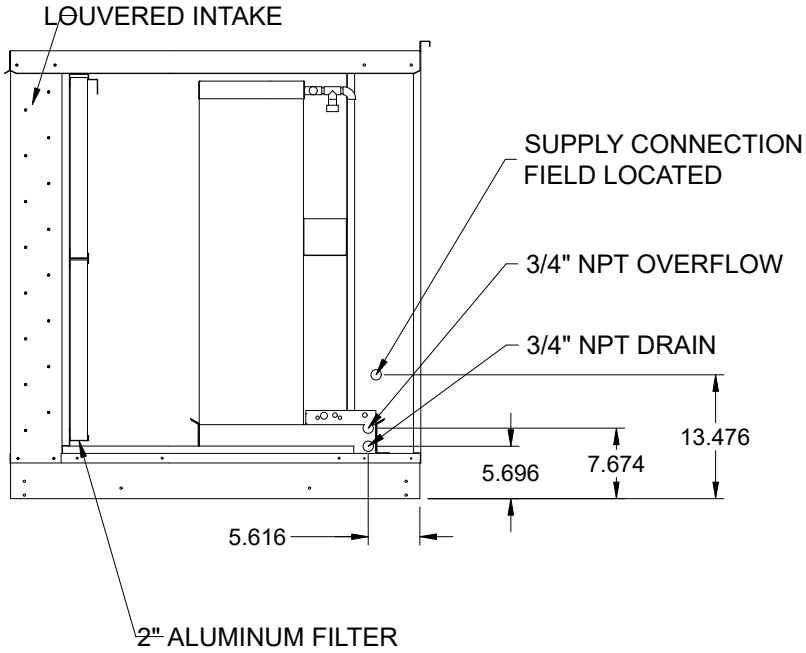
Unit Details
Stainless steel sump and media casing
Supply line, drain line and supply line drain valves must be field provided by others
Valve provided for bleed-off rate adjustment

Ball valve for flow rate adjustment
Recirculating pump(s) provided by factory

Recirc. Pump Evap Control



Evaporative Cooling Connections



Heating Specifications

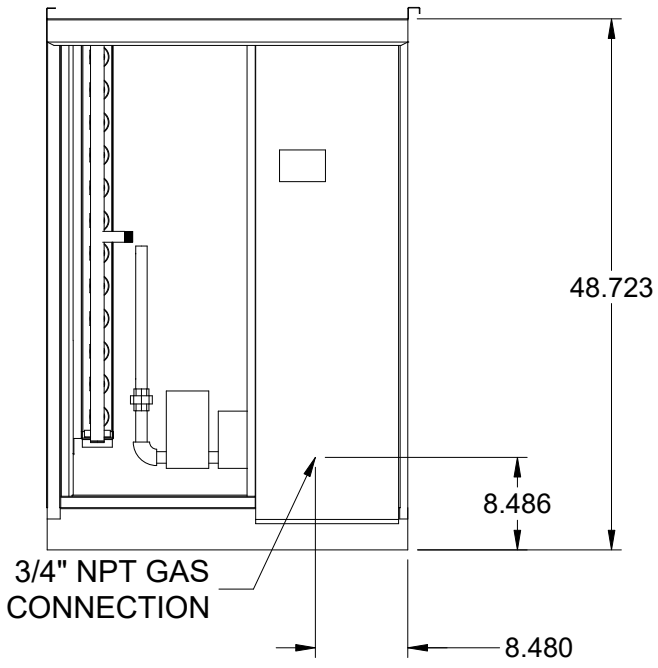
Heating Performance										
Type	Gas Type	Gas Pressure		Capacity (MBH)		Temperature Rise		Turndown	Performance	
		Min (in. wg)	Max (PSI)	Input	Output	Min (°F)	Max (°F)		EAT (°F)	LAT (°F)
Indirect Gas Furnace	LP	10	0.5	1,050.0	840.0	8.2	98.3	12:1	-1.0	97.3

Heating Information				
Heat Exch. Material	Venting	Venting Method	Gas Pressure Regulators	Heat Exchanger Warranty
Stainless Steel	Outdoor	Standard	-	-

Unit Details
ANSI Standard Z83.8 and CSA 2.6
Direct Spark Ignition
Stainless Steel Heat Exchanger Tubes

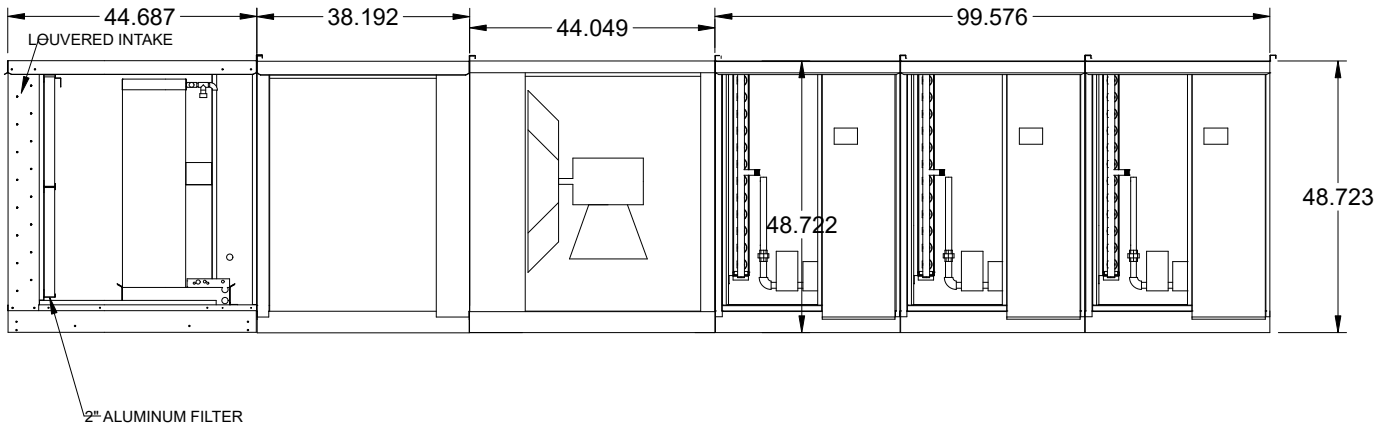
Power Venting
24 Volt Control Power

Gas Connections



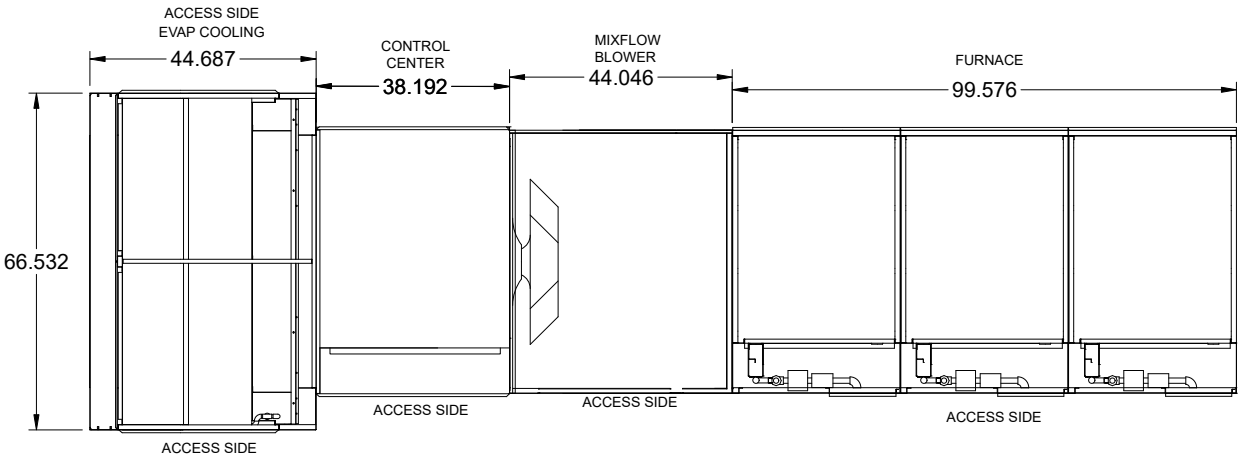
Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

ELEVATION VIEW



Notes - Elevation View
Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.
Order of unit sections is from intake of unit to discharge of unit.
Sections included on this unit: Cooling Section, Control Center Module Section, Blower Section, Furnace 1 Section, Furnace 2 Section, Furnace 3 Section
Insulation: Double Wall, from Furnace Section through end of unit.

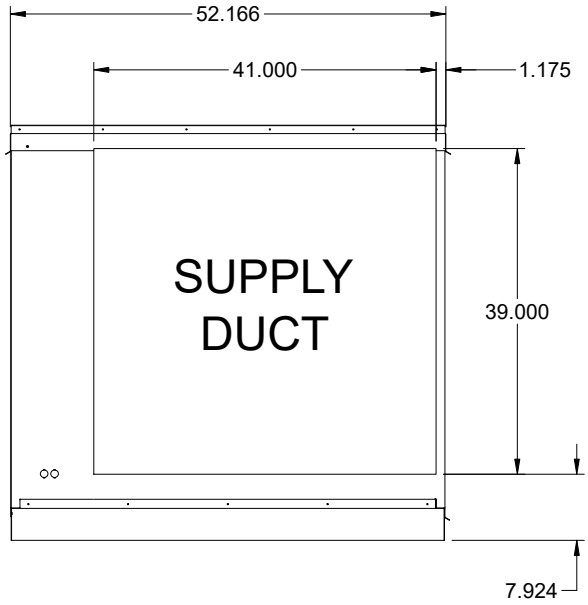
PLAN VIEW



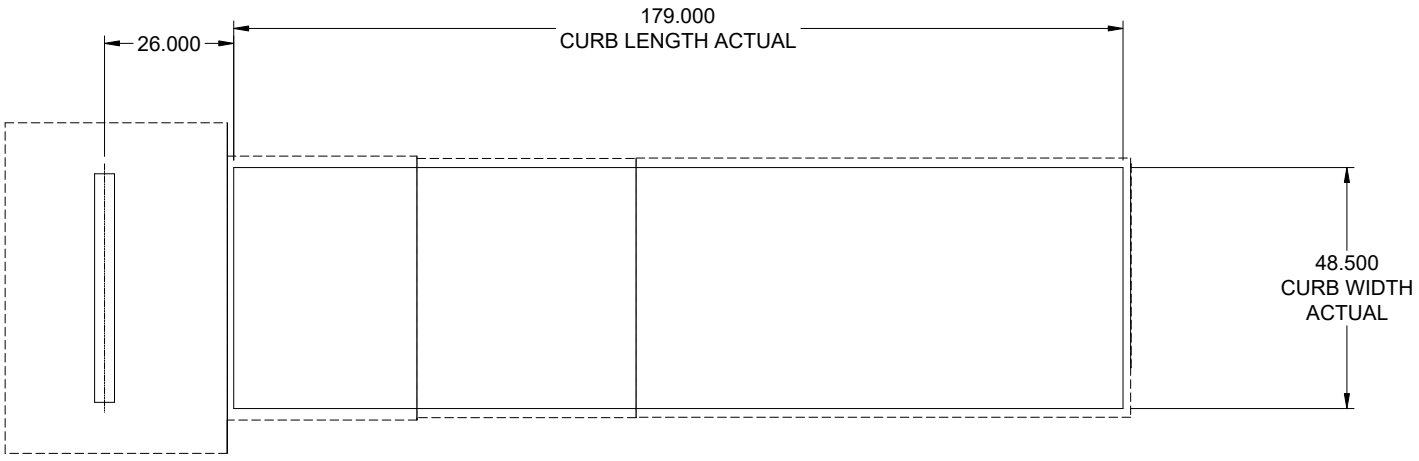
Notes - Plan View
Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

END VIEW



FOOTPRINT VIEW



Notes - Footprint View
Minimum Roof Opening: The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides. For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.
Maximum Roof Opening: There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb. For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.
The weatherhood and filter sections of the make-up air unit extend beyond the curb. This is by design, to prevent water infiltration.

Printed Date: 09/05/2022
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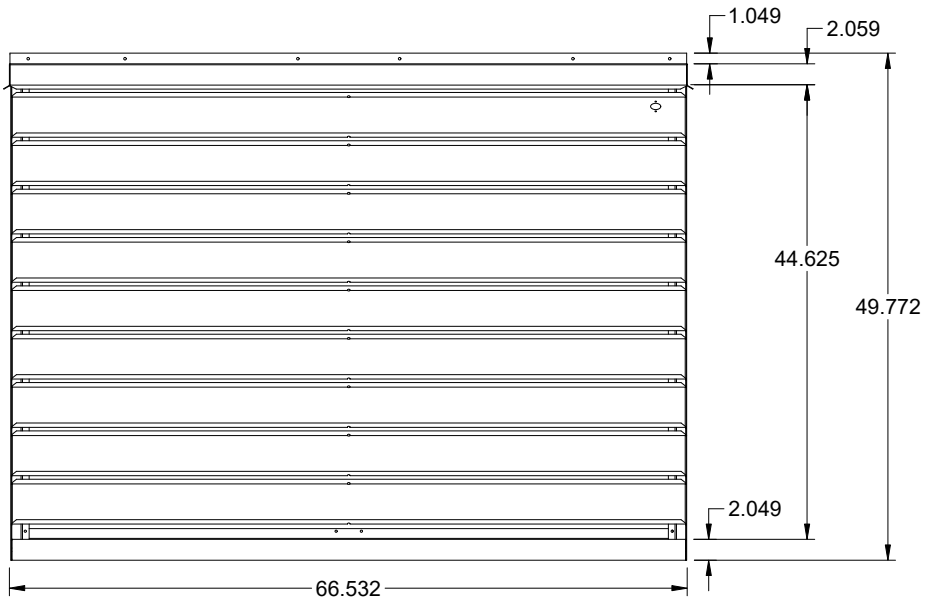
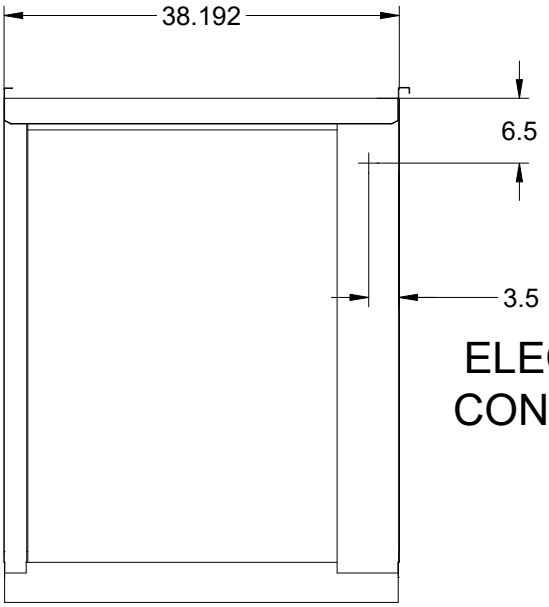
Mark: MUA-1
Model: IGX-P127-H32-MF-S

INTAKE VIEW



Electrical Connections



Clearance Specifications

Recommended Minimum Combustible Clearances				
	Floor (in.)	**Top (in.)**	**Sides (in.)**	**Ends (in.)**
Indirect Fired Units	0	0	0	0

Notes - Combustible Clearances
Clearance to combustibles is defined as the minimum distance required between the heating source and the adjacent combustible surfaces to ensure the adjacent surface's temperature does not exceed 90 F above the ambient temperature.
Reference venting guidelines for combustion blower clearances.

Recommended Minimum Service Clearances	
Housing 32 and less (in.)	**Housing 35 and higher (in.)**
42 on the controls side of the unit	N/A

Notes - Service Clearances
To ensure ample space for component removal (evaporative cooling media, coils, filters, etc.), service clearances should be 6 in. wider than the width of the module itself.

Printed Date: 09/05/2022
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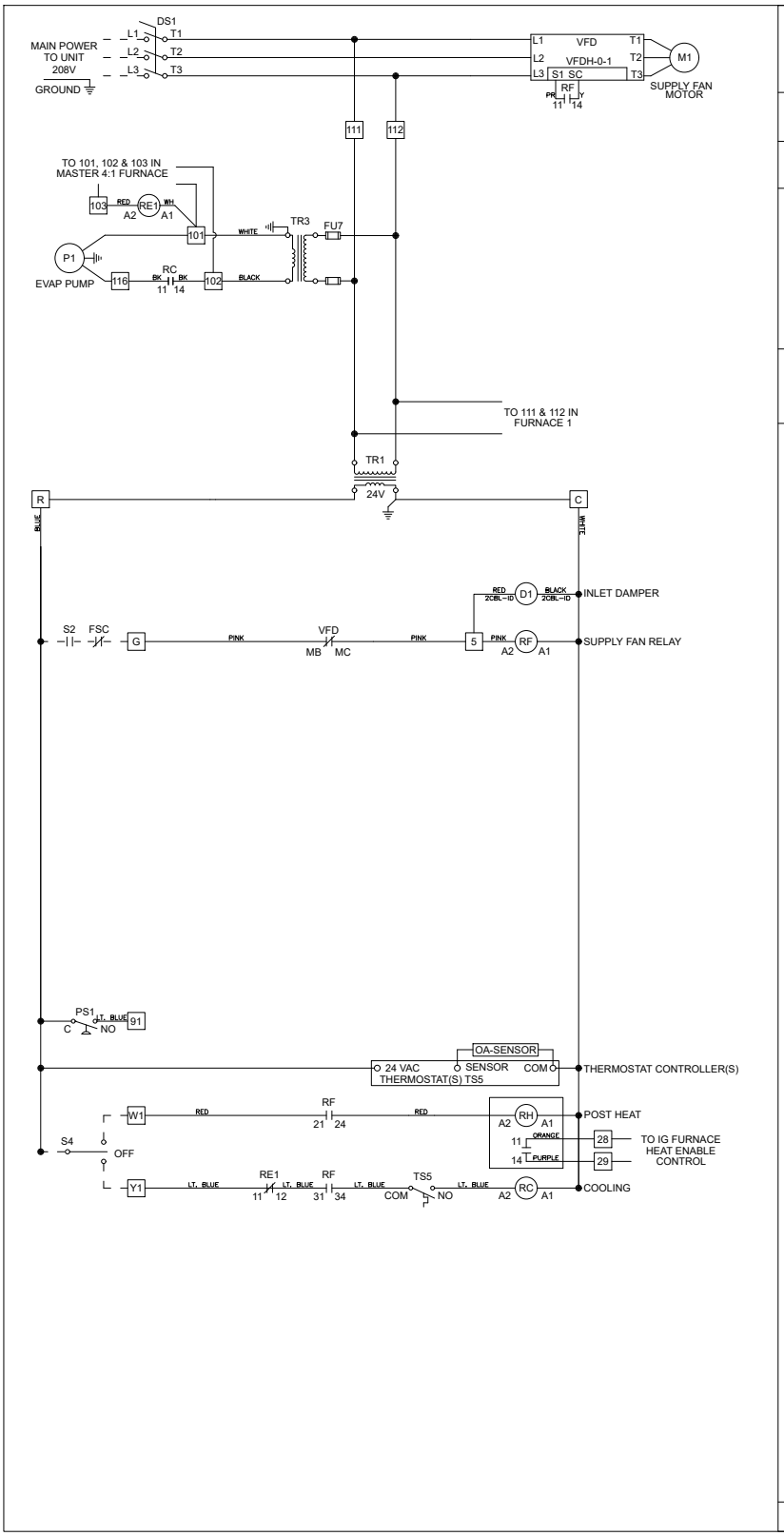
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Wiring Diagram



GREENHECK
Building Value in Air.

Wiring Diagram Code:

GI34N402B011A31AU15

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED – – – – –
FACTORY SUPPLIED AND WIRED ————

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

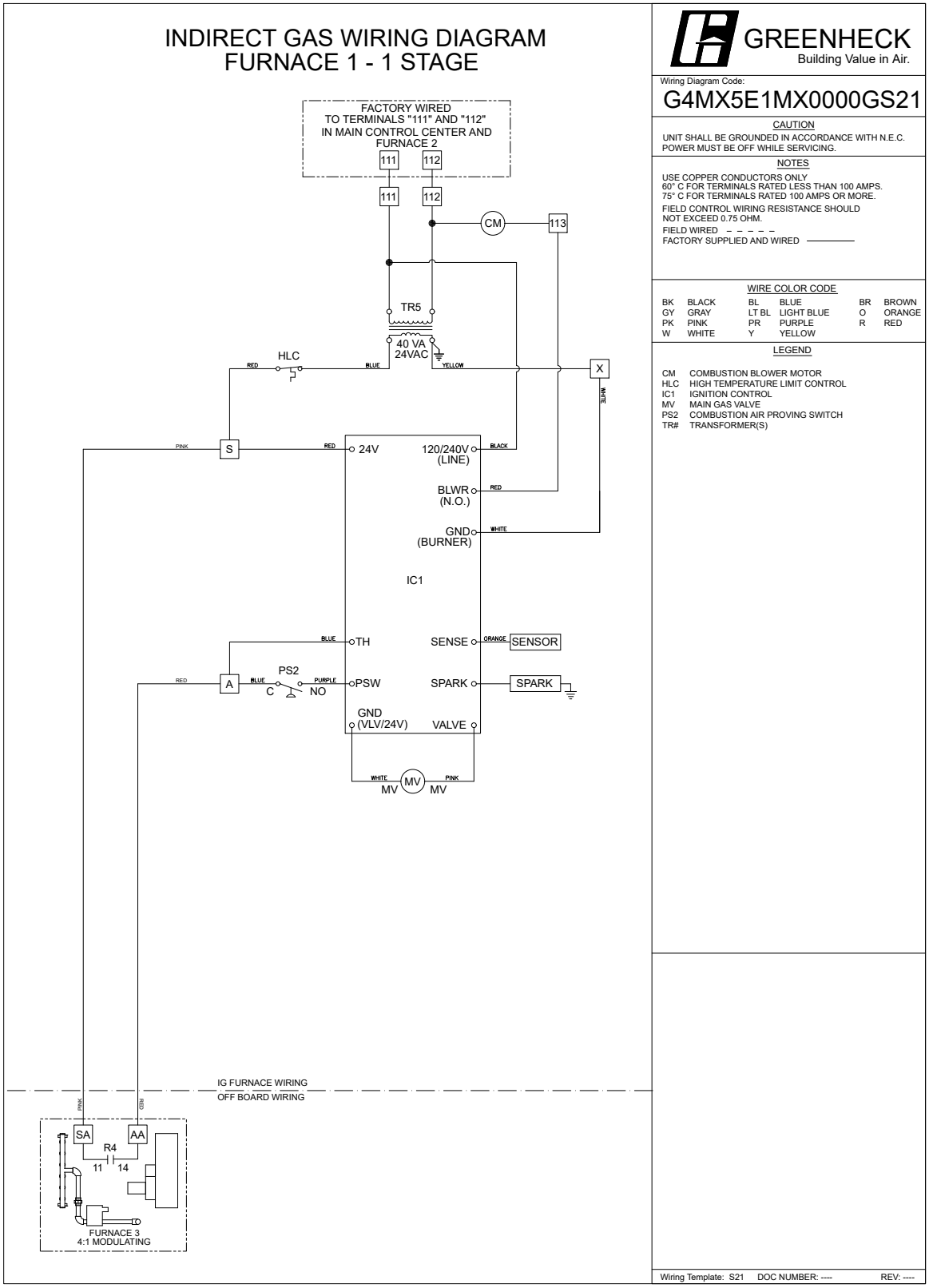
#AA	
DS1	MAIN DISCONNECT SWITCH
M#	MOTOR
RC	COOL RELAY
RF	SUPPLY FAN RELAY
RF1	FAN ENABLE RELAY
S4	HEAT AND COOL SWITCH
TR#	TRANSFORMER
TS5	INLET AIR SENSOR - COOL JUMPER = COOL : DIFFERENTIAL = 2

Template Drawing: U15 DOC NUMBER: ---- REV: ----

Manufacturer reserves right to change, alter, or improve this product at any time.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Furnace Wiring Diagram



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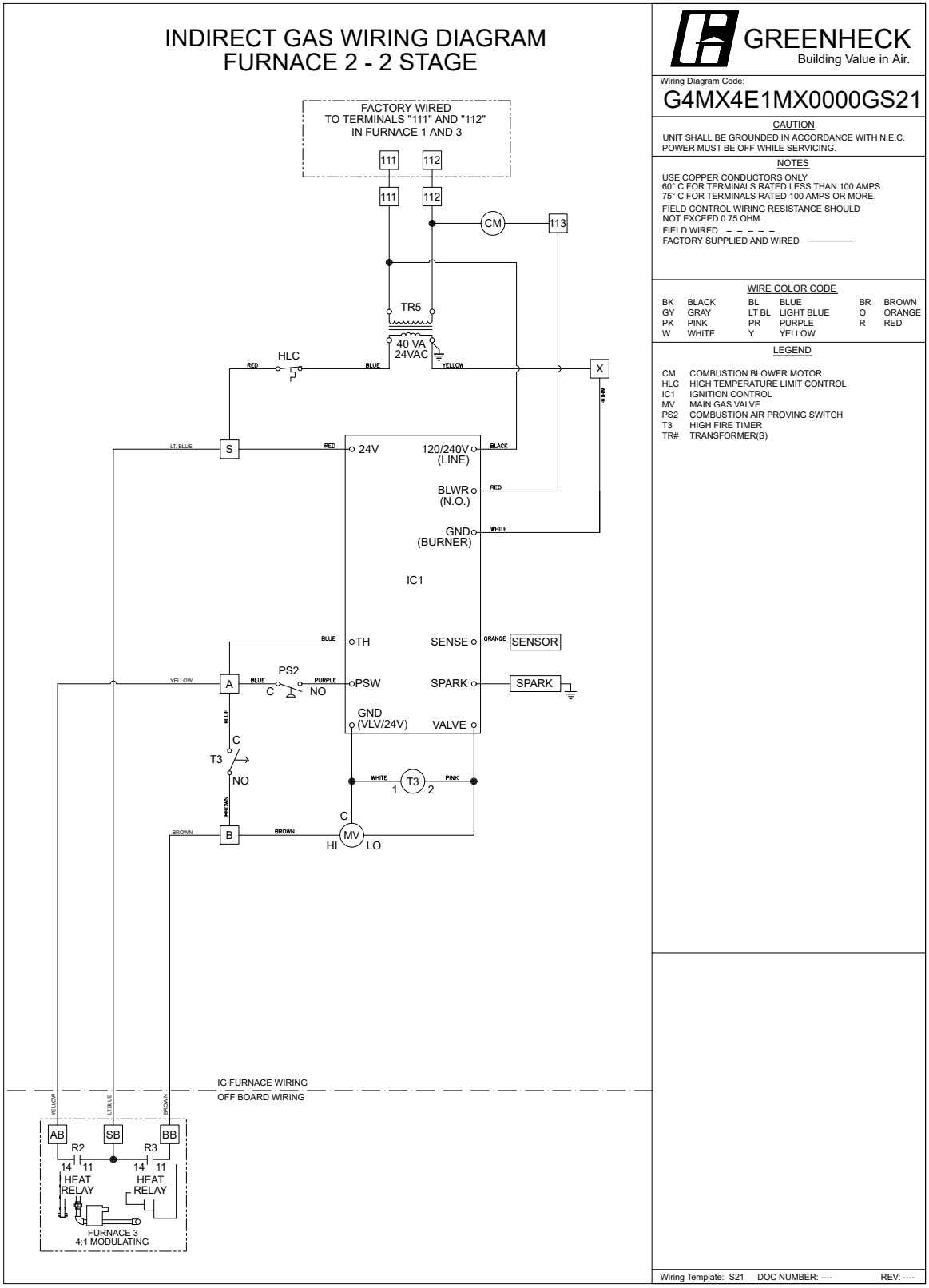
Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

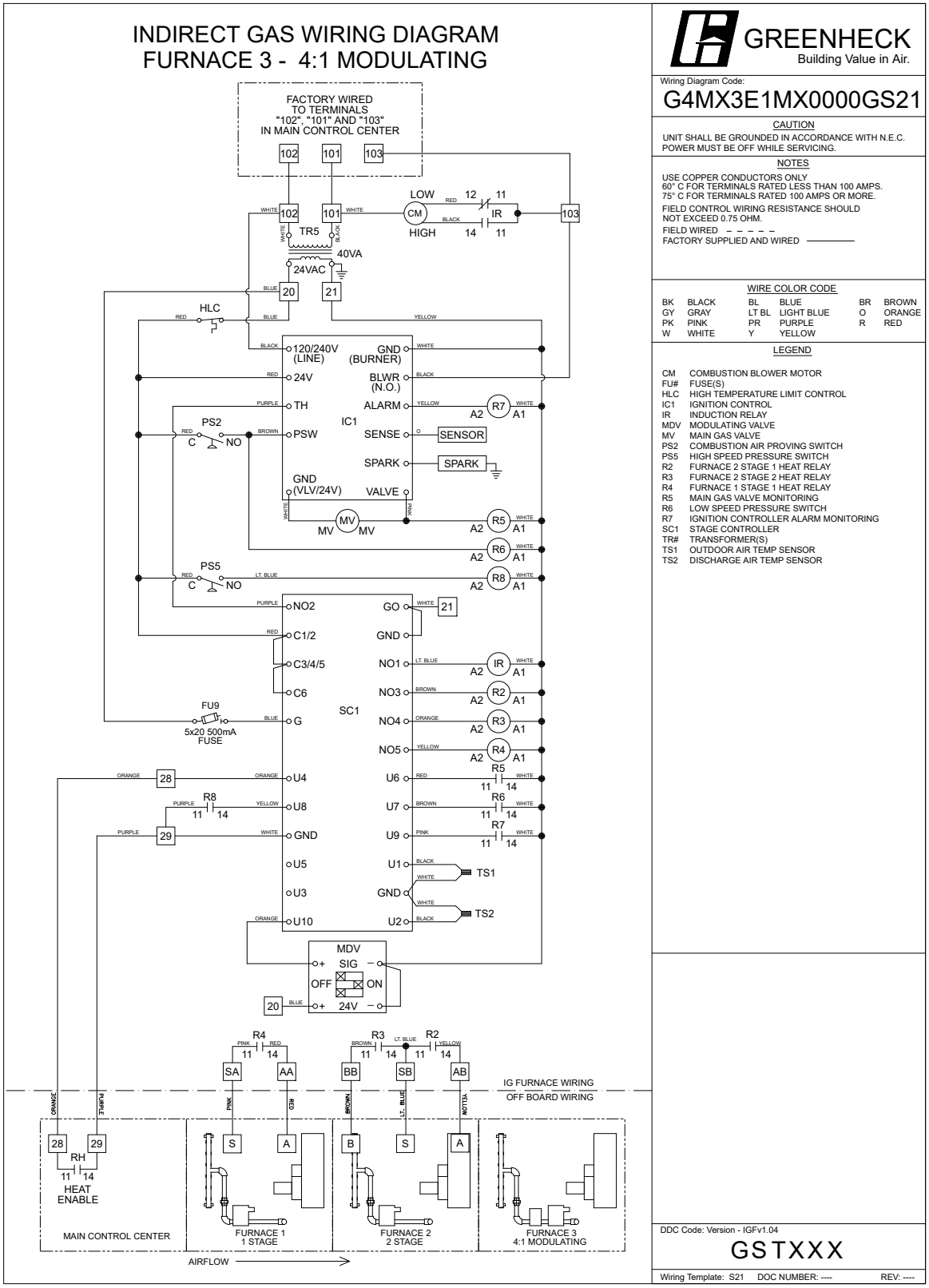
Furnace 2 Wiring Diagram



Manufacturer reserves right to change, alter, or improve this product at any time.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Furnace 3 Wiring Diagram



GREENHECK
Building Value in Air.

Wiring Diagram Code:
G4MX3E1MX0000GS21

CAUTION

UNIT SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C.
POWER MUST BE OFF WHILE SERVICING.

NOTES

USE COPPER CONDUCTORS ONLY
60° C FOR TERMINALS RATED LESS THAN 100 AMPS.
75° C FOR TERMINALS RATED 100 AMPS OR MORE.

FIELD CONTROL WIRING RESISTANCE SHOULD NOT EXCEED 0.75 OHM.

FIELD WIRED – – – – –
FACTORY SUPPLIED AND WIRED ————

WIRE COLOR CODE

BK	BLACK	BL	BLUE	BR	BROWN
GY	GRAY	LT BL	LIGHT BLUE	O	ORANGE
PK	PINK	PR	PURPLE	R	RED
W	WHITE	Y	YELLOW		

LEGEND

CM	COMBUSTION BLOWER MOTOR
FU#	FUSE(S)
HLC	HIGH TEMPERATURE LIMIT CONTROL
IC1	IGNITION CONTROL
IR	INDUCTION RELAY
MDV	MODULATING VALVE
MV	MAIN GAS VALVE
PS2	COMBUSTION AIR PROVING SWITCH
PS5	HIGH SPEED PRESSURE SWITCH
R2	FURNACE 2 STAGE 1 HEAT RELAY
R3	FURNACE 2 STAGE 2 HEAT RELAY
R4	FURNACE 1 STAGE 1 HEAT RELAY
R5	MAIN GAS VALVE MONITORING
R6	LOW SPEED PRESSURE SWITCH
R7	IGNITION CONTROLLER ALARM MONITORING
SC1	STAGE CONTROLLER
TR#	TRANSFORMER(S)
TS1	OUTDOOR AIR TEMP SENSOR
TS2	DISCHARGE AIR TEMP SENSOR

DDC Code: Version - IGFv1.04

GSTXXX

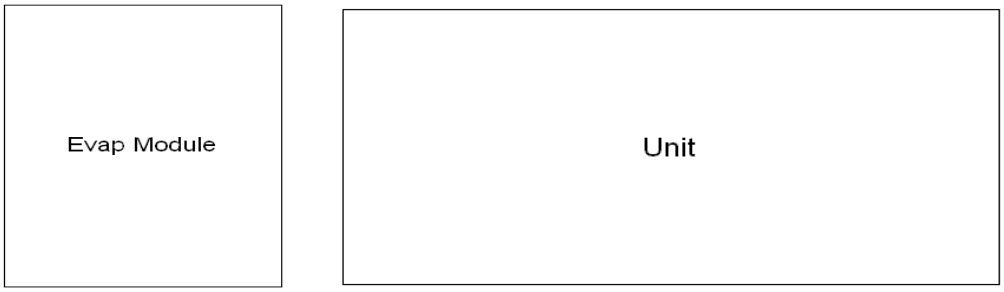
Wiring Template: S21 DOC NUMBER: ---- REV: ----

Manufacturer reserves right to change, alter, or improve this product at any time.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Dry Corner Weights

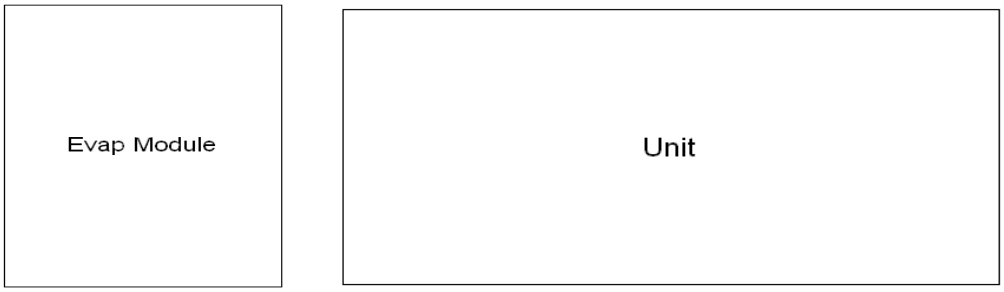
167 lb 116 lb 583 lb 514 lb



169 lb 118 lb 632 lb 558 lb

Wet Corner Weights

231 lb 181 lb 583 lb 514 lb

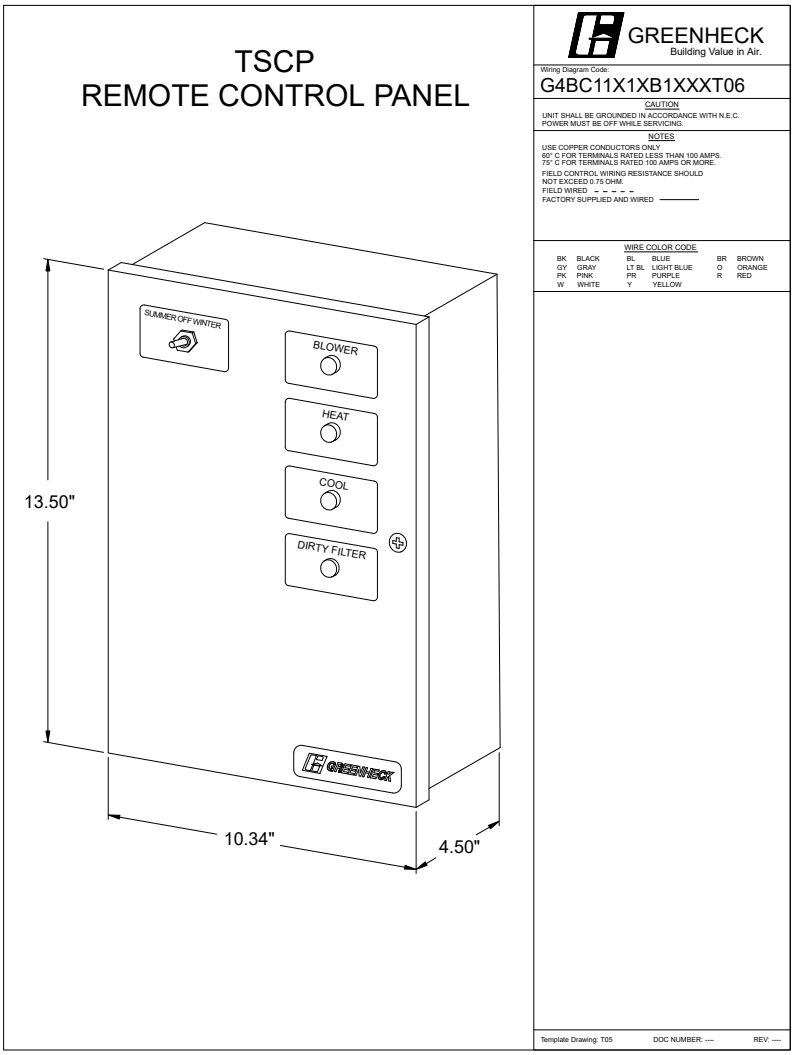


233 lb 183 lb 632 lb 558 lb

Notes

Estimated corner weights are shown looking down on unit and airflow from left to right. Weights are applied at the base of the unit. Evaporative cooling section shown separately due to calculation of dry and wet corner weights. Images not drawn to scale.

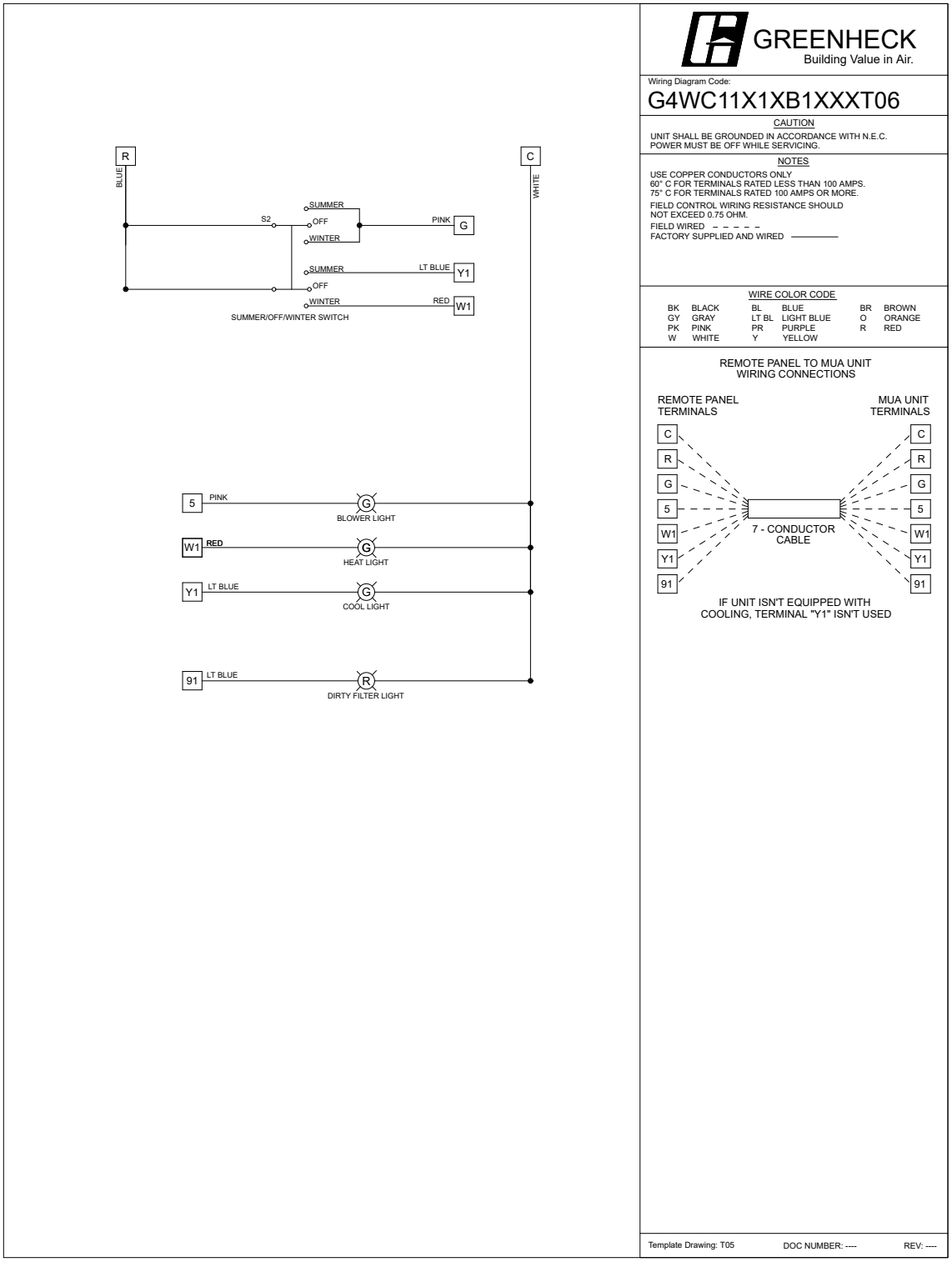
TSCP - Remote Control Panel



Standard Construction Features And Notes
Location of switches, lights and controls may vary.
All dimensions shown are in units of inches.
Galvanized steel with baked enamel finish.
Numbered terminal strip to match unit wiring.

Printed Date: 09/05/2022
Job: Ishi Conservation Camp Replace Kitchen
Mark: MUA-1
Model: IGX-P127-H32-MF-S

Remote Panel Wiring Requirements



The wiring drawings details the number of the wires and the type of wire that needs to be run from the unit control center to the panel. A detailed wiring schematic will be provided with the panel when the unit ships.

SEQUENCE OF OPERATIONS

Unit Controls
The unit shall be provided from the factory with:

- 24VAC Transformer
- Terminal Strip
- Supply fan VFD
- Factory mounted and wired outdoor air inlet damper with actuator
- Remote Control Panel

Remote Control Panel
A Permatector coated NEMA-1 rated remote control panel shall be shipped loose to control the basic operation of the unit. The panel shall contain the following:

- Summer / Off / Winter Switch
  Summer: Supply fan is enabled, heat is disabled, and cooling is enabled.
  Off: Supply fan is disabled.
  Winter: Supply fan is enabled, heat is enabled, and cooling is disabled.
- Blower Light
- Heat Light
- Cool Light
- Dirty Filter Light

Unit Start-Up Sequence

- Supply Fan Enable Is Received
- Outdoor air inlet damper actuator is energized
- Supply Fan Is Enabled

Supply Fan Sequence
The unit has been provided with a factory mounted variable frequency drive (VFD). The variable frequency drive shall control the supply fan speed as indicated by the following sequence:

Constant Volume
The VFD shall be programmed from the factory for a constant supply fan speed. This is to be adjusted for air balancing only and is not to be modulated.

Heating Control
A heating enable signal must be present and the supply fan must enabled before the unit will enable heating.

Heating Inlet Air Sensor (Heating Lockout)
The heating will be locked out when the outside air temperature is above the heating inlet air sensor set point (typical 65 F, adj.)

Indirect Gas Fired Heating (Modulating Control)
A Programmable Logic Controller (PLC) furnace controller shall modulate the furnace to maintain a supply air temperature set point. The controller shall include a LCD display and keypad for changing set points and monitoring furnace operation. A built-in commissioning sequence assists with proper and accurate start-up. This controller is responsible for furnace control only and does not control any other function of the unit. Additionally it has no Building Management System (BMS) communication capability. The supply temperature set point shall be controlled as follows:

Discharge Temperature Control
The heating supply temperature set point must be set locally at the controller.

Cooling Control
A cooling enable signal must be present and the supply fan must be enabled before the unit will enable cooling.

Cooling Inlet Air Sensor (Cooling Lockout)
The cooling will be locked out when the outside air temperature is below the cooling inlet air sensor set point (typical 80 F, adj.)

Evaporative Cooling (Recirculating Pump)
When cooling is enabled the pump recirculates water from the sump over the evaporative cooling media and a float valve maintains the water level in the sump. Supply and drain valves must be field supplied and installed.

Warranty Statement for Make-Up Air

Unit Warranty

Greenheck warrants the equipment to be free from defects in material and workmanship for a period of 18 months from the date of shipment. Initial startup must be completed within six months of the shipment date, and a startup report must be submitted to Greenheck.

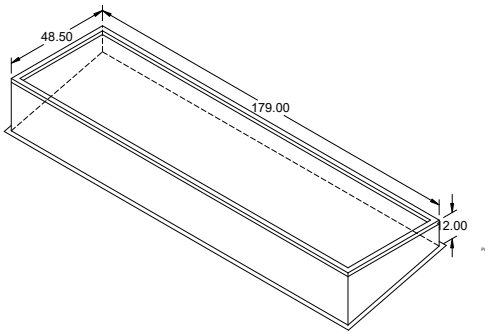
Heat Exchanger Extended Warranty

Greenheck warrants the stainless steel heat exchanger to be free from defects in material and workmanship for a period of 25 years from the shipment date.

Warranty Notes

Any component which proves defective during the warranty period will be repaired or replaced at Greenheck's sole option when returned to our factory, transportation prepaid. All warranties do not include labor costs associated with troubleshooting, removal, or installation. Greenheck will not be liable for any consequential, punitive, or incidental damages resulting from use, repair, or operation of any Greenheck product. These warranties are exclusive and are in lieu of all other warranties, whether written, oral, or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. No person (including any agent or salesperson) has authority to expand Seller's obligation beyond the terms of this warranty, or to state that the performance of the product is other than that published by Seller.

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.



Model: GPIP

Pitched Roof Curb

Standard Construction Features:

- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of either 18 ga galvanized steel or 0.064 in. aluminum - Designed for pitched roofs - Straight sided without a cant - Wood nailer for attachment of roof flashing material - 2 in. mounting flange - 1 in. thick 3 lb density insulation - Height - Available from 12 in. to 24 in. as specified in 0.5 in. increments. Notes: - The maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. - The minimum roof opening dimension should be at least 2.5 in. more than the damper dimension or recommended duct size. - The Roof Opening Dimension may or may not be the same as the Structural Opening Dimension.

General

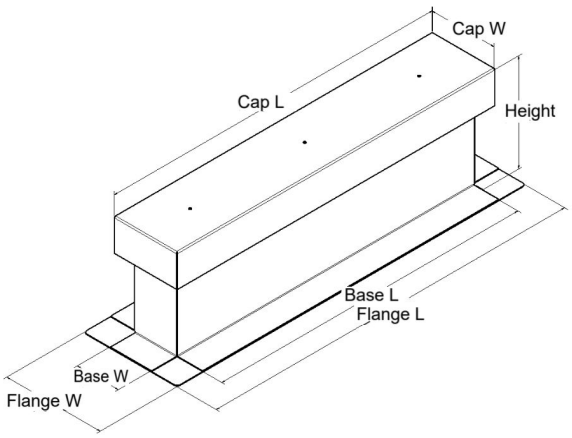
Tag	Qty	Model	Sizing Method	Undersizing (in.)	Pitch (in.)	Pitch Run	Weight (lb)	Shipped Assembled	Union Label
	1	GPIP-50 x 180.5	Nominal	1.5	???	Short Side	160	No	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Flange Width (in.)	Flange Length (in.)
12	50	180.5	48.5	179		

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3



Model: GESI

Flat or Pitched Roof Equipment Support

Standard Construction Features:

- Welded construction (see Material Note) - Wood nailer - Flashing cap. NOTES: - MAXIMUM design load of 400 lb per isolator. MATERIAL NOTE: - If Length <= 44 OR Height <= 12: Galvanized is 18 ga and Aluminum is 0.064 in. - If Length > 44 OR Height > 12: Galvanized is 16 ga and Aluminum is 0.080 in.

Dimensions

ID#	Tag	Qty	Length (in.)	Flange Width (in.)	Flange Length (in.)	Base Width (in.)	Base Length (in.)	Cap Width (in.)	Cap Length (in.)
Evap		1	46	7.5	50	4	46	5	47.5

Accessories

ID#	Material	Width (in.)	Height (in.)	Sizing
Evap	Galvanized	4	12	Nominal