DAKE | WELLS
architecture

Date: July 16, 2025

From: Alex Reeves,
Dake Wells Architecture
2100 Central St, suite 21, Kansas City, MO 64108
417-988-9631

Project: Lawrence Municipal Services and Operations Campus - Phase 1

23 34 01-1.2 EXHAUST FANS

23041-Lawrence Municipal Services and Operations Campus - Phase 1

Comments:

EF-15,16 PAGE 6
EF-19 PAGE 9

No exceptions taken.

DAKE | WELLS architecture, inc.
134 park central square, suite 300
springfield, mo 65806 p.417.831.9904

- ☐ REJECTED
- ☐ REVISE AND RESUBMIT
- ☐ MAKE CORRECTIONS NOTED
- ☒ NO EXCEPTIONS TAKEN

This review is for conformance with the design concept and compliance with the information given in the Contract Documents. This review is not for safety precautions, means, methods, procedures, techniques or construction sequences. This review does not warrant or represent that the information on the submittal is either accurate or complete. Contractor is responsible for all dimensions and quantities and for complying with the requirements of the Contract Documents.

REVIEWED BY areeves

DATE 07/16/2025

Submittal Review

Date: July 10, 2025 PKMR# 23.331

Project: Lawrence MSO

We have reviewed the following items: ☒ Attached

Returned: ☒ Electronic ☐ Courier ☐ Mail/UPS

Copies	Description
1	23 34 01-1.2 - Exhaust Fans

PEARSON KENT McKINLEY RAAF ENGINEERS, LLC
ENGINEER'S SUBMITTAL REVIEW STAMP

- ☒ REVIEWED – NO EXCEPTIONS TAKEN
- ☐ FURNISH AS NOTED OR CORRECTED
- ☐ REVISE & RESUBMIT INDICATED ITEMS ONLY
- ☐ REVISE & RESUBMIT ENTIRE SUBMITTAL
- ☐ REJECTED, RESUBMIT
- ☐ SUBMIT THE SPECIFIED ITEM(S)
- ☐ REVIEWED FOR INFORMATION ONLY
- ☐ REFER / RESPOND TO ATTACHED COMMENTS

Corrections or comments made on these submittals and/or shop drawings during this review do not relieve the contractor from compliance with the requirements of the contract documents, including the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents prepared by Pearson Kent McKinley Raaf Engineers, LLC. The contractor is still responsible for confirming and correlating all quantities and dimensions, selecting all fabrication processes and techniques of construction, coordinating their work with that of all other contractors, and performing their work in a safe and satisfactory manner.

Date 7/16/25 By: Kate M. Dennis

GENERAL COMMENTS: (Fully review submittal for additional specific comments in document)

McCownGordon
850 Main Street
Kansas City, Missouri 64105
P: (816) 960-1111

Project: 1072206 Lawrence MSO Campus
2400 Venture Park Drive
Lawrence, Kansas 66046
P: 816-960-1111

Submittal #23 34 00-01.2 - EXHAUST FANS - Product Data R2
23 34 00 - HVAC FANS

Revision	2	**Submittal Manager**	Grace Buckley (McCownGordon Construction, LLC)
Status	Open	**Date Created**	Jul 3, 2025
Issue Date	Jul 3, 2025	**Spec Section**	23 34 00 - HVAC FANS
Responsible Contractor	Temp-Con, LLC	**Received From**	
Received Date	Feb 28, 2025	**Submit By**	
Final Due Date	Jul 24, 2025	**Lead Time**	
Sub Job		**Cost Code**	
Location		**Type**	Product Data
Submittal Package			

Approvers Grace Buckley (McCownGordon Construction, LLC), Zach Kremer (Entegrity Partners), Kate Dennis (PKMR Engineers), Alex Reeves (Dake Wells Architecture)

Ball in Court Grace Buckley (McCownGordon Construction, LLC)

Distribution Brad Corkrean (McCownGordon Construction, LLC), Dylan Jenkins (Temp-Con, LLC), Grace Buckley (McCownGordon Construction, LLC), Jason Dunlap (McCownGordon Construction, LLC), Kevin Miller (McCownGordon Construction, LLC), Lily Quitno (McCownGordon Construction, LLC), Phillip Garcia (Temp-Con, LLC), Tyler Logsdon (McCownGordon Construction, LLC)

Description Revision of EF15, EF16, EF19

Product Data : Include rated capacities, furnished specialties, and accessories for each type of product indicated and scheduled.

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					
Grace Buckley		Jul 3, 2025		Pending	
Zach Kremer		Jul 10, 2025		Pending	
Kate Dennis		Jul 17, 2025		Pending	
Alex Reeves		Jul 24, 2025		Pending	

Project 07-2206 Submittal No. 233400-1.2

REVIEWED ONLY

Contractor's review is for general compliance with the information provided in the Contract Documents and for general conformance with the design concept of the project. Any action noted herein is subject to the requirements set forth in the Contract Documents. Subcontractor/Supplier is responsible for all dimensions which shall be confirmed at the jobsite; all fabrication processes and techniques of construction; the coordination of Subcontractor's work with that of all other trades, and the performance of Subcontractor's work in accordance with the Contract Documents

McCownGordon Construction

gbuckley 11:28:29 AM 07/03/2025

TEMP-CON
A TRIPLEPOINT COMPANY

15670 S. Keeler
Olathe KS 66062
(913) 768-4888

Submittal

Submittal#: 23.34.00 REV 2

Submittal Date: 07/02/2025

To: MCCOWN GORDON CONSTRUCTION
850 Main St.
KANSAS CITY MO 64105

Project: 240062
Lawrence Municipal Services Operations
2425 E 15th St
Lawrence KS

Prepared By: Bralen Bowker

Item	Description	Action Required	Date Required
1	Exhaust Fans	For Approval	05/16/2025

Please sign and date this form as proof that you are in receipt of the above listed items.
Return form to Temp-Con, LLC

Signed: _____ Date: _____

July 2, 2025

Submittal

Re-Submittal 2

Lawrence Municipal Services Operation Campus Ph 1

JRA Job #: Q3391

Temp-Con Inc.

Engineer: PKMR - Lenexa

Specification Section:	As Per Schedule & Drawings
Manufacturer:	Greenheck Corp.
Equipment:	Fans
Comments/Tags:	Resubmitting on EF15, EF16 & EF19 ONLY. Coated dampers included.

Presented per our interpretation of the specified section by:

Matt Warren

JRA Project Manager

Phone: (913) 609-4127

Office Phone: (913) 428-2729

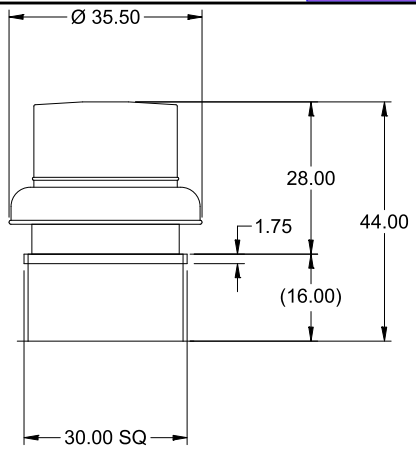
Email Address: mattwarren@jorban-riscoe.com

GREENHECK
Building Value in Air.

Printed Date: 07/02/2025
Job: Q3391 Lawrence MSO
Mark: EF-15,16
Model: G-180-VG

Model: G-180-VG

Direct Drive Centrifugal Roof Exhaust Fan



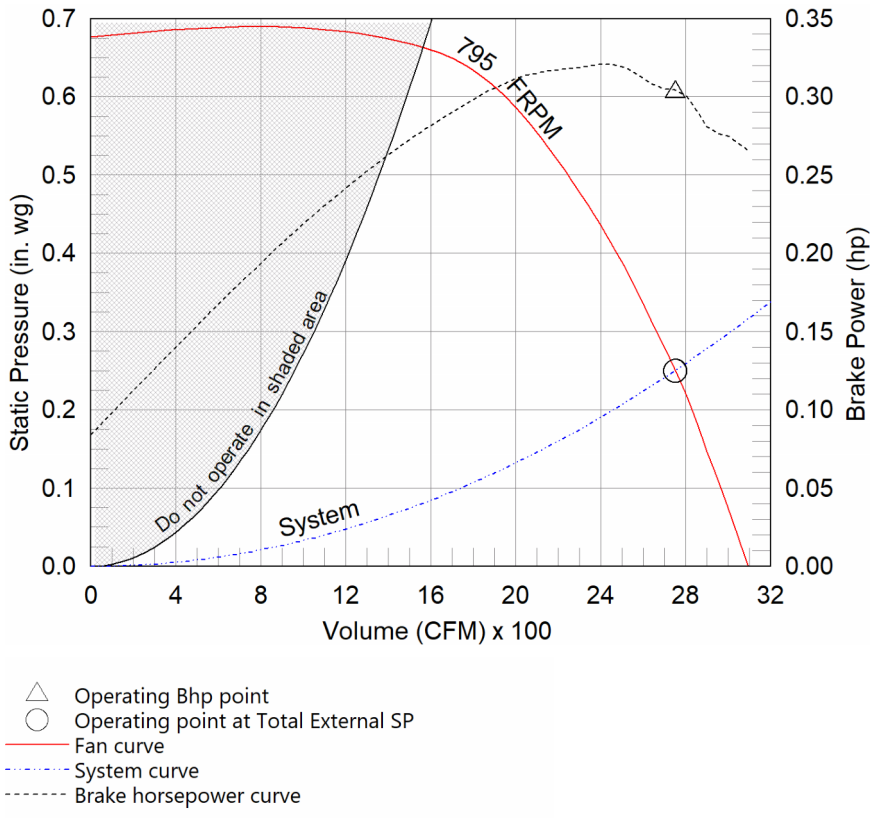
OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional	
Quantity	2
Weight w/o Acc's (lb)	75
Weight w/ Acc's (lb)	95
Weight w/ Acc's and Curb (lb)	138
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,750
Actual Volume (CFM)	2,750
Total External SP (in. wg)	0.25
Fan RPM	795
Operating Power (hp)	0.3
Elevation (ft)	1,096
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.072
Tip Speed (ft/min)	3,852
Static Eff. (%)	36

Misc Fan Data	
Fan Energy Index (FEI)	-
Outlet Velocity (ft/min)	1,329

Motor	
Motor Mounted	Yes
Size (hp)	3/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	900
Efficiency Rating	High
Windings	1
FLA (Amps)	8.8
Min. Circuit Ampacity (MCA)	11
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA



Notes:

All dimensions shown are in units of in.
*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory. MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).
LwA - A weighted sound power level, based on ANSI S1.4
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International
Sones - calculated using ANSI/AMCA 301 at 5 ft

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	71	75	70	65	65	60	49	43	69	58	8.4

Model: G-180-VG

Direct Drive Centrifugal Roof Exhaust Fan

Tags: EF-15 EF-16

Standard Construction Features:

- Aluminum housing - Backward inclined composite (sizes 60-95) or aluminum (sizes 97-300) wheel - Aluminum curb cap with prepunched mounting holes - Birdscreen - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

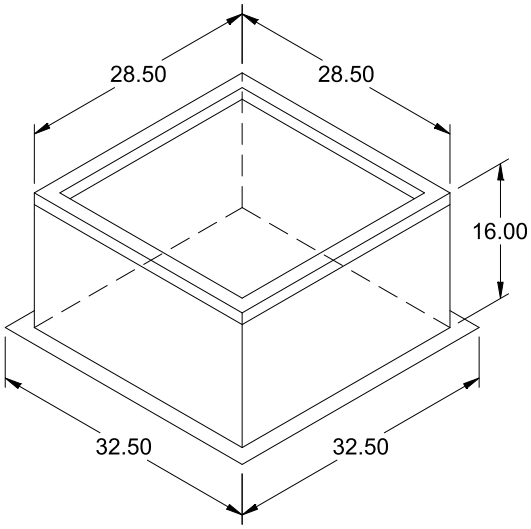
Selected Options & Accessories:

Motor - Vari-Green EC motor
Control - Dial for balancing
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-4X, Toggle,
Junction Box Mounted & Wired
Foam Curb Seal (Factory Applied)
Coated with Permatector, Concrete Gray-RAL 7023, Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Aluminum Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, WD-100-PB-24X24, Gravity Operated, Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-30-G16

The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.
If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.



Model: GPI

Roof Curb

Tags:

EF-15 EF-16

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 - Straight Sided without a cant - 2 in. mounting flange - 3 lb density insulation - Height - Available from 12 in. to 42 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. - Damper Tray is optional and must be specified. Tray size is same as damper size. - Security bars are optional and must be specified. Frames and gridwork are all 12 ga steel.

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
	2	GPI-30	Nominal	1.5	44	Yes	No Preference

Dimensions

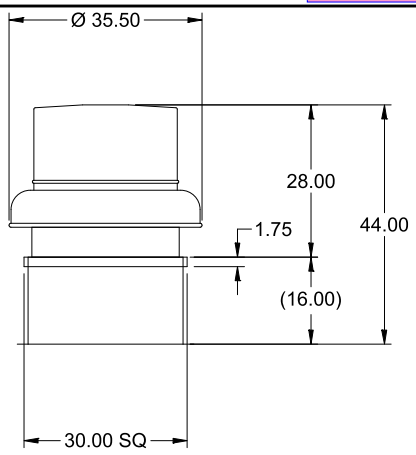
Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
16	30	30	28.5	28.5	25	25	29	29
*May not be applicable								

Accessories

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

Model: G-180-VG

Direct Drive Centrifugal Roof Exhaust Fan



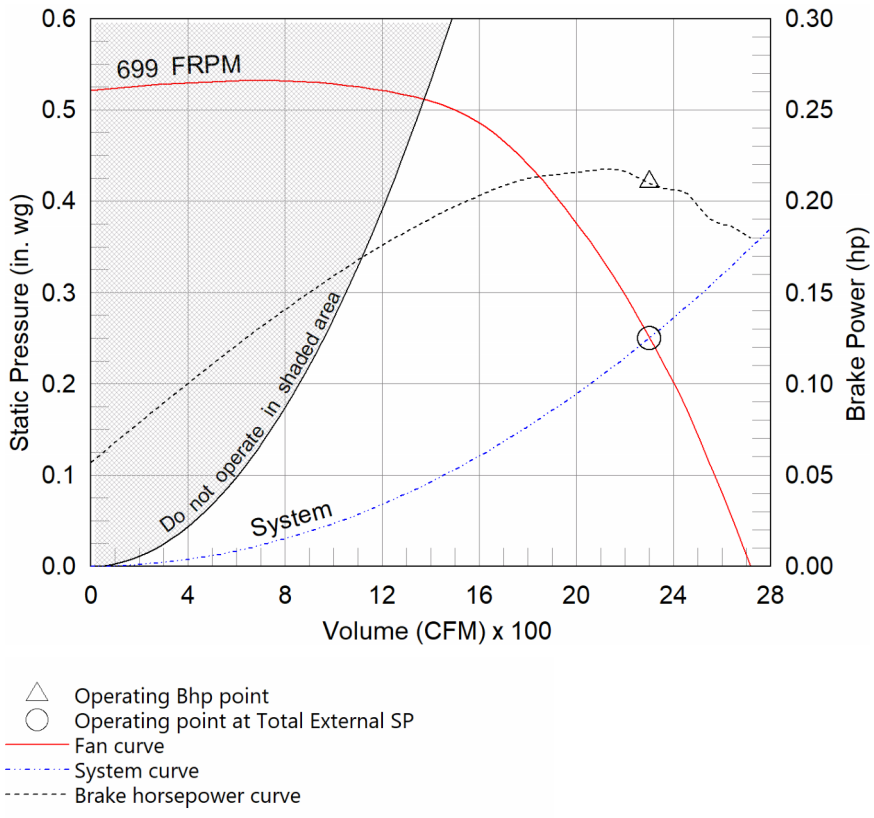
OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	75
Weight w/ Acc's (lb)	95
Weight w/ Acc's and Curb (lb)	138
Standard Curb Cap Size (in.)	30 x 30
Optional Damper (in.)	24 x 24
Roof Opening (in.)	26.5 x 26.5

Performance	
Requested Volume (CFM)	2,300
Actual Volume (CFM)	2,300
Total External SP (in. wg)	0.25
Fan RPM	699
Operating Power (hp)	0.21
Elevation (ft)	1,096
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.072
Tip Speed (ft/min)	3,383
Static Eff. (%)	43

Misc Fan Data	
Fan Energy Index (FEI)	-
Outlet Velocity (ft/min)	1,111

Motor	
Motor Mounted	Yes
Size (hp)	3/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	900
Efficiency Rating	High
Windings	1
FLA (Amps)	8.8
Min. Circuit Ampacity (MCA)	11
Max. Overcurrent Protection (MOP)	20
Short Circuit Current Rtg (SCCR)	5 kA



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	68	74	66	60	62	55	45	39	66	54	6.9

Notes:

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LwA - A weighted sound power level, based on ANSI S1.4
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Direct Drive Centrifugal Roof Exhaust Fan

Standard Construction Features:

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Selected Options & Accessories:

Motor - Vari-Green EC motor
Control - Dial for balancing
Standard Curb Cap Size - 30 Square
UL/cUL 705 Listed - "Power Ventilators"
Switch, NEMA-4X, Toggle,
Junction Box Mounted & Wired
Foam Curb Seal (Factory Applied)
Coated with Permatector, Concrete Gray-RAL 7023, Fan And Attached Acc
Birdscreen: Aluminum, nom. 86% Free Area
Aluminum Wheel Material
Conduit Chase Qty 1
Unit Warranty: 1 Yr (Standard)
Damper Shipped Loose, WD-100-PB-24X24, Gravity Operated, Coated, Nominal Size

Selected Sub Marks

See individual submittals for full details
GPI-30-G16

The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.
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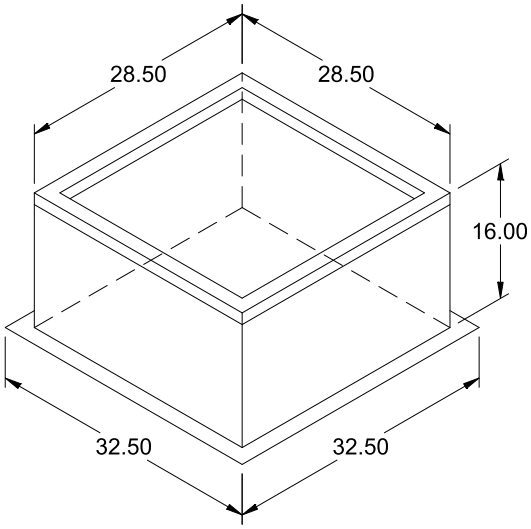

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General

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	1	GPI-30	Nominal	1.5	44	Yes	No Preference

Dimensions

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*May not be applicable								

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