Environmental Management and Construction Plan

Appendix F

Meter Station Building Specifications

Empire Generating Co, LLC 16" Gas Pipeline Interconnect Project

October 2008

EMPIRE GENERATING PROJECT

Empire Generating Company, LLC 16" Natural Gas Pipeline

SPECIFICATION

FOR A

METER SKID BUILDING

A	9/29/08		Issued for DPS Submittal	TSB	RBS	CK	
REV.	DATE	R	EASON FOR REVISION	ORIG	LEAD	PM	CLIENT
SPECI	FICATIO	N No.	15062-A				_

PROJECT	SPECIFICATION	ORIGINAL DATE: 09/29/08
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR A	REV: A
	METER SKID BUILDING	REVISION DATE: 09/29/08

TABLE OF CONTENTS

1.0	GENERAL
2.0	EQUIPMENT AND SERVICES BY VENDOR1
3.0	EQUIPMENT AND SERVICES BY BUYER1
4.0	CODES, STANDARDS, AND SPECIFICATIONS1
5.0	DESIGN CRITERIA1
6.0	METER BUILDING
7.0	ROOF AND WALL PANELS2
8.0	DOCUMENTATION AND DRAWINGS
9.0	INSPECTIONS AND TESTING4
10.0	SHIPPING AND HANDLING4
11.0	WARRANTY4
12.0	ATTACHMENTS4

PROJECT		SPECIFICATION	ORIGINAL DATE: 09/29/08
	EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR A	REV: A
		METER SKID BUILDING	REVISION DATE:09/29/08

1.0 GENERAL

- 1.1 Scope: This specification describes the RFQ requirements for one (1) meter skid building as described herein.
- 1.2 Tag Number
 - 1.2.1 10C-FG-SKD-002

2.0 EQUIPMENT AND SERVICES BY VENDOR

- 2.1 Design and fabrication of one (1) meter skid building as described herein.
- 2.2 The building shall be shipped in sections to allow on-site installation on the foundation with minimal labor. All connecting fasteners, seals, appurtenances, and joint connections shall be supplied with the building.

3.0 EQUIPMENT AND SERVICES BY BUYER

3.1 Buyer shall supply on-site installation services.

4.0 CODES, STANDARDS, AND SPECIFICATIONS

- 4.1 AISC Specification for the Design, Fabrication and Erections of Structural Steel for Buildings
- 4.2 AISC Code of Standard Practice for Steel Buildings and Bridges
- 4.3 AISC Steel Construction Manual
- 4.4 ANSI- American National Standards Institute
- 4.5 ASCE 7-05 Design Loads for Buildings and other Structures
- 4.6 AWS D1.1, "Structural Welding Code
- 4.7 CFR 49 Section 192.625, Transportation
- 4.8 IEEE- Institute of Electrical & Electronic Engineers
- 4.9 NEMA- National Electric Manufacturers Association
- 4.10 NFPA 70/NEC- National Electric Code
- 4.11 ICC International Building Code 2006 and local amendments

5.0 <u>DESIGN CRITERIA</u>

- 5.1 Site Conditions
 - 5.1.1 Elevation: 19 feet
 - 5.1.2 Ambient Temperature Range: -18 to 100 °F
 - 5.1.3 Maximum Wind Speed: 90 mph, exposure C, Iw=1.15
 - 5.1.4 Seismic

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PROJECT	SPECIFICATION	ORIGINAL DATE: 09/29/08
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	METER SKID BUILDING	REVISION DATE:09/29/08

5.1.4.1 Ss = 25% g, Si 9% G

5.1.4.2 Site Class D

5.1.4.3 Ie = 1.25

5.1.5 Ground Snow Load: 65 psf, Is=1.1

5.2 Building Code

- 5.2.1 International Building Code (IBC) and New York State Uniform Building Code. The more stringed code shall govern.
- 5.2.2 The building shall be supplied with a New York State certification label.
- 5.3 Electrical Classification: Class I, Division 2, Group D.

6.0 METER BUILDING

- 6.1 The building dimensions: 13'-6"w x 24'l x 8'h (minimum height). Final building dimensions to be supplied by skid fabricator.
- 6.2 The building shall have a gable roof and gutters. The building shall conform to Parkline document numbers A-AL-8-16-G and 13122GAB, 8' to 16' wide Gable Building with Gutter and Gable Building respectively.

7.0 ROOF AND WALL PANELS

- 7.1 Roof and wall panels shall have a painted finish and shall conform to Parkline document number A-RWP, *Roof and Wall Panel Design*.
- 7.2 The roof and wall panel color coating shall carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The Panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E-84 test procedures.
- 7.3 An awning which conforms to Parkline document number AWNING, *Awning Installation Details* shall be installed above each door.
- 7.4 The finish coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Coatings and color
 - 7.4.1 Door Color: Poly White
 - 7.4.2 Roof Panel Color: Arctic White
 - 7.4.3 Wall Panel Color: Shell Gray
 - 7.4.4 Framed Opening Trim Exterior: Shell Gray

PROJECT		SPECIFICATION	ORIGINAL DATE: 09/29/08
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		METER SKID BUILDING	REVISION DATE:09/29/08

7.5 Doors

- 7.5.1 One (1) 6'-0" wide x 7'-0" tall double door which conforms to Parkline document number A-DL, *Hollow Metal Door*. Doors shall be of the double swing out (DSO) type.
 - 7.5.1.1 Each door shall be supplied with a closer, panic exit device, keyed entry lockset, threshold, weather stripping, and three pair steel template hinges.
 - 7.5.1.2 Locksets shall be keyed to match other doors.
 - 7.5.1.3 Doors shall be prime painted with manufacturer's standard primer.
 - 7.5.1.4 Location: Centered on 24' side of building
- 7.5.2 Two (2) 3'-0" wide x 7'-0" tall doors which conform to Parkline document number A-DL, *Hollow Metal Door*. Door shall be of the left hand swing out (LHSO) type.
 - 7.5.2.1 Each door shall be supplied with a closer, panic exit device, keyed entry lockset, threshold, weather stripping, and one and a half pair steel template hinges.
 - 7.5.2.2 Locksets shall be keyed to match other doors.
 - 7.5.2.3 Doors shall be prime painted with manufacturer's standard primer.
 - 7.5.2.4 Location: The doors shall be located on the right wall when facing the double swing out doors from the outside of the building. One door shall be centered 6'-0" from the edge of the wall and the other door centered at 10'-0" from the edge of the wall. Reference attached sketch for information on the location of the doors.

7.6 Ventilation

- 7.6.1 The building shall be supplied with a ridge vent which conforms to Parkline document number A-RV, *Roof Ventilator*.
- 7.7 Insulation
 - 7.7.1 Insulation is not required for this building.

8.0 DOCUMENTATION AND DRAWINGS

- 8.1 Vendor shall provide the documentation and drawings listed on the Vendor Drawing & Data Requirements form.
- 8.2 The erection drawings shall be prepared for the building covered by these specifications showing the location of all roof and wall accessories and the exact anchor bolt locations required for each accessory. The drawings shall also indicate the weight of individual sections and the installed building weight.
- 8.3 The selected building manufacturer shall provide the building purchaser with complete THIS DOCUMENT IS THE PROPERTY OF LG CONSTRUCTORS. ALL RIGHTS RESERVED. THIS DOCUMENT SHALL NOT BE DISCLOSED TO THIRD PARTIES WITHOUT WRITTEN APPROVAL FROM LG CONSTRUCTORS.

PROJECT SPECIFICATION ORIGINAL DATE: 09/29/08 EMPIRE GENERATING PROJECT NO: 360473 STRUCTURAL SPECIFICATION FOR A REV: A

design certification signed, meeting the New York State Certificate requirements.

METER SKID BUILDING

REVISION DATE:09/29/08

9.0 INSPECTIONS AND TESTING

- 9.1 Materials and fabrication shall be subject to Buyer's inspection. Buyer's representative shall have access to vendor's facilities to inspect material and fabrication.
- 9.2 The approval or waiver of inspection by Buyer shall not release the vendor of responsibility to meet the requirements of this specification and referenced codes and standards.

10.0 SHIPPING AND HANDLING

10.1 Vendor shall ship the product to the new Measurement and Regulation Station located near the Tennessee Gas Pipeline No. 200 near its crossing of Route 91

11.0 WARRANTY

11.1 The Vendor guarantees all equipment to be constructed and tested in accordance with the requirements of this specification. Further, the Vendor guarantees the equipment to satisfactorily perform in accordance with this specification and to be free from defective materials and workmanship for a period as stipulated in the contract Terms and Conditions.

12.0 ATTACHMENTS

- 12.1 13122-A Vendor Drawing & Data Requirements Form
- 12.2 A-AL-8-16-G 8' to 16' wide Gable Building with Gutter
- 12.3 A-RWP Roof and Wall Panel Design
- 12.4 A-DL Hollow Metal Door
- 12.5 13122HM1 Hollow Metal Door (Sections and Sizes)
- 12.6 A-RV Roof Ventilator (Ridge Ventilator)
- 12.7 AWNING Awning Installation Details
- 12.8 WD-30 3'-0" Wide Walk Door Installation
- 12.9 WD-60 6'-0" Wide Walk Door Installation
- 12.10 Building Color Sample

END OF DOCUMENT



VENDOR DRAWING & DATA REQUIREMENTS

15062-A – Meter Skid Building

Project: Empire Generating Pro	ject	Project No: 360473	Client: Empire Generating Company, LLC
RFQ No:	PO No:	1	Vendor:
Description & TAG No. Meter Skid and Building, 10C-FG-SKD-002			
Revision No: A	Date: 9/29/08	8	Issued by: R. Smetana

NOTE

FINAL CERTIFIED DRAWINGS AND DOCUMENTS MUST BE SUBMITTED WITHIN TWO WEEKS OF FABRICATION AND TESTING COMPLETION.

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	(REQUIRED	AGREED
	(DESCRIPTION	BY BUYER	BY SELLER
	(house the And Test Blog (governing for hid, detailed ADO)	WEEKS ARO	DATE*
X X			Inspection And Test Plan (generic for bid; detailed ARO)		
	(Fabrication, Quality Surveillance and Delivery Schedule		
			Priced recommended list for spare parts and special tools		
X			Signed Vendor Drawing and Data requirements form with "Agreed by Seller, Date"	With bid	
Х			List of any and all exceptions to specifications	With bid	
		Х	Document Index (Drawings, Procedures, etc) and Submission Schedule	1	
			Welding Procedures, Procedures Qualification Records		
			NDE Procedures		
			PWHT Procedures		
			Hydrotest Procedures		
			Equipment Data Sheet(s), certified required		
			Data Sheets for supplied instrumentation and other 3 rd party devices, certified required		
			All Code / Design Calculations, certified required		
			Allowable Nozzle Load Calculations		
			General Arrangement Drawings, certified required		
Х	(X		Assembly, Construction and Erection Drawings	4	
			Shop Detail Drawings showing piece match-marking, as applicable		
			Equipment Detail Drawings / internal sections with complete bills of materials		
			Internals and Internal Attachments Drawings		
			External Attachments Drawings (ladders, platforms, pipe supports, etc)		1
Х	(X		Support Requirements Drawings complete with Anchor bolt size and locations	4	1
			- Building mass, shipping weights, support loads (for all load cases)		
			Surface preparation and Painting / Galvanizing Procedure		
	Х		Complete Equipment Data Book	2 weeks A/C	1
			Complete Manufacturer's Record Book	2 weeks A/C	
			Certified Component As-Built Drawings		
	Х		Inspection Travel Sheets	2 weeks A/C	
			Material Specification (Material Test Reports, Mill Certificates, etc)		
			NDE Test Reports		
			PWHT records including charts		
			Hydrostatic Test Report including charts		
			Equipment Nameplate Rubbing		
			Installation, Operation & Maintenance Manuals for vessel		i
			Installation, Operation & Maintenance Manuals for 3 rd party devices		i
	Х		Code Certification / Supporting Documentation	2 weeks A/C	i

 $A/C-After\ Completion$

ARO - After receipt of Order

*Seller to complete and return with bid

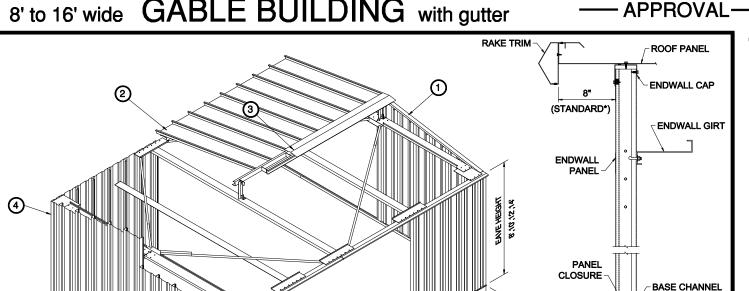
8' to 16' wide GABLE BUILDING with gutter

GUTTER

TRIM

PANEL CAP

(STANDARD)



ROOF PANEL

EAVE DETAIL

EAVE

CAP

TYPE AL Roof Design

CORNER DETAIL

- A. Each "Type AL" building shall have a gable roof with a slope of 2" in 12". Interlocking roof panels shall be nominal 24 gauge, fastened to an eave cap with $\frac{1}{4}$ " diameter Type 430 stainless steel bolts through factory punched holes. The ridge of the roof shall be a welded double channel assembly sealed with a minimum 20 gauge steel cover.
- B. The interlocking panel roof system shall extend a minimum of 0'-8" over the endwall panels* and a minimum of 6" over the sidewall panels of the building
- C. The building roof line shall be finished with nominal 26 gauge factory painted rake trim having matching ridge and eave cornices. Color of rake trim and cornices shall be Arctic White or Roman Bronze.
- D. The sidewalls of the building shall have a nominal 26 gauge factory painted gutter and downspout system to match the rake trim.

Structural Framing

WALL PANEL

Angle or channel bracing components shall be placed across the building width to allow the building width to allow transmission of horizontal wind loads. All wind bracing components shall be of nominal 14 gauge galvanized steel.

BASE FLASHING

RIDGE

RIDGE ASSEMBLY

CROSS

STRUT/STRAP

ANCHOR BOLT

ROOF **PANEL**

WALL SECTION

RIBBON CAULKING

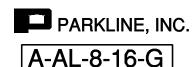
RIDGE STRUT

CLEAR HT. = EAVE HT. - 2 1/2"

RIDGE DETAIL

Where required for proper transmission of lateral wind loads, structural frame wind bents shall be installed. Wind bents shall consist of a bolted column and rafter assembly of steel conforming to ASTM A 36 specifications.

> * 8" ENDWALL OVERHANG NOT AVAILABLE ON **BUILDINGS WITH P68 ROOF PANELS**



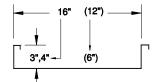
ROOF AND WALL PANEL DESIGN

— APPROVAL

ROOF PANEL DESIGN

Roof panels shall be supplied in a single continuous length from eave to ridge line, Gable (AL), or eave line, Shed (S), and shall be designed to tightly interlock so that no fasteners are required at intermediate points along the panel side laps. Roof panels shall be a maximum of 16" wide with a flat surface between the interlocking

side ribs. The interlocking ribs shall be a minimum 3" high, and shall be turned upwards. All roof panels shall be factory punched for connection at the eave of the building.



ROOF PANEL FINISH (STANDARD)

Roof panels shall be a minimum of 24 gauge steel coated on both sides with a coating of corrosion resistant aluminum zinc alloy applied by a continuous hot dipping process.

Coating weight shall be a minimum of 0.32 oz. of aluminum-zinc alloy per square foot of coated sheet (both sides) - equivalent to approximately 0.80 mil. thickness on each side. Minimum yield strength of panel material shall be 50,000 PSI.

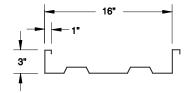
(Optional) PAINTED ROOF PANEL FINISH (Available at additional charge)

Roof panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 525 specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of panel materials shall be 50,000 PSI. All exterior surfaces of the galvanized steel roof panels, shall receive two factory, roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for roof panels shall be a white polyester formulation.

WALL PANEL DESIGN

Exterior wall panels of the building shall be a single continuous length from the base channel to the roof line of the building at the side walls and end walls of the building except where interrupted by wall openings. Wall panels shall be a maximum of 16" wide with a 3" deep inward tuned interlocking side rib. Wall panels shall contain

two 34 " deep by 3^18 " wide fluted recesses, each starting 2^74_6 " from each panel edge. Wall panels shall be fastened internally to the base channel and eave cap of the building with 38 " diameter electrogalvanized machine bolts placed within the panel interlock. The fasting system shall be designed so that no wall fasteners are exposed on the exterior surface of the walls. Wall panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 525



specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of the panel material shall be 50,000 PSI. Panel material shall be embossed with a random pattern pebble embossure of approximately 0.007, 0.008 depth. The base of the wall panels shall be closed off with polystyrene closures conforming to the panel profile.

WALL PANEL FINISH

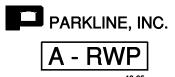
All exterior surfaces of the galvanized steel wall panels and exterior trim shall receive two factory roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Twilight Blue, Desert Tan, Laurel Green, Arctic White, Harvest Gold, Roman Bronze or Shell Gray.

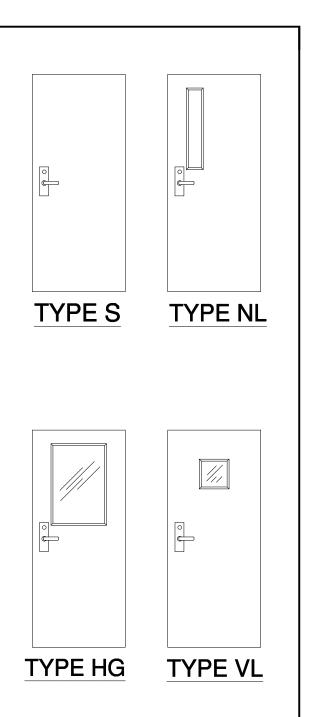
Exterior color coating shall meet the following performance standards after 10 years continuous exposure in normal* vertical atmospheric conditions.

- A. Panels shall show no evidence of blistering, peeling or chipping.
- B. Panels shall not show surface chalking in excess of the No. 8 rating per ASTM D 4214-89, method D as established by American Society for testing and Materials (ASTM).
- C. Panels, after cleaning, shall not show color change in excess of five (5) NBS units when measured in accordance with the ASTM D 2244-93 standards.

The above performance standards shall not apply where panels have been damaged by fire, radiation or other physical damage.

* "Normal" atmospheric conditions exclude exposure to corrosives such as chemical fumes or salt spray.





RHSO

RHSI

OUTSIDE OF BUILDING (TYPICAL) - LHSO

LHSI

DSO

HOLLOW METAL DOOR LEAF

PRODUCT DESCRIPTION

DOOR LEAVES - Shall be of type shown on sheet A-DS

TYPE S - Solid Panel.

<u>TYPE NL</u> - Narrow Lite, top with 5" x 30" x $\frac{1}{4}$ " acrylic

glazing (standard), solid bottom.

TYPE HG - Half Glass, top open for glazing, solid bottom.

TYPE VL - 10" x 10" Vision Lite.

Nominal Glass Sizes:

 LEAF SIZE:
 GLASS SIZE

 2470
 12" x 30"

 3070
 20" x 30"

 3870
 28" x 30"

Glazing options as shown on sheet A-DS

1/4" Clear Wire

1/4" Acrylic

1/4" Polycarbonate Special Glazing

STANDARD DOOR HARDWARE:

Mortise lockset per ANSI A156.13, Series 1000, Grade 1, F13, 626 Satin Chrome Finish. (levers both sides)

 $\frac{1}{4}$ " x $\frac{1}{16}$ " screw on weatherstripping.

 3^{11}_{16} " wide x $\frac{5}{8}$ " high extruded aluminum threshold. (outswing)

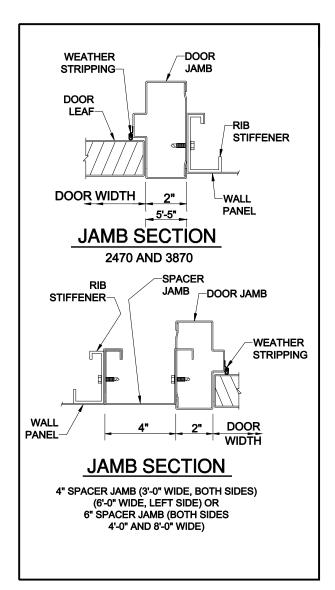
(3) $4\frac{1}{2}$ " steel hinges per ANSI # A5133 630 Satin Stainless Steel finish with non-rising pins.

NOTE:

Refer to Walk Door Hardware schedule $\underline{\text{A-DS}}$, Floor Plan, and Elevation drawing for exact door size, door options, door swing and location of accessories.







AVAILABLE STANDARD DOOR SIZES:

Nominal Sizes

Single Swing Double Swing $\frac{W}{4} = \frac{H}{4} = \frac{W}{4} = \frac{H}{4} = \frac{H}{4}$

f) - 4'-0" x 8'-0"

Hollow Metal Doors (Sections)

MANUFACTURER

PRODUCT NAME

Parkline, Inc. P.O. Box 65

Winfield, West Virginia 25213 Phone: (304) 586-2113 in WV

(800) 786-4855 outside WV

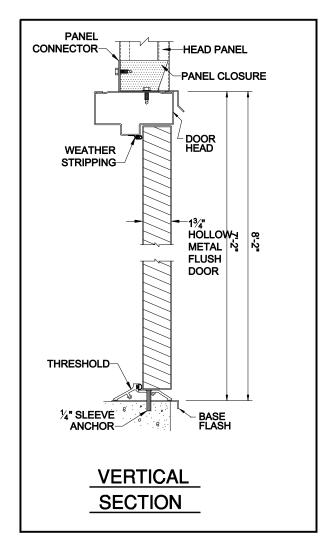
(304) 586-3842 FAX

web: http://www.parkline.com E-mail: parkline@parkline.com

HOLLOW METAL DOOR SECTIONS

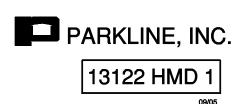
PRODUCT DESCRIPTION

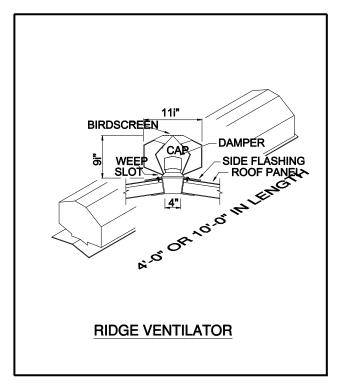
DOOR SECTIONS



DOOR SIZE OPTIONS

Removable transoms are available over door. (See 13122 HMD 5)





ROOF VENTILATOR

PRODUCT DESCRIPTION

RIDGE VENTILATOR (gable buildings only)

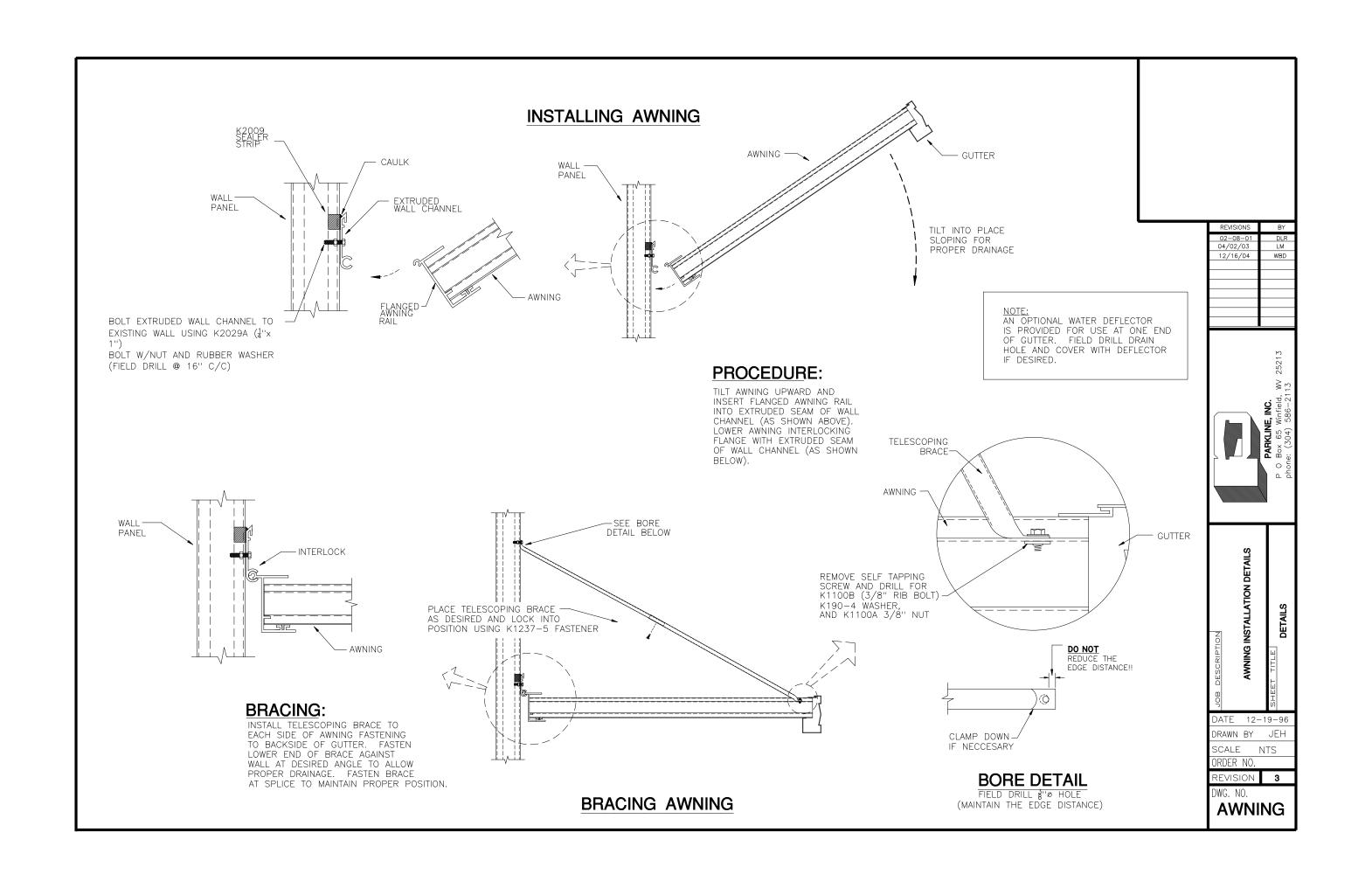
Ridge ventilator shall be of gravity type with 4" throat and chain operated vertical lift dampers. Ventilators shall be made of nominal 24 gauge steel, factory painted white on all visible exterior galvanized surfaces. Top of ventilator shall have a bird screen cover.

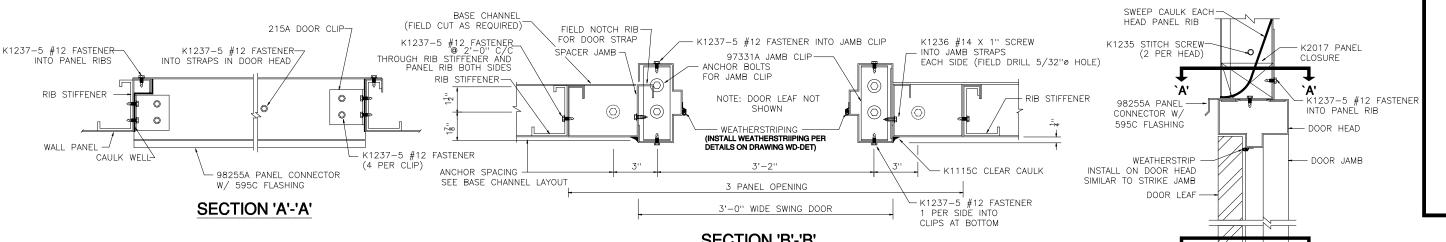
CFM CAPACITIES WITH 4 MPH WIND AND 10' BUILDING HEIGHT.

	EXHAUST CAPACITY (CFM)			
TEMP. DIFF.	4" THROAT x 4'-0"	4" THROAT x 10'-0"		
10°	370	930		
20°	430	1080		
30°	470	1190		

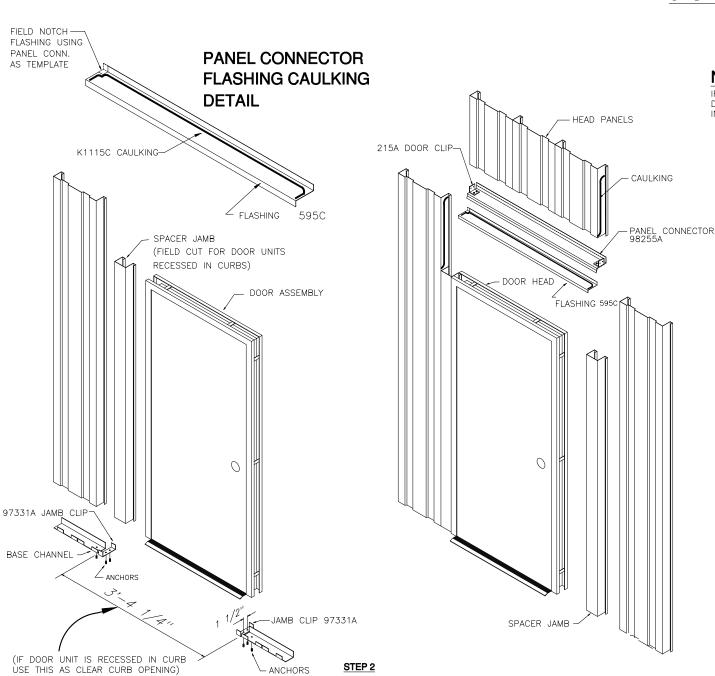
NOTE: Refer to Floor Plan and Elevation Drawing for exact size and location of accessories.







SECTION 'B'-'B'



- ANCHORS

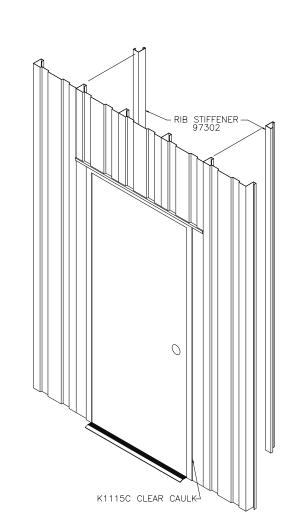
STEP 1

FASTEN JAMB CLIPS TO FOUNDATION. (SEE SECTION 'B'-'B' AND BASE CHANNEL LAYOUT) PLACE SPACER JAMB ON LEFT INTO POSITION AND FASTEN TO BACK OF BASE CHANNEL. SET DOOR ASSEMBLY OVER CLIPS AND FASTEN PER SECTION 'B'-'B'. ATTACH DOOR JAMBS TO SPACER JAMB WITH K1236 SCREWS THRU DOOR JAMB STRAPS. (SEE SECTION 'B'-'B')

PUT SPACER JAMB ON RIGHT INTO POSITION AND ATTACH
TO BASE CHANNEL AND DOOR JAMB. CAULK PANEL CONNECTOR
AND FLASHING PER DETAIL ABOVE. PLACE
PANEL CONNECTOR / FLASHING INTO POSITION AND FASTEN TO HEAD. (SEE SECTION 'A'-'A') CAULK FROM TOP OF WALL PANEL TO DOOR HEAD AS SHOWN. THEN PLACE HEAD PANELS INTO POSITION, SWEEP CAULK EACH
HEAD PANEL RIB, AND FASTEN TO BACK OF PANEL CONNECTOR.
(SEE SECTION THRU DOOR) CAULK HEAD PANEL AS SHOWN. THEN INSTALL PANEL RO RIGHT OF OPENING.

NOTE:

IF DOOR CLOSER IS TO BE INSTALLED REFER TO DRAWING WD-CLOS BEFORE BEGINNING DOOR INSTALLATION.



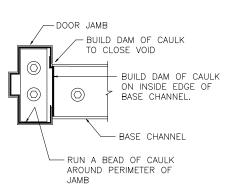
PLACE RIB STIFFENERS IN POSITION AND LOCK INTO PANEL RIBS. FASTEN THROUGH PANEL RIBS INTO STIFFENERS. (SEE SECTION 'B'-'B') FASTEN DOOR CLIPS AS SHOWN IN SECTION 'A'-'A' SURFACE CAULK DOOR FRAME TO WALL WITH K1115C CLEAR CAULK AS SHOWN IN SECTION 'B'-'B'.

SECTION THRU DOOR

'B'

THRESHOLD -

BASE CHANNEL FLASHING -



`B'

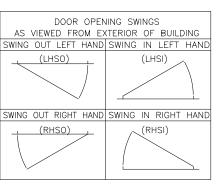
- 4" SLEEVE ANCHOR USE THRESHOLD AS TEMPLATE FOR DRILLING HOLE 4"x

ANCHOR BY DOOR MANUFACTURER.

BEND LEG OF FLASHING

DOWN UNDER THRESHOLD

TYPICAL CAULKING DETAIL @ **BASE OF DOOR JAMB**



- SWING OUT LEFT HAND (LHSO) DOOR ASSEMBLY SHOWN, SEE FLOOR PLAN FOR ACTUAL DOOR SWINGS.
- DOOR FRAMING MUST BE INSTALLED AS WALL
- PANELS ARE ERECTED.

 DOOR MUST BE INSTALLED SQUARE AND PLUMB
- INSTALL WEATHERSTRIP ON DOOR AS SHOWN IN DETAILS ON DRAWING WD-DET.
- CHECK INSIDE OF DOOR FRAME FOR ADDITIONAL HARDWARE ITEMS SUCH AS KNOBS, ETC.

REVISIONS	BY
11-30-94	DB
7-22-97	CBP
06-22-98	DLR
11-16-98	DLR
1-13-99	DLR
11-15-02	DLR
01-16-03	CBP
12-17-04	WBD
11-02-06	BHKJ



3'-0" WIDE WALK DOOR INSTALLATION

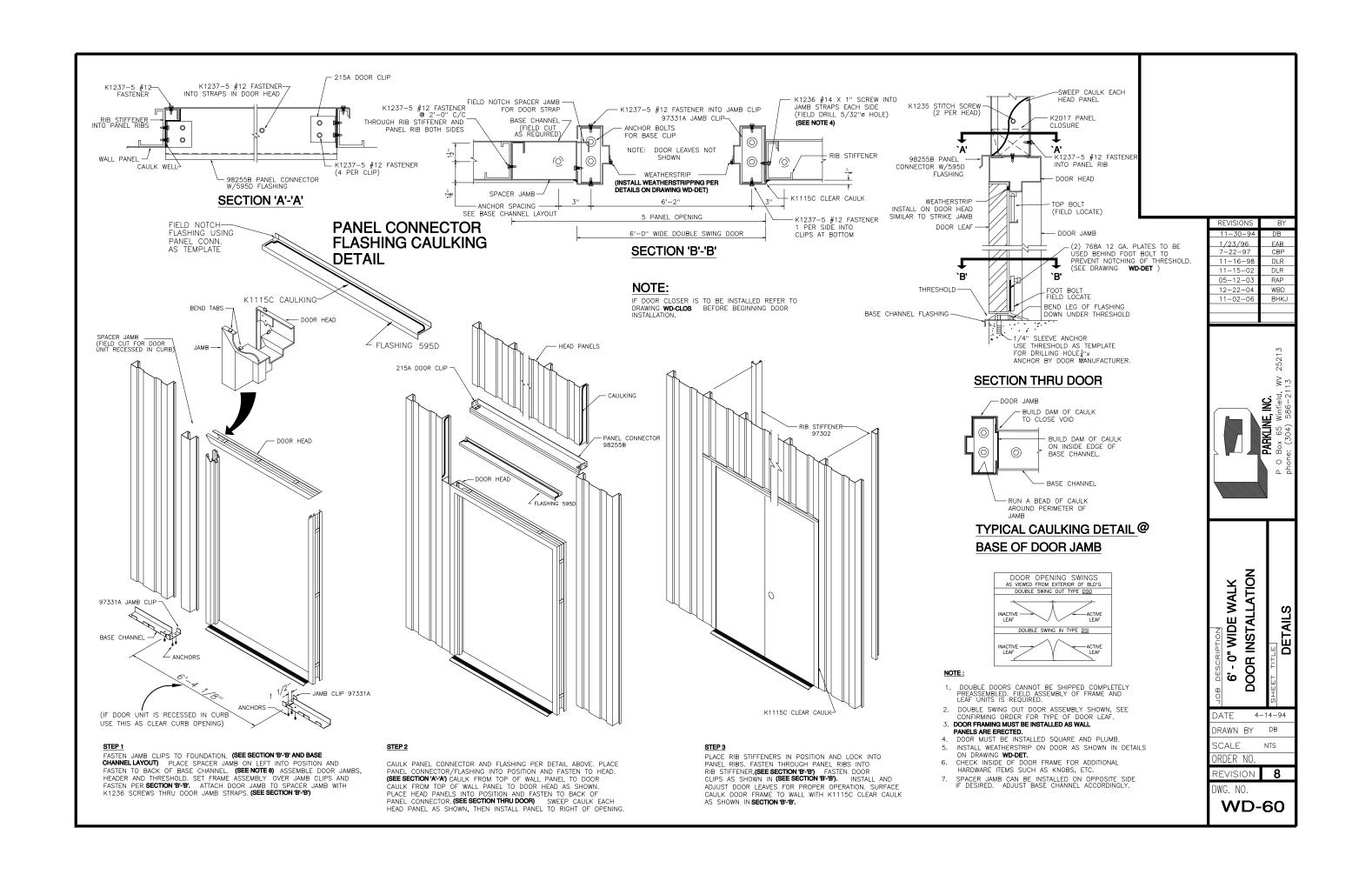
DRAWN BY

SCALE

REVISION

DWG. NO.

WD-30



http://parkline.com/color-chart/#color

Shell Grey Exterior



*Parkline's standard roof comes with a zinc and aluminum alloy coating. Roof panels are also available with a G90 galanized coating, pre-painted Artic White at an additional cost

NOTE: Factory produced color-coated metal panels will not exactly match the above standard color representations. Embossing will change the perception of color. We are continually working to improve our products, therefore data is subject to change without notice.

EMPIRE GENERATING PROJECT

Empire Generating Company, LLC 16" Natural Gas Pipeline

SPECIFICATION

FOR AN

ODORIZATION BUILDING

С	9/23/08	Re-Issued for Bid	TSB	RBS <i>IL</i>	СК	
В	7/31/08	Issue for Bid	KBK	RBS	CK	
A	7/8/08	Issued for Internal Review	KBK	RBS	CK	
REV.	DATE	REASON FOR REVISION	ORIG	LEAD	PM	CLIENT
SPECI	FICATIO	N No. 13122				

PROJECT	SPECIFICATION	ORIGINAL DATE: 7/8/08
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR AN	REV: C
	ODORIZATOIN BUILDING	REVISION DATE: 9/23/08

TABLE OF CONTENTS

1.0	GENERAL
2.0	EQUIPMENT AND SERVICES BY VENDOR1
3.0	EQUIPMENT AND SERVICES BY BUYER1
4.0	CODES, STANDARDS, AND SPECIFICATIONS1
5.0	DESIGN CRITERIA1
6.0	ODORIZATION BUILDING2
7.0	ROOF AND WALL PANELS2
8.0	DOCUMENTATION AND DRAWINGS
9.0	INSPECTIONS AND TESTING
10.0	SHIPPING AND HANDLING
11.0	WARRANTY4
12.0	ATTACHMENTS4

PROJECT	SPECIFICATION	ORIGINAL DATE: 7/8/08
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR AN	REV: C
	ODORIZATION BUILDING	REVISION DATE: 9/23/08

1.0 GENERAL

- 1.1 Scope: This specification describes the RFQ requirements for one (1) odorization building as described herein.
- 1.2 Tag Number
 - 1.2.1 10C-BLD-BLD-008

2.0 EQUIPMENT AND SERVICES BY VENDOR

- 2.1 Design and fabrication of one (1) odorization building as described herein integrating the buyer supplied odorization skid.
- 2.2 The building shall be shipped in sections to allow on-site installation on the foundation with minimal labor. All connecting fasteners, seals, appurtenances, and joint connections shall be supplied with the building.

3.0 EQUIPMENT AND SERVICES BY BUYER

3.1 Buyer shall supply on-site installation services.

4.0 CODES, STANDARDS, AND SPECIFICATIONS

- 4.1 AISC Specification for the Design, Fabrication and Erections of Structural Steel for Buildings
- 4.2 AISC Code of Standard Practice for Steel Buildings and Bridges
- 4.3 AISC Steel Construction Manual
- 4.4 ANSI- American National Standards Institute
- 4.5 ASCE 7-05 Design Loads for Buildings and other Structures
- 4.6 AWS D1.1, "Structural Welding Code
- 4.7 CFR 49 Section 192.625, Transportation
- 4.8 IEEE- Institute of Electrical & Electronic Engineers
- 4.9 NEMA- National Electric Manufacturers Association
- 4.10 NFPA 70/NEC- National Electric Code
- 4.11 ICC International Building Code 2006 and local amendments

5.0 DESIGN CRITERIA

- 5.1 Site Conditions
 - 5.1.1 Elevation: 19 feet
 - 5.1.2 Ambient Temperature Range: -18 to 100 °F
 - 5.1.3 Maximum Wind Speed: 90 mph, exposure C, Iw=1.15
 - 5.1.4 Seismic

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PROJECT	SPECIFICATION	ORIGINAL DATE: 7/8/08
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR AN	REV: C
	ODORIZATION BUILDING	REVISION DATE: 9/23/08

5.1.4.1 Ss = 25% g, Si 9% G

5.1.4.2 Site Class D

5.1.4.3 Ie = 1.25

5.1.5 Ground Snow Load: 65 psf, Is=1.1

5.2 Building Code

- 5.2.1 International Building Code (IBC) and New York State Uniform Building Code. The more stringed code shall govern.
- 5.2.2 The building shall be supplied with a New York State certification label.
- 5.3 Electrical Classification: Class I, Division 2, Group D.

6.0 ODORIZATION BUILDING

- 6.1 The building dimensions: 12'w x 24'l x 10'h (minimum height).
- 6.2 The building shall have a gable roof and gutters. The building shall conform to Parkline document numbers A-AL-8-16-G and 13122GAB, 8' to 16' wide Gable Building with Gutter and Gable Building respectively.

7.0 ROOF AND WALL PANELS

- 7.1 Roof and wall panels shall have a painted finish and shall conform to Parkline document number A-RWP, *Roof and Wall Panel Design*.
- 7.2 The roof and wall panel color coating shall carry a low fire hazard rating equal to a Class 1 material as defined by Factory Mutual. The Panel coating shall have achieved a Flame Spread Index of 0 and a Fuel Contributed Index of 5 or less when tested in accordance with ASTM E-84 test procedures.
- 7.3 The finish coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Coatings and color
 - 7.3.1 Door Color: Poly White
 - 7.3.2 Roof Panel Color: Arctic White
 - 7.3.3 Wall Panel Color: Shell Gray
 - 7.3.4 Framed Opening Trim Exterior: Shell Gray

7.4 Doors

- 7.4.1 One (1) 8'-0" wide x 7'-6" tall (clear opening height) rolling service door which conforms to Parkline document number A-RUD-1, *Rolling Service Door*, with right hand operation.
 - 7.4.1.1 Color: Poly White
 - 7.4.1.2 Lockable

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LG Con	structors
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PROJECT	SPECIFICATION	ORIGINAL DATE: 7/8/08	
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR AN	REV: C	
	ODORIZATION BUILDING	REVISION DATE: 9/23/08	

- 7.4.1.3 Location: Centered on 12' side of building
- 7.4.2 One 3'-0" x 7'-0" solid insulated door which conforms to Parkline document number A-DF-INS, *Hollow Metal Door*.
 - 7.4.2.1 Color: Poly White
 - 7.4.2.2 Lockable
 - 7.4.2.3 Location: Approximate midpoint of 24' side of building; locate on the right wall when facing the rolling service door from the outside of the building.

7.5 Ventilation

- 7.5.1 One (1) power roof ventilator which conforms to Parkline document number A-PV, *Roof Ventilator Power Roof Exhauster* shall be supplied. Fan shall be rated for operation in an NFPA Class 1, Division 2, Group D Area.
- 7.5.2 One (1) fixed wall louver which conforms to Parkline document number A-LF, *Fixed Louver* shall be supplied. Fixed louver shall be located on the opposite side of the building from the Roof Ventilator Power Roof Exhauster.

7.6 Insulation

- 7.6.1 Walls: 3" friction fit fiberglass insulation with an R value greater than 5 which conforms to Parkline document number FFW-1, *Friction Fit Wall Insulation*.
- 7.6.2 Roof: 3-1/2" face fiberglass insulation with an R value greater than 11 which conforms to Parkline document 13122RI, *Roof Insulation*.

8.0 <u>DOCUMENTATION AND DRAWINGS</u>

- 8.1 Vendor shall provide the documentation and drawings listed on the Vendor Drawing & Data Requirements form.
- 8.2 The erection drawings shall be prepared for the building covered by these specifications showing the location of all roof and wall accessories and the exact anchor bolt locations required for each accessory. The drawings shall also indicate the weight of individual sections and the installed building weight.
- 8.3 The selected building manufacturer shall provide the building purchaser with complete design certification signed, meeting the New York State Certificate requirements.

9.0 INSPECTIONS AND TESTING

- 9.1 Materials and fabrication shall be subject to Buyer's inspection. Buyer's representative shall have access to vendor's facilities to inspect material and fabrication.
- 9.2 The approval or waiver of inspection by Buyer shall not release the vendor of responsibility to meet the requirements of this specification and referenced codes and standards.

10.0 SHIPPING AND HANDLING

10.1 Vendor shall ship the product to the new Measurement and Regulation Station located near THIS DOCUMENT IS THE PROPERTY OF LG CONSTRUCTORS. ALL RIGHTS RESERVED. THIS DOCUMENT SHALL NOT BE DISCLOSED TO THIRD PARTIES WITHOUT WRITTEN APPROVAL FROM LG CONSTRUCTORS.

LG Constructors				
PROJECT	SPECIFICATION	ORIGINAL DATE: 7/8/08		
EMPIRE GENERATING PROJECT NO: 360473	STRUCTURAL SPECIFICATION FOR AN	REV: C		
	ODODIZATION DI III DING	DEVISION DATE: 0/23/08		

the Tennessee Gas Pipeline No. 200 near its crossing of Route 91

11.0 WARRANTY

11.1 The Vendor guarantees all equipment to be constructed and tested in accordance with the requirements of this specification. Further, the Vendor guarantees the equipment to satisfactorily perform in accordance with this specification and to be free from defective materials and workmanship for a period as stipulated in the contract Terms and Conditions.

12.0 ATTACHMENTS

- 12.1 13122 Vendor Drawing & Data Requirements Form
- 12.2 A-AL-8-16-G 8' to 16' wide Gable Building with Gutter
- 12.3 13122GAB Gable Building
- 12.4 A-RWP Roof and Wall Panel Design
- 12.5 A-RUD-1 Rolling Service Door
- 12.6 A-DF-INS Hollow Metal Door
- 12.7 A-PV Roof Ventilator Power Roof Exhauster
- 12.8 A-LF Fixed Louver
- 12.9 FFW-1 Friction Fit Wall Insulation
- 12.10 13122RI Roof Insulation

END OF DOCUMENT



VENDOR DRAWING & DATA REQUIREMENTS

13122 - Odorization Building

Project: Empire Generating Project		Project No: 360473	Client: Empire Generating Company, LLC	
RFQ No: EGC-909	PO No:	1	Vendor:	
Description & TAG No. Meter Skid and Building, 10C-BLD-BLD-008				
Revision No: B	Date: 9/29/08	8	Issued by: R. Smetana	

FINAL CERTIFIED DRAWINGS AND DOCUMENTS MUST BE SUBMITTED WITHIN TWO WEEKS OF FABRICATION AND TESTING

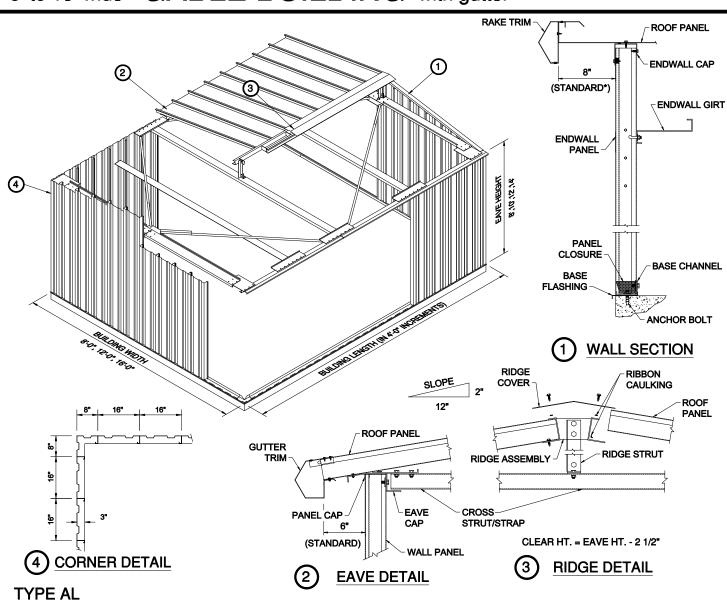
REG	QUIR	ED W	/ITH	BID –2 copies		
SUBMIT FOR REVIEW AND APPROVAL. FABRICATION NOT TO COMMENCE UNTIL REVIEW & ACCEPTANCE - 2 c					TANCE - 2 copies	s and
	1 reproducible					
		FIN		SUBMITTAL APPROVED BY PURCHASER - 2 copies, 1 reproducible and 1 electronic (CD RO	OM)	
			то	BE SUBMITTED FOR INFORMATION ONLY – 1 copies		
					REQUIRED	AGREED
				DESCRIPTION	BY BUYER	BY SELLER
					WEEKS ARO	DATE*
Х	Х			Inspection And Test Plan (generic for bid; detailed ARO)		
Х	Χ			Fabrication, Quality Surveillance and Delivery Schedule		
				Priced recommended list for spare parts and special tools		
Х				Signed Vendor Drawing and Data requirements form with "Agreed by Seller, Date"	With bid	
Х				List of any and all exceptions to specifications	With bid	
			Х	Document Index (Drawings, Procedures, etc) and Submission Schedule	1	
				Welding Procedures, Procedures Qualification Records		
				NDE Procedures		
				PWHT Procedures		
				Hydrotest Procedures		
				Equipment Data Sheet(s), certified required		
				Data Sheets for supplied instrumentation and other 3 rd party devices, certified required		
				All Code / Design Calculations, certified required		
				Allowable Nozzle Load Calculations		
				General Arrangement Drawings, certified required		
	Χ	Х		Assembly, Construction and Erection Drawings	4	
				Shop Detail Drawings showing piece match-marking, as applicable		
				Equipment Detail Drawings / internal sections with complete bills of materials		
				Internals and Internal Attachments Drawings		
				External Attachments Drawings (ladders, platforms, pipe supports, etc)		
	Χ	Х		Support Requirements Drawings complete with Anchor bolt size and locations	4	
				- Building mass, shipping weights, support loads (for all load cases)		
				Surface preparation and Painting / Galvanizing Procedure		
		Х		Complete Equipment Data Book	2 weeks A/C	
				Complete Manufacturer's Record Book	2 weeks A/C	
				Certified Component As-Built Drawings		
		Х		Inspection Travel Sheets	2 weeks A/C	
				Material Specification (Material Test Reports, Mill Certificates, etc)		
				NDE Test Reports		
				PWHT records including charts		
				Hydrostatic Test Report including charts		
				Equipment Nameplate Rubbing		
				Installation, Operation & Maintenance Manuals for vessel		
				Installation, Operation & Maintenance Manuals for Vessel		
		Х		Code Certification / Supporting Documentation	2 weeks A/C	

 $A/C-After\ Completion \qquad \qquad ARO-After\ receipt\ of\ Order$

*Seller to complete and return with bid

APPROVAL-

8' to 16' wide GABLE BUILDING with gutter



Roof Design

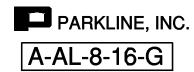
- A. Each "Type AL" building shall have a gable roof with a slope of 2" in 12". Interlocking roof panels shall be nominal 24 gauge, fastened to an eave cap with ¼" diameter Type 430 stainless steel bolts through factory punched holes. The ridge of the roof shall be a welded double channel assembly sealed with a minimum 20 gauge steel cover.
- B. The interlocking panel roof system shall extend a minimum of 0'-8" over the endwall panels* and a minimum of 6" over the sidewall panels of the building
- C. The building roof line shall be finished with nominal 26 gauge factory painted rake trim having matching ridge and eave cornices. Color of rake trim and cornices shall be Arctic White or Roman Bronze.
- D. The sidewalls of the building shall have a nominal 26 gauge factory painted gutter and downspout system to match the rake trim.

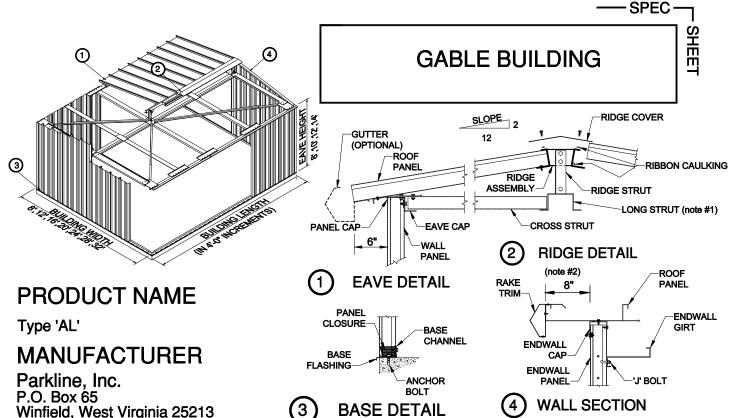
Structural Framing

Angle or channel bracing components shall be placed across the building width to allow the building width to allow transmission of horizontal wind loads. All wind bracing components shall be of nominal 14 gauge galvanized steel.

Where required for proper transmission of lateral wind loads, structural frame wind bents shall be installed. Wind bents shall consist of a bolted column and rafter assembly of steel conforming to ASTM A 36 specifications.

* 8" ENDWALL OVERHANG NOT AVAILABLE ON BUILDINGS WITH P68 ROOF PANELS





Winfield, West Virginia 25213 Phone: (304) 586-2113 in WV

(800) 786-4855 outside WV (304) 586-3842 FAX

web: http://www.parkline.com E-mail: parkline@parkline.com

PRODUCT DESCRIPTION

TYPE 'AL'

Roof Design

Each "Type AL" building shall have a gable roof with a slope of 2" in 12". The 16" wide interlocking roof panels shall vary from a nominal 24 to 18 gauge depending upon the loading conditions. They shall be fastened to an eave cap with 1/4" diameter Type 430 stainless steel bolts through factory punched holes. The ridge of the roof shall be a welded double channel assembly sealed with a nominal 20 gauge steel ridge cover.

The gable ends shall be trimmed with nominal 26 gauge factory painted rake trim having matching ridge and eave cornices. Color shall be Arctic White or Roman Bronze.

(Optional). The eaves of the building shall have nominal 26 gauge gutter and 2" x 3" downspouts factory painted to match the building's rake trim. The system shall be complete with all required outlet drops, elbows and connecting hardware.

* Note: #1 - Not required for 8', 12' & 16' wide buildings. #2 - Not available on 32' wide AL4 buildings.

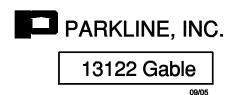
Wall Design

The roof system is supported by a fluted, nominal 24 gauge, embossed, factory painted, 16" wide x 3" deep interlocking wall panel. Panels are fastened at the top and bottom to galvanized structural channels and eave caps with 3/8" diameter electrogalvanized machine bolts, thru factory punched holes.

Structural Framing

Strap or channel bracing components shall be placed across the building width to allow transmission of horizontal wind loads. All wind bracing components shall be of nominal 14 gauge galvanized steel.

Where required for proper transmission of lateral wind loads, structural frame windbents shall be installed. Windbents shall consist of a prime painted, column and rafter bolted assembly of steel conforming to ASTM A 36 specifications.



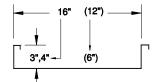
ROOF AND WALL PANEL DESIGN

— APPROVAL

ROOF PANEL DESIGN

Roof panels shall be supplied in a single continuous length from eave to ridge line, Gable (AL), or eave line, Shed (S), and shall be designed to tightly interlock so that no fasteners are required at intermediate points along the panel side laps. Roof panels shall be a maximum of 16" wide with a flat surface between the interlocking

side ribs. The interlocking ribs shall be a minimum 3" high, and shall be turned upwards. All roof panels shall be factory punched for connection at the eave of the building.



ROOF PANEL FINISH (STANDARD)

Roof panels shall be a minimum of 24 gauge steel coated on both sides with a coating of corrosion resistant aluminum zinc alloy applied by a continuous hot dipping process.

Coating weight shall be a minimum of 0.32 oz. of aluminum-zinc alloy per square foot of coated sheet (both sides) - equivalent to approximately 0.80 mil. thickness on each side. Minimum yield strength of panel material shall be 50,000 PSI.

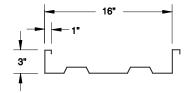
(Optional) PAINTED ROOF PANEL FINISH (Available at additional charge)

Roof panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 525 specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of panel materials shall be 50,000 PSI. All exterior surfaces of the galvanized steel roof panels, shall receive two factory, roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for roof panels shall be a white polyester formulation.

WALL PANEL DESIGN

Exterior wall panels of the building shall be a single continuous length from the base channel to the roof line of the building at the side walls and end walls of the building except where interrupted by wall openings. Wall panels shall be a maximum of 16" wide with a 3" deep inward tuned interlocking side rib. Wall panels shall contain

two 34 " deep by 3^18 " wide fluted recesses, each starting 2^74_6 " from each panel edge. Wall panels shall be fastened internally to the base channel and eave cap of the building with 38 " diameter electrogalvanized machine bolts placed within the panel interlock. The fasting system shall be designed so that no wall fasteners are exposed on the exterior surface of the walls. Wall panels shall be a minimum of 24 gauge galvanized steel conforming to ASTM A 525



specifications with the galvanized coating conforming to G90 (0.9 oz.) standards. Minimum yield strength of the panel material shall be 50,000 PSI. Panel material shall be embossed with a random pattern pebble embossure of approximately 0.007, 0.008 depth. The base of the wall panels shall be closed off with polystyrene closures conforming to the panel profile.

WALL PANEL FINISH

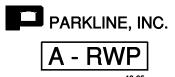
All exterior surfaces of the galvanized steel wall panels and exterior trim shall receive two factory roller applied, paint coats having a combined coating thickness of 0.8 to 1.2 mils of dry film thickness. The finished coat for wall panels shall be a siliconized polyester formulation of one of the following Parkline colors: Twilight Blue, Desert Tan, Laurel Green, Arctic White, Harvest Gold, Roman Bronze or Shell Gray.

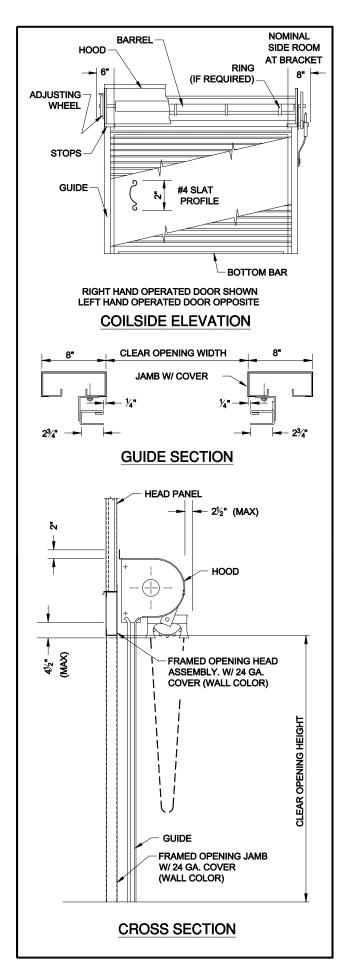
Exterior color coating shall meet the following performance standards after 10 years continuous exposure in normal* vertical atmospheric conditions.

- A. Panels shall show no evidence of blistering, peeling or chipping.
- B. Panels shall not show surface chalking in excess of the No. 8 rating per ASTM D 4214-89, method D as established by American Society for testing and Materials (ASTM).
- C. Panels, after cleaning, shall not show color change in excess of five (5) NBS units when measured in accordance with the ASTM D 2244-93 standards.

The above performance standards shall not apply where panels have been damaged by fire, radiation or other physical damage.

* "Normal" atmospheric conditions exclude exposure to corrosives such as chemical fumes or salt spray.





ROLLING SERVICE DOOR

PRODUCT DESCRIPTION

ROLLING SERVICE DOOR WAYNE DALTON, MODEL 924®

Designed to withstand 20 #/Sq.Ft. windload. Curtain is 24 gauge steel crown type. Windlocks on each end of every other slat. Bottom bar is galvanized steel. Double angle with astragal standard. Guides are roll formed with integral bar. Hoods are 24 gauge galvanized steel. Shop coat of rust inhibitive primer on galvanized and non-galvanized steel surfaces and operating mechanisms. Guides and bracket plates will be coated with a flat black prime paint. All galvanized per ASTM. A-525 standards.

Optional Chain Hoist:

Door(s) operated by means of reduction gears or roller chain sprockets with lift effort not to exceed 25 lbs. electro galvanized hand chain furnished with pad-lockable chain keeper.

NOTE:

Curtain finish: Galvanized and Prime Steel

Bottom bar finish: Galvanized Steel
Guide finish: Prime Steel

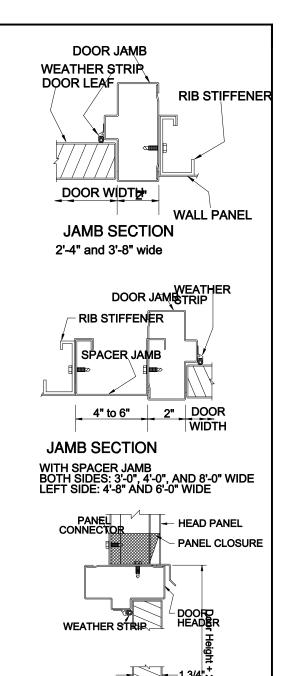
Hood(s) finish: Galvanized and Prime Steel

NOTES:

- Refer to floor plan and elevation drawing for exact size and location of accessories.
- 2. Refer to page #2 for clearances.







NOTE:

Refer to Walk Door Hardware Schedule A-DS, Floor Plan and Elevation Drawing for exact door size, door options, door swing and location of accessories.

VERTICAL SECTION

THRESHOLD

HOLLOW METAL DOOR OPTIONAL

PRODUCT DESCRIPTION

M. INSULATED DOOR LEAF

Door leaves shall be 13/4" thick flush construction. Insulated foamed-in-place, rigid closed cell polyurethane core is chemically bonded to minimum 20 gauge galvanized steel face sheets. Leaves shall be manufactured in accordance with ANSI/SDI-100, Grade 1, Model 1. (STC rating 22 and U value .07).

DOOR FRAME

Door frames shall be $4\frac{3}{4}$ " deep, double rabbeted type, of nominal 16 gauge galvanized steel. Frames shall have hinge reinforcement of a nominal 7 gauge and lock reinforcement of a nominal 16 gauge.

DOOR FINISH (STANDARD)

All leaves and frames shall be factory painted with one coat of baked on primer.

N. DOOR FINISH (OPTIONAL)

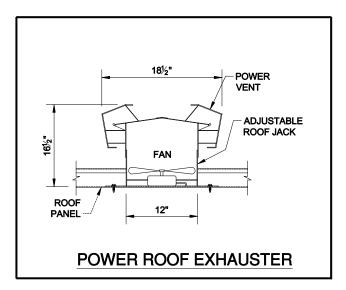
Factory painted door and frame.

DOOR ASSEMBLY

All doors shall be provided "assembled" in their frames with all hardware, except door levers, knobs, cross bar or closers installed on door leaf. (Double swing doors will require some field assembly).



A - DF-INS



ROOF VENTILATOR POWER ROOF EXHAUSTER

PRODUCT DESCRIPTION

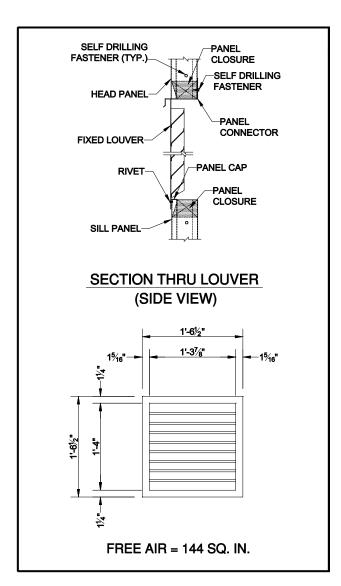
POWER ROOF EXHAUSTER

Aluminum power roof exhauster for 3" or 4" roof shall have a 12" diameter throat, capable of 289 CFM air movement at $^{1}\!_{8}$ " static pressure and shall be equipped with UL listed adjustable thermostats. Power requirements of exhauster shall be .86 AMPS at 115 VOLTS. An intake louver of 115 Sq. Inches minimum free air area shall be required for each exhauster.

NOTE: Refer to Floor Plan and Elevation Drawing for exact size and location of accessories.

Can not be used with 6" x 12" roof panel (P68).





FIXED LOUVER

PRODUCT DESCRIPTION

FIXED LOUVER

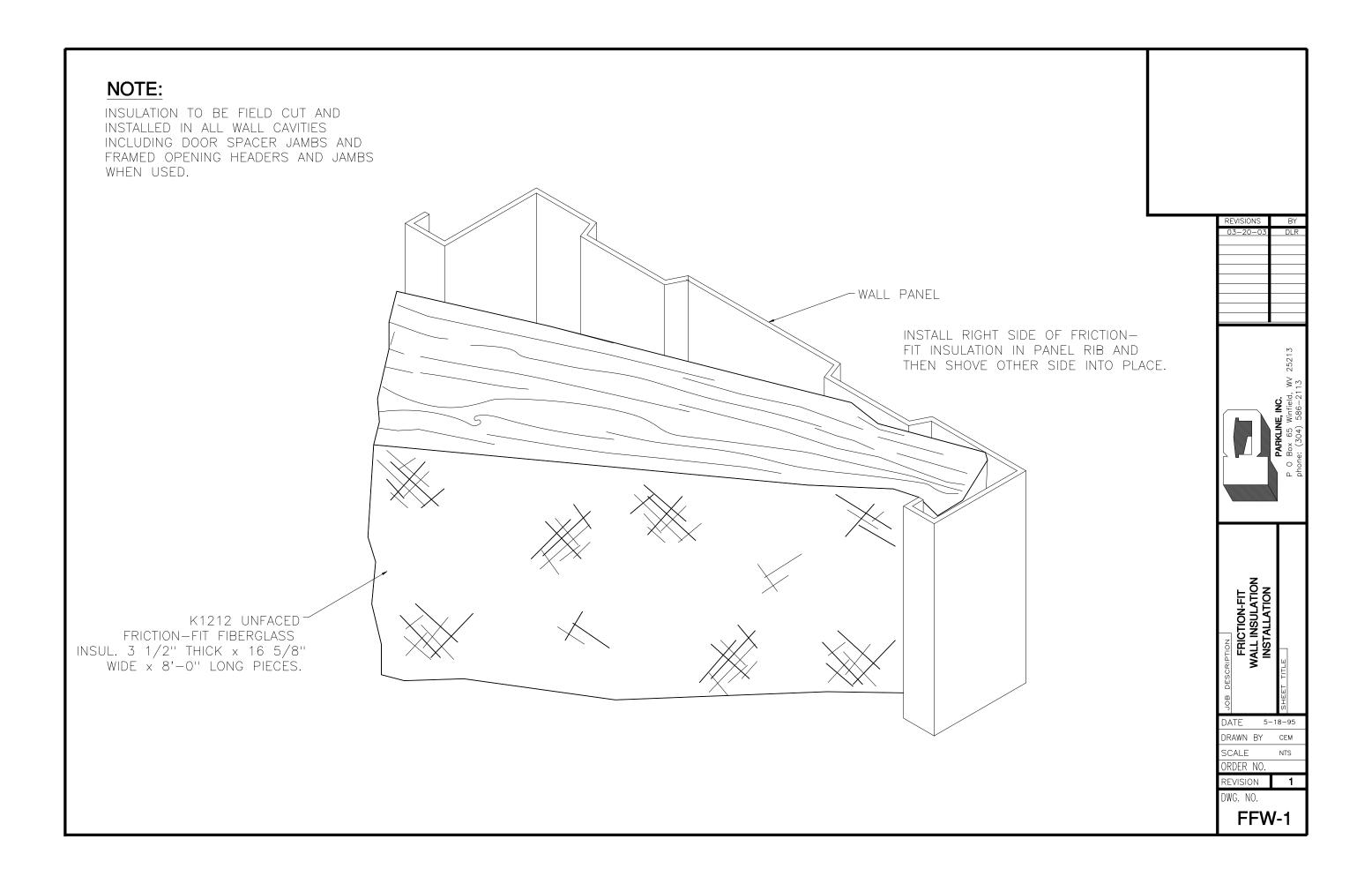
Fixed louvers shall be of nominal 26 gauge, G90 galvanized steel, general purpose type of self framing design with free area of 75 Sq. Inches. Finish shall be bright galvanized. All louvers shall be complete with #8 insect screen.

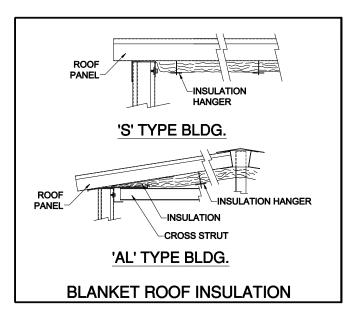
SIZE: 16" wide x 16" high

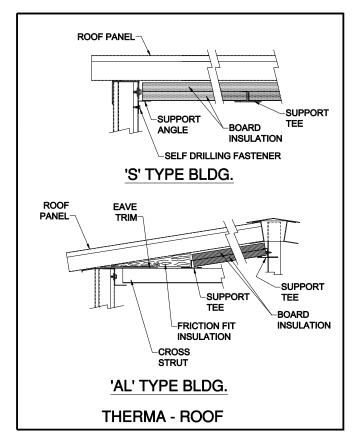
- NOTES: 1. Refer to Floor Plan and **Elevation Drawing for exact** size and location of accessories.
 - 2. Specify louver sill height. Minimum sill or head height is 6"











PRODUCT NAME

Roof Insulation

MANUFACTURER

Winfield, West Virginia 25213 Phone: (304) 586-2113 in WV (800) 786-4855 outside WV (304) 586-3842 FAX

web: http://www.parkline.com E-mail: parkline @ parkline.com

ROOF INSULATION

PRODUCT DESCRIPTION

BLANKET ROOF INSULATION

Roof insulations shall consist of 48" wide, 3" thick, 6# density fiberglass faced on its exposed side with a white metalized polypropylene scrimkraft facing. The faced insulation material shall have a UL Flame Spread Rating of 25 when treated in accordance with UL 723 ASTM E 84 procedures.

Insulation shall be supported at the roof line by means of mechanical clips spaced on maximum 4'-0" centers and shall be sealed by means of 2" side tab on facing.

S	R	
3" Thick	Continuous	10.4
4" Thick	Continuous	13.2
6" Thick	Continuous	19.3

Calculated system "U" value 0.10, 0.08 & 0.05 respectively (ASHRAE zone method)

THERMA-ROOF

The Therma-Roof insulation system shall consist of two layers of 48" wide polyisocyanurate foam board faced with a white embossed foil on the exposed interior surface. The roof insulation system shall include metal supporting tees on 4' centers and all trim required for a finished interior appearance. No metal-to-metal contact between the insulation system and exterior roof or wall covering will be permitted.

Insulation shall have a maximum UL flame spread rating of 25, fuel contributed rating of 10 and smoke developed rating of 155-190 when treated in accordance with UL 723 testing methods and shall meet the requirements of the Underwriters Laboratories "Wall-Ceiling" Construction Classification.

Insulation thickness shall be 3". (two layers of $1\frac{1}{2}$ " thermax board insulation)

S	R	
1½"	Continuous	10
1½"	Cavity	10

Calculated system "U" value 0.04 (ASHRAE zone method)



http://parkline.com/color-chart/#color

Shell Grey Exterior



*Parkline's standard roof comes with a zinc and aluminum alloy coating. Roof panels are also available with a G90 galanized coating, pre-painted Artic White at an additional cost

NOTE: Factory produced color-coated metal panels will not exactly match the above standard color representations. Embossing will change the perception of color. We are continually working to improve our products, therefore data is subject to change without notice.