Builder/Contractor Responsibilities

Drawing Validity – These drawings, supporting structural calculations and design certification are based on the order documents as of the date of these drawings. These documents describe the material supplied by the manufacturer as of the date of these drawings. Any changes to the order documents after the date on these drawings may void these drawings, supporting structural calculations and design certification. The Builder/Contractor is responsible for notifying the building authority of all changes to the order documents which result in changes to the drawings, supporting structural calculations and design certification.

Builder Acceptance of Drawings – Approval of the manufacturer's drawings and design data affirms that the manufacturer has correctly interpreted and applied the requirements of the order documents and constitutes Builder/Contractor acceptance of the manufacturer's interpretations of the order documents and standard product specifications, including its design, fabrication and quality criteria standards and tolerances. (AISC code of standard practice Sept 86 Section 4.2.1)(Mar 05 Section 4.4.1)

Code Official Approval – It is the responsibility of the Builder/Contractor to ensure that all project plans and specifications comply with the applicable requirements of any governing building authority. The Builder/Contractor is responsible for securing all required approvals and permits from the appropriate agency as required.

Building Erection – The Builder/Contractor is responsible for all erection of the steel and associated work in compliance with the Metal Building Manufacturers drawings. Temporary supports, such as temporary guys, braces, false work or other elements required for erection will be determined, furnished and installed by the erector (AISC Code of Standard Practice Sept 86 Section 7.9.1) (Mar 05 Section 7.10.3) (CSA/S16–09 Section 29).

Discrepancies – Where discrepancies exist between the Metal Building plans and plans for other trades, the Metal Building plans will govern. (AISC Code of Standard Practice Sept 86 Section 3.3) (Mar 05 Section 3.3)

Materials by Others – All interface and compatibility of any materials not furnished by the manufacturer are the responsibility of and to be coordinated by the Builder/Contractor or A/E firm. Unless specific design criteria concerning any interface between materials if furnished as a part of the order documents, the manufacturers assumptions will govern.

Modification of the Metal Building from Plans – The Metal Building supplied by the manufacturer has been designed according to the Building Code and specifications and the loads shown on this drawing. Modification of the building configuration, such as removing wall panels or braces, from that shown on these plans could affect the structural integrity of the building. The Metal Building Manufacturer or a Licensed Structural Engineer should be consulted prior to making any changes to the building configuration shown on these drawings. The Metal Building Manufacturer will assume no responsibility for any loads applied to the building not indicated on these drawings.

Foundation Design
The Metal Building Manufacturer is not responsible for the design, materials and workmanship of the foundation. Anchor rod plans prepared by the manufacturer are intended to show only location, diameter and projection of the anchor rods required to attach the Metal Building System to the foundation. It is the responsibility of the end customer to ensure that adequate provisions are made for specifying rod embedment, bearing values, tie rods and or other associated items embedded in the concrete foundation, as well as foundation design for the loads imposed by the Metal Building System, other imposed loads, and the bearing capacity of the soil and other conditions of the building site. (MBMA 06 Sections 3.2.2 and A3)

A&S BUILDING SYSTEMS

1880 HWY. 116, CARYVILLE, TENNESSEE 37714
PHONE: 865-426-2141 FAX: 865-426-2011

ENGINEERING DESIGN CRITERIA

Building Code	2009 IBC	
Occupancy Category	High Occupancy (Category III)	
Roof Dead Load		
Superimposed	3.83 psf (BLDG A)	
	2.74 psf (BLDG B)	
	4.06 psf (BLDG C)	
	4.15 psf (BLDG D)	
	3.57 psf (BLDG E)	
Collateral	10.00 psf	
(2.00 psf Acoustical Ceiling 8.00 psf Other)		
Roof Live Load	20.00 psf no reduction	
Snow		
Ground Snow Load (Pg)	60.00 psf	
Snow Load Importance Factor (I)	1.10	
Flat Roof Snow Load (Pf)	55.44 psf (BLDG A)	
	46.20 psf (BLDG B, C, D, E)	
Snow Exposure Factor (Ce)	1.20 (BLDG A)	
	1.00 (BLDG B, C, D, E)	
Thermal Factor (Ct)	1.00	
Wind		
Basic Wind Speed	98.00 mph	
Wind Importance Factor (I)	1.15	
Wind Exposure Category	B	
Internal Pressure Coef (GCpi)	0.18/-0.18	
Loads for components not provided by building manufacturer		
BLDG A		
Corner Areas (within 8.18' of corner)	18.46 psf pressure	-24.61 psf suction
Other Areas	18.46 psf pressure	-20.00 psf suction
BLDG B		
Corner Areas (within 3.00' of corner)	21.27 psf pressure	-28.37 psf suction
Other Areas	21.27 psf pressure	-23.05 psf suction
BLDG C		
Corner Areas (within 3.25' of corner)	18.18 psf pressure	-24.24 psf suction
Other Areas	18.18 psf pressure	-19.70 psf suction
BLDG D		
Corner Areas (within 3.00' of corner)	18.18 psf pressure	-24.24 psf suction
Other Areas	18.18 psf pressure	-19.70 psf suction
BLDG E		
Corner Areas (within 3.00' of corner)	18.59 psf pressure	-24.78 psf suction
Other Areas	18.59 psf pressure	-20.14 psf suction
These values are the maximum values required based on a 10 sq ft area.		
Components with larger areas may have lower wind loads.		
Seismic		
Seismic Importance Factor (Ie)	1.25	
Seismic Design Category	B	
Soil Site Class	D Stiff Soil	
Ss	0.241 g	Sds 0.257 g
S1	0.078 g	Sd1 0.125 g
Analysis Procedure	Equivalent Lateral Force	
Column Line	All	
Basic Force Resisting System	H	
Response Modification Coefficient (R)	3.00	
Seismic Response Coefficient (Cs)	0.11	
Design Base Shear in kips (V)	64.42 (BLDG A)	
	3.45 (BLDG B)	
	3.49 (BLDG C)	
	0.77 (BLDG D)	
	0.72 (BLDG E)	
Basic Structural System (from ASCE 7-05 Table 12.2-1)		
H - Steel System not Specifically Detailed for Seismic Resistance		

DEFLECTION CRITERIA

The material supplied by the manufacturer has been designed with the following minimum deflection criteria. The actual deflection may be less depending on actual load and actual member length. The frame sidesway for wind loading is based on ASCE 7 commentary equation CC-3 of 0.7W. The limits shown are at service loads unless indicated otherwise.

BUILDING DEFLECTION LIMITS...: Building A

Ceiling Type : Acoustical or Other

Roof Limits	Rafters	Purlins	Panels
Live L/	180	150	60
Patio L/	480	480	480
Snow L/	180	180	60
Wind L/	180	180	60
Total Gravity L/	240	240	240
Total Uplift L/	180	180	180

Frame Limits	Sidesway	Portal Frame Sidesway
Live H/	60	
Snow H/	60	
Wind H/	60	
Seismic Drift H/	50	50
Total Gravity H/	60	
Total Wind H/	60	60
Service Seismic H/	50	50

Wall Limits	Limit
Total Wind Panels L/	60
Total Wind Girts L/	90
Total Wind EW Columns L/	120

BUILDING DEFLECTION LIMITS...: All Other Buildings

Ceiling Type : Acoustical or Other

Roof Limits	Rafters	Purlins	Panels
Live L/	180	150	60
Snow L/	180	180	60
Wind L/	180	180	60
Total Gravity L/	150	150	240
Total Uplift L/			180

Frame Limits	Sidesway	Portal Frame Sidesway
Live H/	60	
Snow H/	60	
Wind H/	60	
Seismic Drift H/	50	50
Total Gravity H/	60	
Total Wind H/	60	60
Service Seismic H/	50	50

Wall Limits	Limit
Total Wind Panels L/	60
Total Wind Girts L/	90
Total Wind EW Columns L/	120

The Service Seismic limit as shown here is at service level loads.

PROJECT NOTES

BOLT TIGHTENING - Bolted joints with A325 Type 1 bolts greater than 1/2" diameter are specified as pretensioned joints in accordance with the Specification for Structural Joints Using ASTM A325 or A490 Bolts, December 31, 2009. Pre-Tensioning can be accomplished by using the turn-of-nut method of tightening, calibrated wrench, twist off type tension control bolts or direct tension indicator as acceptable to the Inspecting Agency and Building Official. Installation Inspection requirements for Pre-Tensioned joints (Specification for Structural Joints Section 9.2) using turn-of-nut method is suggested.
The connections on this project are not slip critical.

Material properties of steel bar, plate, and sheet used in the fabrication of built-up structural framing members conform to ASTM A529, ASTM A572, ASTM A1011 SS, or ASTM A1011 HSLAS with a minimum yield point of 50 ksi. Material properties of hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with a minimum specified yield point of 50 ksi. Hot rolled angles, other than flange braces, conform to ASTM 36 minimum. Hollow structural shapes conform to ASTM A500 grade B, minimum yield point is 42 ksi for round HSS and 46 ksi for rectangular HSS. Material properties of cold-formed light gage steel members conform to the requirements of ASTM A1011 SS Grade 55, ASTM A1011 HSLAS Grade 55 Class 1, ASTM A653 SS Grade 55, or ASTM A653 HSLAS Grade 55 Class 1 with a minimum yield point of 55 ksi. For Canada, material properties conform to CAN/CSA G40.20/G40.21 or equivalent.

Design criteria as noted is as given within order documents and is applied in general accordance with the applicable provisions of the model code and/or specification indicated. Neither the manufacturer nor the certifying engineer declares or attests that the loads as designated are proper for local provisions that may apply or for site specific parameters. The design criteria is supplied by the builder, project owner, or an Architect and/or Engineer of Record for the overall construction project.

Framed openings, walk doors, and open areas shall be located in the bay and elevation as shown in the erection drawings. The cutting or removal of girts shown on the erection drawings due to the addition of framed openings, walk doors, or open areas not shown may void the design certifications supplied by the metal building manufacturer.

X-Bracing is to be installed to a taut condition with all slack removed. Do not tighten beyond this state.

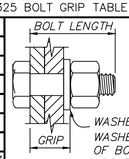
The design collateral load has been uniformly applied to the design of the building. Hanging loads are to be attached to the purlin web. This may not be appropriate for heavily concentrated loads. Any attached load in excess of 150 pounds shall be accounted for by special design performed by a licensed engineer using concentrated loads and may require separate support members within the roof system.

This metal building system is designed as enclosed. All exterior components (i.e. doors, windows, vents, etc.) must be designed to withstand the specified wind loading for the design of components and cladding in accordance with the specified building code. Doors are to be closed when a maximum of 50% of design wind velocity is reached.

It is the responsibility of the builder to provide an adequate secondary drainage system above the roof system to prevent ponding from occurring due to the parapet or interior drainage. Areas on this project with parapet walls and/or internal gutters must be furnished with rainwater overflow mechanisms (such as scuppers) to prevent the accumulation of water in the event that the primary draining system is blocked. It is the responsibility of the builder to provide scuppers or other methods that are of the appropriate size, quantity, location, and design to prevent water accumulation on the roof. Design and installation of the secondary drainage system is not included in the metal building manufacturer's scope of work.

½"ø A325 BOLT GRIP TABLE

GRIP	LENGTH
0 TO 9/16"	1 1/4" F.T.
Over 9/16" TO 1 1/16"	1 3/4" F.T.
Over 1 1/16" TO 1 5/16"	2"
Over 1 5/16" TO 1 9/16"	2 1/4"
Over 1 9/16" TO 1 13/16"	2 1/2"
Over 1 13/16" TO 2 1/16"	2 3/4"
LOCATIONS OF BOLTS LONGER THAN 2 3/4" NOTED ON ERECTION DRAWINGS	
F.T. DENOTES FULLY THREADED	



NOTE:
FULL THREAD ENGAGEMENT IS DEEMED TO HAVE BEEN MET WHEN THE END OF THE BOLT IS FLUSH WITH THE FACE OF THE NUT.

WASHER REQUIRED ONLY WHEN SPECIFIED. WASHER MAY BE LOCATED UNDER HEAD OF BOLT, UNDER NUT, OR AT BOTH AT LOCATIONS NOTED ON ERECTION DRAWINGS. ADD 5/32" FOR EACH WASHER TO MATERIAL THICKNESS TO DETERMINE GRIP.

Revision	Date	Description	By	Ck'd

Reviewed for Code Compliance Acadia Insurance Plan Review Services
Date: 06/08/16

A&S BUILDING SYSTEMS
1880 HWY. 116, CARYVILLE, TENNESSEE 37714
PHONE: 865-426-2141 FAX: 865-426-2011

Project Name & Location:
BAYSIDE BOWL ADDITION
58 ALDER STREET
PORTLAND, ME. 04101

Customer:
AMERICAN AERIAL SERVICES, INC.
33 ALLEN AVENUE EXT.
FALMOUTH, ME. 04105

Drawing Status:
☐ Preliminary (Not For Construction)
☐ For Approval (Not For Construction)
☒ For Construction Permit
☐ For Erector Installation

Scale: NOT TO SCALE
Drawn by: DRF
Checked by: NC
Project Engineer: BDC
Job Number: 15-B-26518-1
Sheet Number: E1 of 30

The engineer whose seal appears hereon is an employee for the manufacturer for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project.

Lee W. Lowe, P.E.
Maine P.E. 8861

Apr 26, 2016

STATE OF MAINE
LEE W. LOWE
8861
LICENSED
PROFESSIONAL ENGINEER