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)

PROJECT NOTES

BUILDING B:
Using Standard(5x5) eave gutter with 4 x 5 rolled form downspouts, the roof drainage system has been designed using the method outlined in the MBMA Metal Building Systems Manual. Downspout locations have not been located on these drawings. The downspouts are to be placed on the building sidewalls at a spacing not to exceed 28 feet with the first downspout from both ends of the gutter run within 19 feet of the end. Downspout spacing that does not exceed the maximum spacing will be in compliance with the building code. The gutter and downspout system as provided by the manufacturer is designed to accommodate 7.0 in/hr rainfall intensity.

The rigid frame at lines B&B.3 are designed as a Rigid Bearing frame. Corresponding frame reactions are calculated based upon actual tributary area.

In accordance with the specified building code, snow drift surcharge loads (Pd) have been applied as follows:
53.90 psf drift surcharge with a width of 14.09 ft at bldg B along grid line 1

BUILDING C:
Using Standard(5x5) eave gutter with 4 x 5 rolled form downspouts, the roof drainage system has been designed using the method outlined in the MBMA Metal Building Systems Manual. Downspout locations have not been located on these drawings. The downspouts are to be placed on the building sidewalls at a spacing not to exceed 28 feet with the first downspout from both ends of the gutter run within 19 feet of the end. Downspout spacing that does not exceed the maximum

spacing will be in compliance with the building code. The gutter and downspout system as provided by the manufacturer is designed to accommodate 7.0 in/hr rainfall intensity.

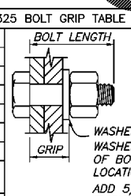
The rigid frame at lines D.7&K are designed as a Rigid Bearing frame. Corresponding frame reactions are calculated based upon actual tributary area.

In accordance with the specified building code, snow drift surcharge loads (Pd) have been applied as follows:
44.90 psf drift surcharge with a width of 16.91 ft at bldg C along grid line 1

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.

MESCO Building Solutions

5244 Bear Creek Court Irving, TX 75061
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MBMA METAL BUILDING MANUFACTURERS ASSOCIATION

ENGINEERING DESIGN CRITERIA

Building Code ..... IBC 18
Risk Category..... II – Normal

Roof Dead Load
Superimposed.....2.50 psf (Bldg_A)
Superimposed.....2.80 psf (Bldg_B&C)
Collateral.....5.00 psf (Bldg_A)
Collateral.....1.00 psf (Bldg_B&C)
Roof Live Load..... 20.00 psf Yes reduction

Snow
Ground Snow Load (Pg)..... 10.0 psf
Snow Load Importance Factor (Is) 1.00
Snow Exposure Factor (Ce)..... 1.00
Thermal Factor (Ct)..... 1.00
Flat Roof Snow Load (Pf)..... 7.00 psf

Wind
Ultimate Wind Speed (Vult)..... 115 mph
Nominal Wind Speed (Vasd)..... 89 mph (IBC Section 1609.3.1)
Serviceability Wind Speed ..... 74 mph
Wind Exposure Category C
Internal Pressure Coef (GCpi) 0.18/–0.18
Loads for components not provided by building manufacturer
Wall Edge Zones 25.49 psf pressure –33.99 psf suction
Other Wall Zones 25.49 psf pressure –27.62 psf suction (Bldg_A)
Wall Edge Zones 25.49 psf pressure –33.99 psf suction
Other Wall Zones 25.49 psf pressure –27.62 psf suction (Bldg_B&C)
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) 1.00
Seismic Design Category..... C
Soil Site Class..... D
Ss..... 0.306 g Sds ..... 0.317 g
S1..... 0.095 g Sd1 ..... 0.152 g
Analysis Procedure..... Equivalent Lateral Force

Location...Int RF	Front SW	Back SW	Left EW	Right EW
System..... H	H	H	H	H
R..... 3	3	3	3	3
Cs..... 0.106	0.106	0.106	0.106	0.106

Design Base Shear in kips (V) Transverse 22.24 Longitudinal 22.93
Basic Structural System (from ASCE 7–16 Table 12.2–1)
System – Basic Force Resisting System
H – Steel System not Specifically Detailed for Seismic Resistance

PROJECT NOTES

BOLT TIGHTENING – All bolted joints with A325-SC9 Type 1 bolts are specified as snug–tightened joints in accordance with the Specification for Structural Joints Using ASTM A325 or A490 Bolts, June 30, 2004. Pre–tensioning methods, including turn–of–nut, calibrated wrench, twist off type tension control bolts or direct tension indicators are NOT required. Installation Inspection requirements for snug tight bolts (Specification for Structural Joints Section 9.1) is suggested.

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. All 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 grade 55, 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 loads 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.

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.

BUILDING DEFLECTION LIMITS...: BLDG–A,B & C

Roof Limits	Rafters	Purlins	Panels
Live L/	180	150	60
Snow L/	180	180	60
Serviceability Wind L/	180	180	60
Total Gravity L/	120	120	60
Total Uplift L/	N/A	N/A	60

Frame Limits	Sidesway
Live H/	100
Snow H/	100
Serviceability Wind H/	100
Seismic Drift H/	100
Total Gravity H/	100
Service Seismic H/	100
Wall Limits	Limit
Total Wind Panels L/	60
Total Wind Girts L/	90
Total Wind Girts L/	240 (Girts above 10'Along GL–7, along B b/t lines 6.4–7)
Total Wind EW Columns L/	240 (Along GL–7)
Total Wind EW Columns L/	240

PROJECT NOTES

BUILDING A:
Using Northern(7x7) eave gutter with 4 x 5 press broke downspouts, the roof drainage system has been designed using the method outlined in the MBMA Metal Building Systems Manual. Downspout locations have not been located on these drawings. The downspouts are to be placed on the building sidewalls at a spacing not to exceed 36 feet with the first downspout from both ends of the gutter run within 18.0 feet of the end. Downspout spacing that does not exceed the maximum spacing will be in compliance with the building code. The gutter and downspout system as provided by the manufacturer is designed to accommodate 7.0 in/hr rainfall intensity.

Roof top units are to be supported between Hot–Rolled beams.
The roof top units shall be located to have any roof openings to be in between the hot rolled beams. The framing provided by the manufacturer has been designed with roof top units at the following locations. The dimensions shown are to the center of the unit and may be adjusted 2 ft in any direction to allow for any roof penetrations to clear the purlins or rod bracing. The roof purlins or bracing shall not be cut or removed at a roof opening.

4000 lbs RTU–1 Located at 40.6667 ft from LEW(GRID 1) and 40.00 ft from grid line B.
4000 lbs RTU–2 Located at 95.1667 ft from LEW(GRID 1) and 40.00 ft from grid line B
1300 lbs RTU Located at 152 ft from LEW(GRID 1) and 47.5 ft from grid line B

BA fans are to be supported between roof purlins. These fans shall be located in the purlin space, weight and locations are as follows.
300 lbs FAN Located at 13'6" from LEW(GRID 1) and 45'0" from grid line B
300 lbs FAN Located at 67'8" from LEW(GRID 1) and 45'0" from grid line B

33"x33" inside clear roof curb from LEW(GRID–1) 49'–75/8" and 7'–915/16" from grid line B
33"x33" inside clear roof curb from LEW(GRID–1) 51'–23/8" and 31'–41/16" from grid line B
28"x28" inside clear roof curb from LEW(GRID–1) 45'–811/16" and 7'–10" from grid line B
28"x28" inside clear roof curb from LEW(GRID–1) 58'–315/16" and 31'–611/16" from grid line B
13" diameter clear roof curb from LEW(GRID–1) 61'–111/4" and 31'–75/8" from grid line B

In accordance with the specified building code, snow drift surcharge loads (Pd) have been applied as follows:
40.40 psf drift surcharge with a width of 10.56 ft at bldg A along grid line 7
28.30 psf drift surcharge with a width of 14.78 ft at bldg A along grid line 7
30.40 psf drift surcharge with a width of 7.95 ft at bldg A, along grid line B.

The support members provided by the metal building manufacturer on building A at 10' level along gird line 7 between grids B–C and along gird line B between grids 6.4–7 have been designed as lintel beams and to deflect less than L/600 under dead loading.

The wall construction by others at building A, along gird line 7, along gird line B between grids 7–6.4 has a self–weight of 54 psf. This weight has been utilized in the design considerations for the building's seismic design.

The rigid frame at lines 7 is designed as a Rigid Bearing frame. Corresponding frame reactions are calculated based upon actual tributary area.

The girts in building A, along gird line 7 between , along B between grids 7–6.4 Above 10'–0" been designed with the exterior panel by others attached to the outer flange of the girts. The exterior panel system shall be attached to the support members or girts at a maximum spacing of 1 feet If the Exterior panel is not installed or is removed the girt shall be reviewed for structural adequacy.

Drawing Index

Revision	Date	Description	Ck'd
0	05/22/20	FOR ERECTOR INSTALLATION	PNR
			BNS

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5244 Bear Creek Court Irving, TX 75061
Voice 214-687-9999 Fax 214-687-9737

MESCO Building Solutions, LLC
5244 BEAR CREEK RD
Voice 214-687-9999 FAX 214-687-4447 US

Project Name & Location:
CC FIVE FORKS SC
CROSS DEVELOPMENT
1215 E BUTLER RD
GREENVILLE,SC 29607–5911 US

Customer:
CROSS DEVELOPMENT LLC
4336 MARSH RIDGE RD
CARROLLTON,TX 75010–4447 US
MEAGAN VIERREN

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

Scale: NOT TO SCALE
Drawn by: BNS 05/22/20
Checked by: PNR 05/22/20
Project Engineer: SH
Job Number: 17–B–60327
Sheet Number: C1

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.

Drawing has been digitally signed.

Jason Speegle
May 26, 2020

SOUTH CAROLINA PROFESSIONAL ENGINEER NO. 26802 JASON SPEEGLE

OTB Drawings 5/26/2020