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. (April 2010 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 (April 2010 Section 7.10.3).

Discrepancies – Where discrepancies exist between the Metal Building plans and plans for other trades, the Metal Building plans will govern. (April 2010 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)

Robertson Building Systems

1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

For questions regarding the interpretation of the drawings, materials provided, or assembly of the parts:
- Call 1-905-304-2431 and ask for the "Field Service" department.
- Before or after normal hours, you may send an email to FieldServices@RobertsonBuildings.com. Please include the order no., brief description of the question, & contact name and phone number.

ENGINEERING DESIGN CRITERIA

Building Code	2015 National Building Code Of Canada
Building Importance Category	Normal
Roof Dead Load Superimposed:	0.12 kPa // 2.52 psf
Roof Collateral Load:	0.02 kPa // 0.50 psf
(other: 0.02 kPa // 0.50 psf)	
Roof Live Load	1.01 kPa // 21.00 psf
Ground Snow Load (Ss)	2.40 kPa // 50.12 psf
Rain Load (Sr)	0.40 kPa // 8.40 psf
Basic Roof Snow Load Factor (Cb)	0.80
Roof Slope Factor (Cs)	1.00
Importance Factor (Is)	1.00
Shape Factor (Ca)	1.00
Snow Exposure Factor (Cw)	1.00
Roof Snow Load	2.32 kPa // 48.50 psf
Wind Load '1/50	0.41 kPa // 8.56 psf
Wind Exposure (Ce)	Open Terrain
Building Internal Pressure	Category 2
Wind Importance Factor (Iw)	1.00
Wind Topographic Factor	1.00
Seismic Data	
Sa(0.2) =	0.40
Sa(0.5) =	0.22
Sa(1.0) =	0.11
Sa(2.0) =	0.05
Sa(5.0) =	N/A
Sa(10.0) =	N/A
Pga =	0.26
Fa =	1.08
Fv =	1.39
Soils Site Class:	D
Importance Factor (Ie)	1.00
Transverse Response Modification Rd	1.50
Longitudinal Response Modification Rd	1.50
Overstrength Factor Ro	1.30

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 lateral drift or sidesway is based upon importance factors of 0.9 for specified snow loads and 0.75 for specified wind loads. The limits shown are at service loads unless indicated otherwise.

BUILDING DEFLECTION LIMITS.....: BLDG-A

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

Frame Limits		Sidesway	Portal Frame Sidesway
Live:	H/	180	
Snow:	H/	180	
Wind:	H/	60	
Seismic:	H/	78	78
Total Wind:	H/	60	60
Total Gravity:	H/	180	
Total Seismic:	H/	78	78

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

PROJECT NOTES

Material properties of steel bar, plate, and sheet used in the fabrication of built-up structural framing members conform to ASTM A529, ASTM A572, or ASTM A1011 with 55 ksi min. yield, except flanges wider than 12" and thicker than 3/8", all flanges thicker than 1", and all webs thicker than 3/8" are 50 ksi min. yield. Rod X-bracing conforms to ASTM A529 or ASTM A572 with 50 ksi min. yield. Cable X-bracing conforms to ASTM A475 7 Strand Extra High-Strength grade. Hot rolled structural shapes conform to ASTM A992, ASTM A529, or ASTM A572 with 50 ksi min. yield. Hot rolled angles, other than flange braces, conform to ASTM A36 minimum. Round and rectangular HSS conforms to ASTM A500 Grade B. Cold-formed steel secondary framing Members conform to ASTM A1011 or ASTM A653 Grade 55 with 55 ksi min. yield. For Canada, material properties conform to CAN/CSA G40.20/G40.21 or equivalent.

BOLT TIGHTENTING FOR CANADIAN JOBS- Rigid frame connection bolts with ASTM A325-A490 Type 1 bolts greater than 1/2" diameter are specified as pretensioned joints in accordance with the Specification for Structural Joints Using High-Strength Bolts, August 1, 2014. All the brace connections except rod braces must be pretensioned. Pretensioning 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 pretensioned joints (Specification for Structural Joints Section 9.2) using direct-tension-indicator is recommended. The connections on this project are not slip critical. Base plate anchor bolts are not required to be pretensioned. Mezzanine beam connection are not required to be pretensioned unless otherwise noted.

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 metal building 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.

The metal building manufacturer has not designed the structure for snow accumulation loads at the ground level which may impose snow loads on the wall framing provided by the manufacturer.

The following criteria apply to projects in Canada.
a. Erection tolerances must meet the requirements of CAN/CSA-S16.
b. For projects in Canada the NCI Building Systems Houston, TX plant has received the Canadian welding bureau certification to CSA standard W47.1 in Division 1.
c. For projects in Canada the NCI Building Systems Houston, TX plant has received certification under the Manufactures of Steel Building Systems CAN/CSA A660 requirements.

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.

The framing at building A frame line 1 is designed to receive a future addition with a maximum bay spacing of 20 feet as measured between centerline of the existing endwall frame to the centerline of the future frame.

The girts in building A and side A have been designed with the liner attached to the inner flange of the girts. If the liner is not installed or is removed the girt shall be reviewed for structural adequacy.

25% of Roof Snow included in Seismic Weight Calculations.

Using 7 x 7 eave gutter with 4 x 5 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 80 feet with the first downspout from both ends of the gutter run within 40 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 4 in/hr rainfall intensity.

Drawing Index

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E1 of 17

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A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

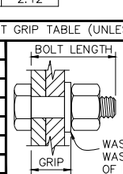
Download panel installation manuals from:
www.ncimanuals.com

Descargue los manuales de instalación del panel desde:
www.ncimanuals.com

BUILDING DESCRIPTIONS

Building ID	Width	Length	Height	Slope
Building A	60'-0	80'-0	20'-0	2:12

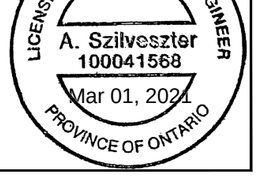
1/2"ø A325 BOLT GRIP TABLE (UNLESS NOTED)	
GRIP	LENGTH
0 TO 9/16"	1 1/4" F.T.
Over 9/16" TO 1 1/16"	1 3/4" F.T.
Over 1 1/16" TO 1 5/16"	2"
Over 1 5/16" TO 1 9/16"	2 1/4"
Over 1 9/16" TO 1 13/16"	2 1/2"
Over 1 13/16" TO 2 1/16"	2 3/4"
LOCATIONS OF BOLTS LONGER THAN 2 3/4" NOTED ON ERECTION DRAWINGS	
F.T. DENOTES FULLY THREADED	



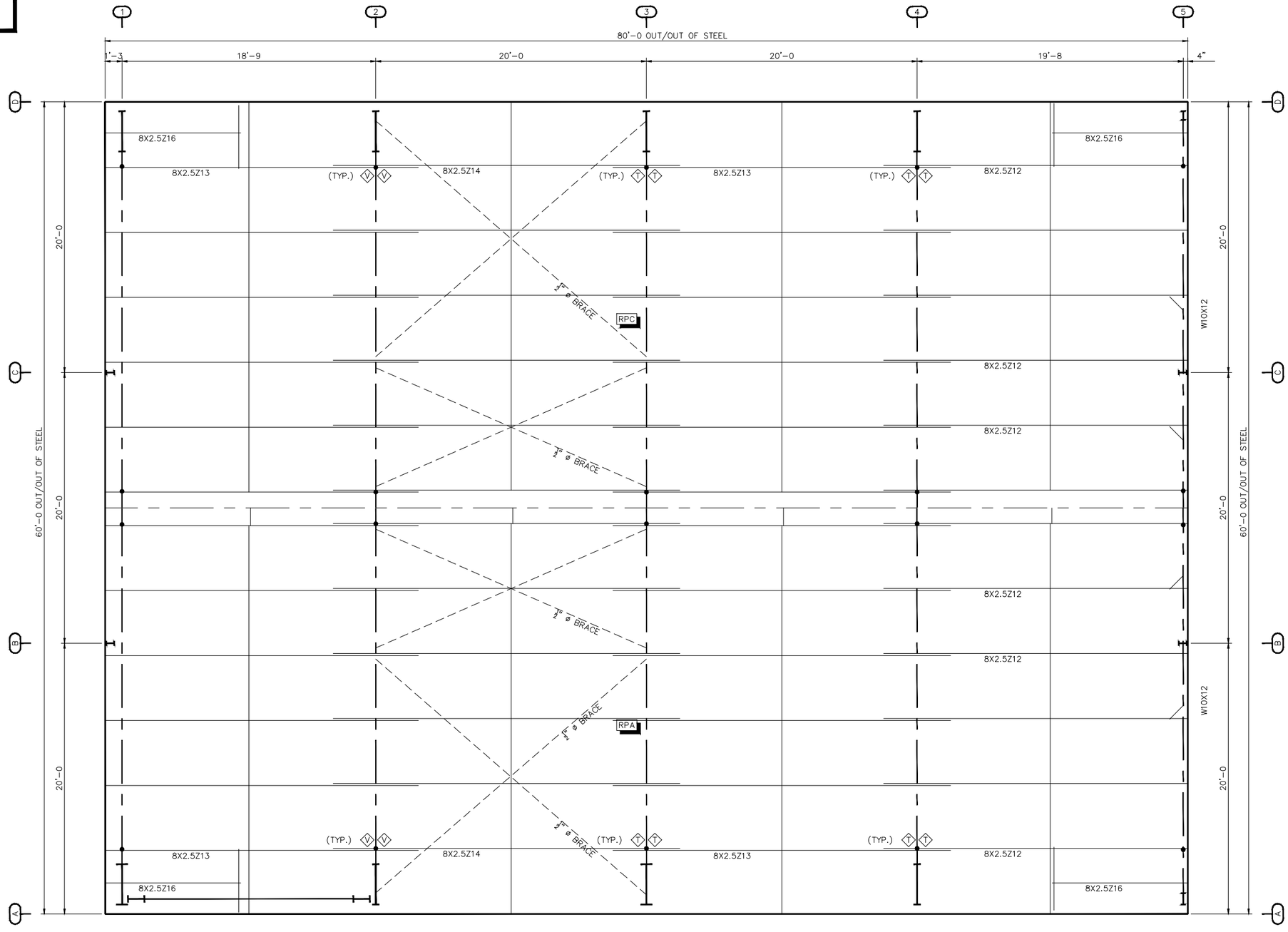
NOTE: FULL THREAD ENGAGEMENT IS DEEMED TO HAVE BEEN MET WHEN THE END OF THE BOLT IS FLUSH WITH THE FACE OF THE NUT.

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.

Drawing has been digitally signed.



● – DENOTES: CLIP LOCATION
SC90 AT 8" PURLINS
SC92 AT 10" PURLINS
SC94 AT 12" PURLINS



SWC
EWB KEY PLAN EWD
SWA

ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	–0'–0 1/4"	T	2'–5 3/4"
S	0'–3 3/4"	V	3'–1 1/4"
R	1'–5 3/4"	REFER TO CF01122	

ROOF FRAMING PLAN

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
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905-304-1111

Project Name & Location:
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5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: E2 of 17

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ONTARIO P.ENG 100041568

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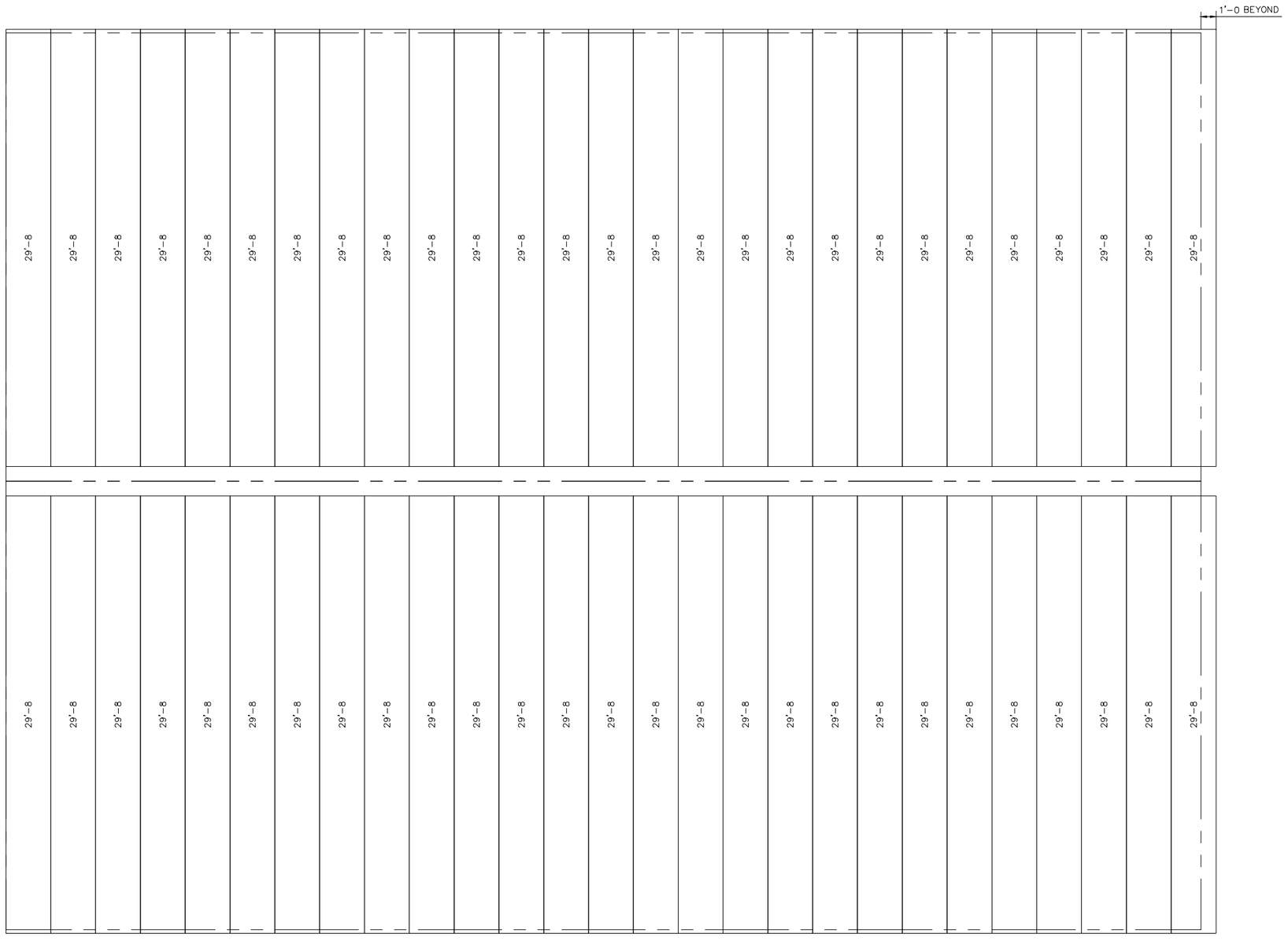
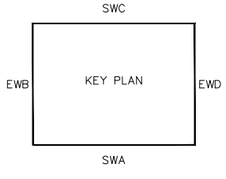
LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

ROOF SHEETING PLANE 2
PANEL TYPE = PBR (GALVALUME)
PANEL OVERHANG = 3"
FROM OUTER STEEL



ROOF SHEETING PLANE 1
PANEL TYPE = PBR (GALVALUME)
PANEL OVERHANG = 3"
FROM OUTER STEEL

ROOF SHEETING PLAN



DOWNSPOUT LAYOUT
[2 REQ'D]

NOTE

THE DOWNSPOUTS ARE TO BE PLACED ON THE BUILDING SIDEWALLS AT A SPACING NOT TO EXCEED 80 FEET WITH THE FIRST DOWNSPOUT FROM BOTH ENDS OF THE GUTTER RUN WITHIN 40 FEET OF THE END.

Revision	Date	Description	By	Ck'd
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Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: E3 of 17

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A. Szilveszter
100041568
Mar 01, 2021
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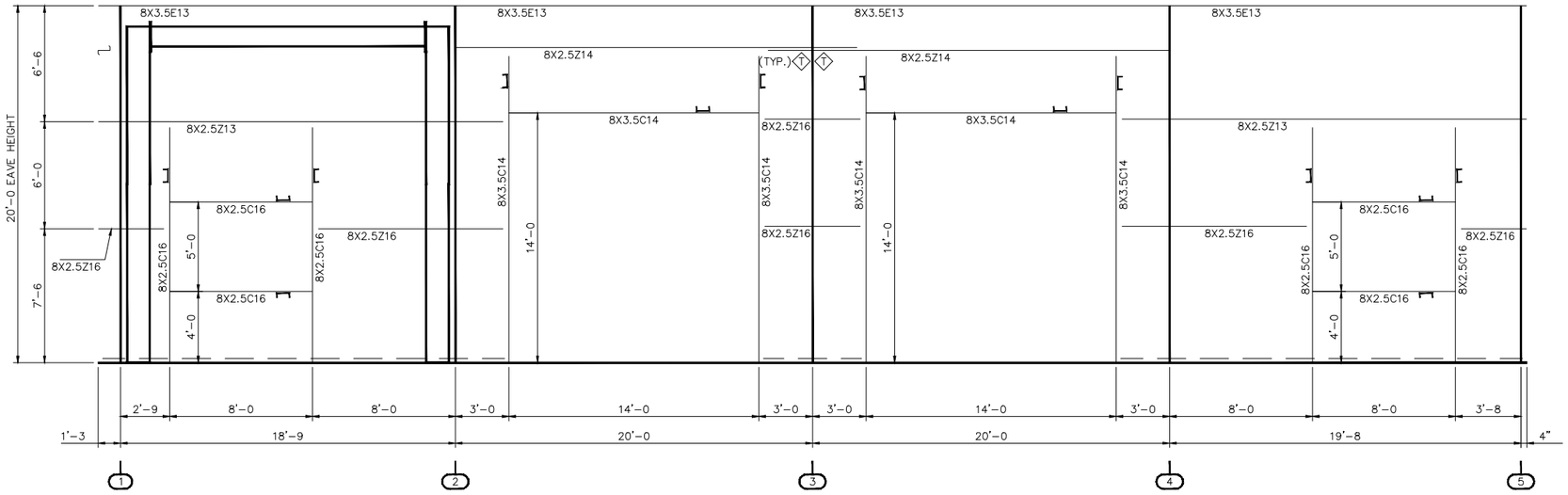
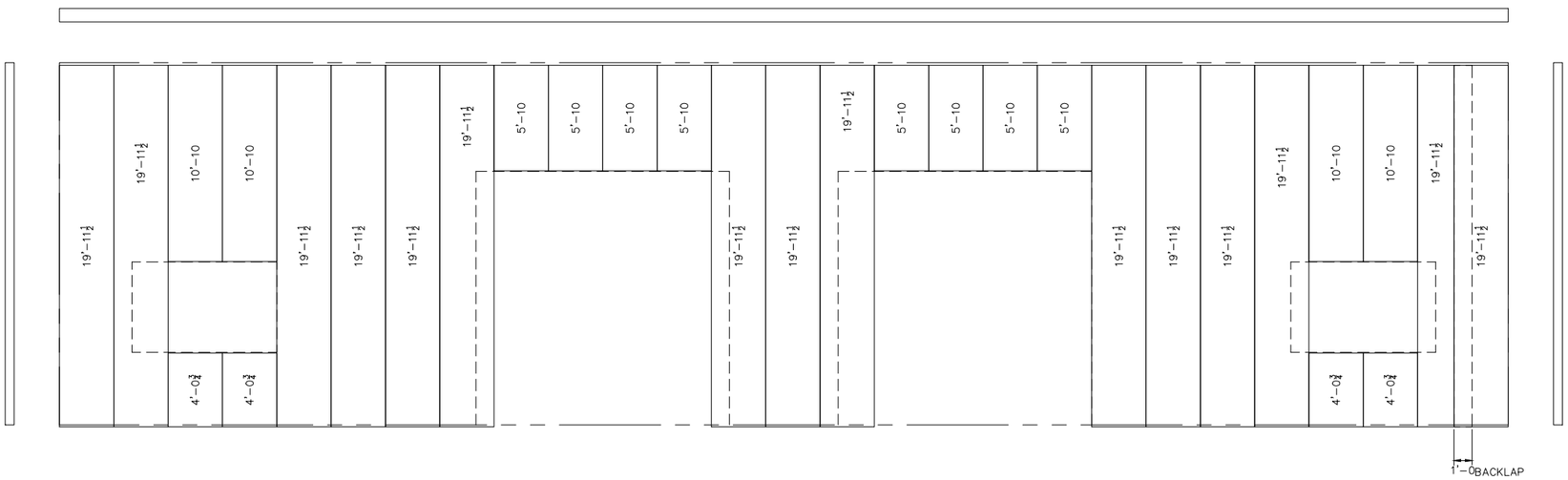
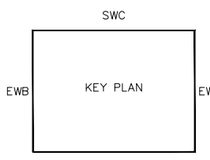


SIDEWALL ELEVATION "SWA" AT GRID LINE "A"



PBR WALL PANELS
PANEL COVERAGE = 3'-0
COLOR = CHARCOAL GRAY
PANEL PKG. REQ'D. = PBS-2
Field Cut Panel and Trim as required per Construction Details

WALL SHEETING ELEVATION "SWA"
BLDG "A"



ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	−0'−0¼"	T	2'−5½"
S	0'−3½"	V	3'−1¼"
R	1'−5¾"	REFER TO CF01122	

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

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☒ For Construction Permit
☐ For Erector Installation

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E4 of 17

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ONTARIO P.ENG 100041568

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100041568
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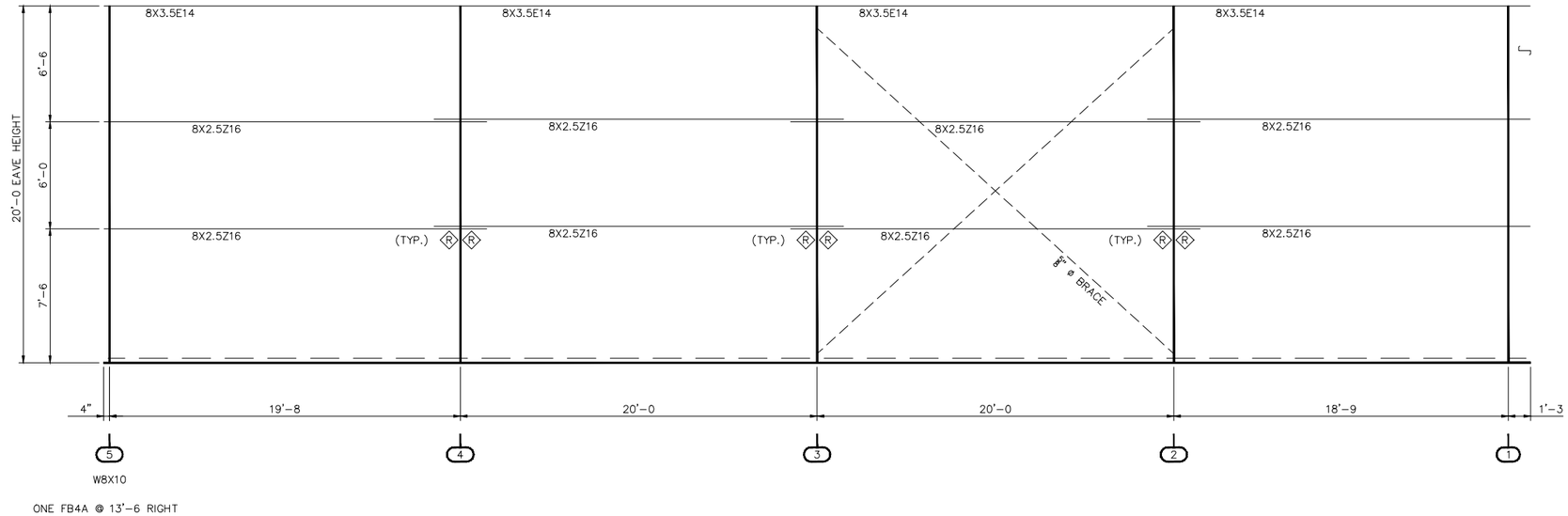
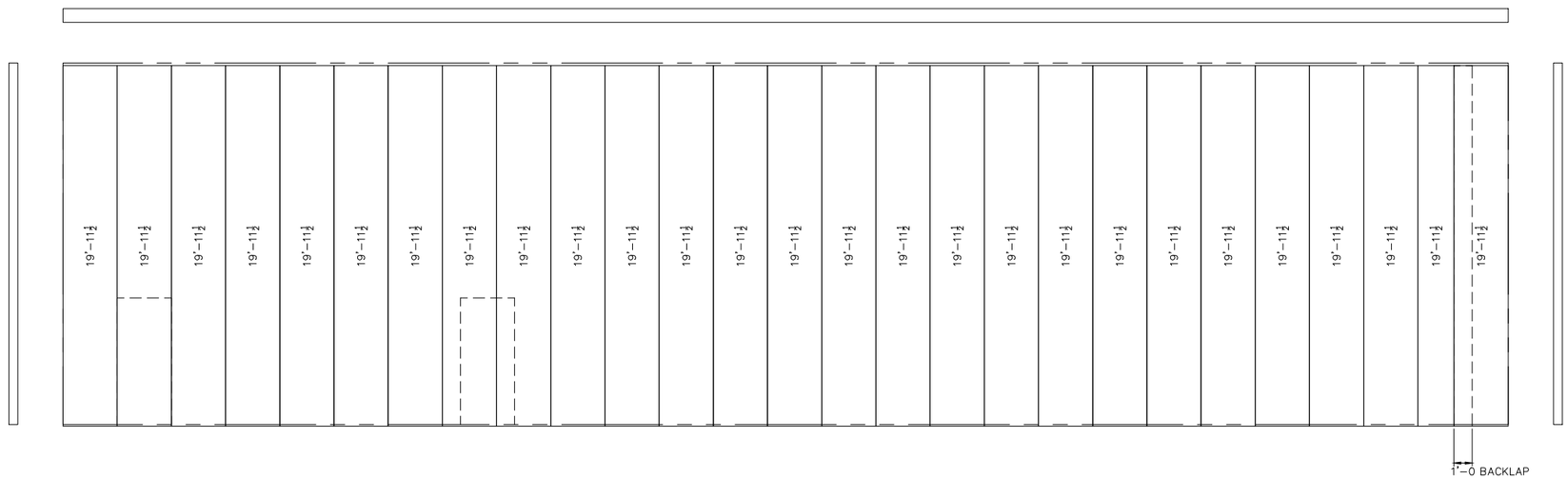
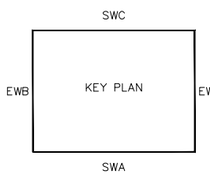


SIDEWALL ELEVATION "SWC" AT GRID LINE "D"



PBR WALL PANELS
PANEL COVERAGE = 3'-0
COLOR = CHARCOAL GRAY
PANEL PKG. REQ'D. = PBS-3
Field Cut Panel and Trim as required per Construction Details

WALL SHEETING ELEVATION "SWC"
BLDG "A"



ZEE SECTION LAP TABLE			
SYMBOL	LAP LENGTH	SYMBOL	LAP LENGTH
G	−0'−0¼"	T	2'−5½"
S	0'−3½"	V	3'−1¼"
R	1'−5¾"	REFER TO CF01122	

Revision	Date	Description	By	Ck'd
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☒ For Construction Permit
☐ For Erector Installation

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E5 of 17

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ONTARIO P.ENG 100041568

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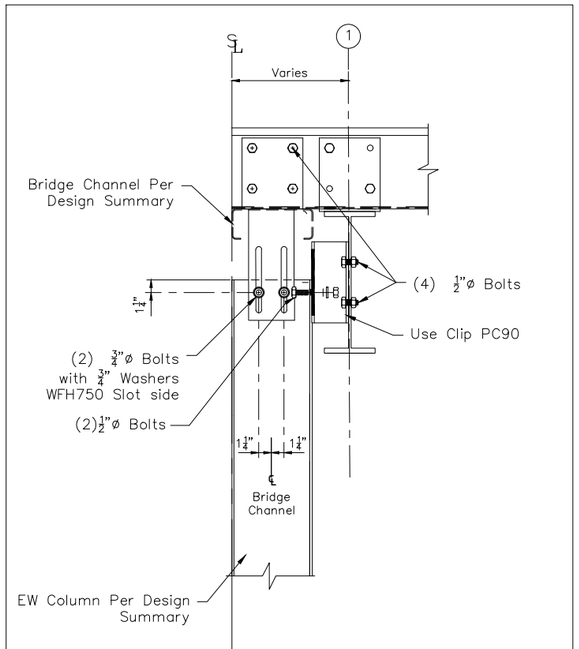
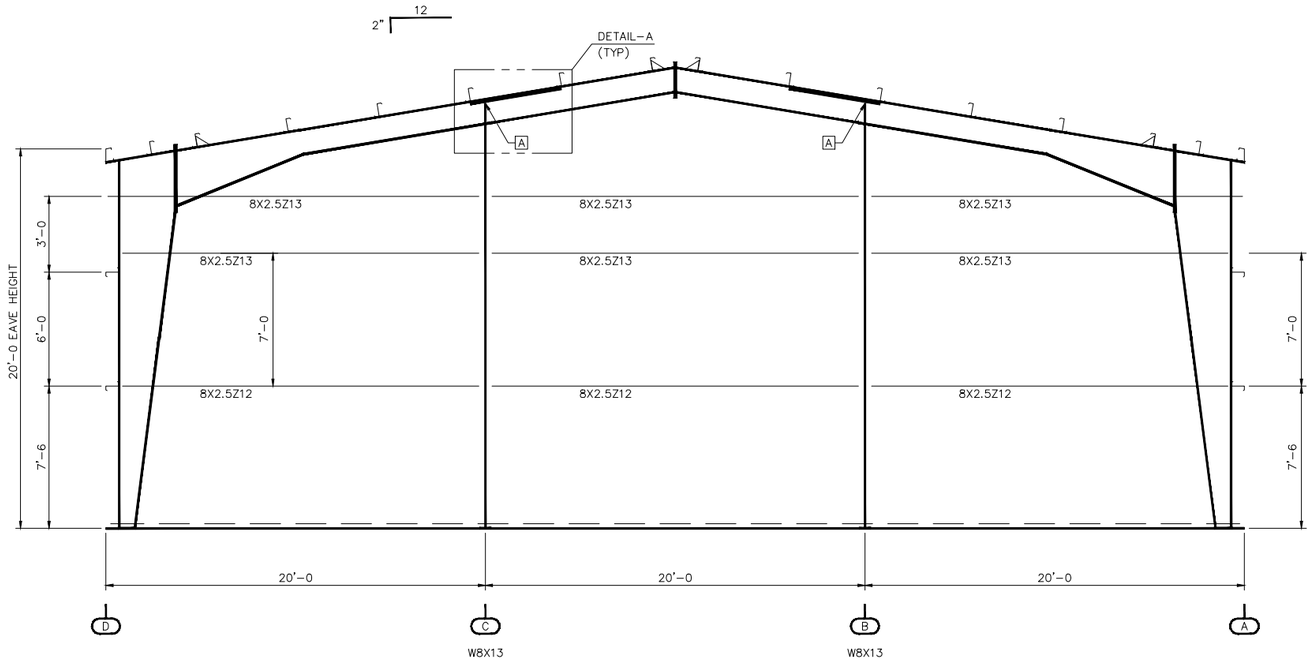
LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

SPLICE BOLT TABLE				
CONN.	QTY. SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	(4) $\frac{3}{4}$ X $1\frac{3}{4}$	A325 B&N	0	0

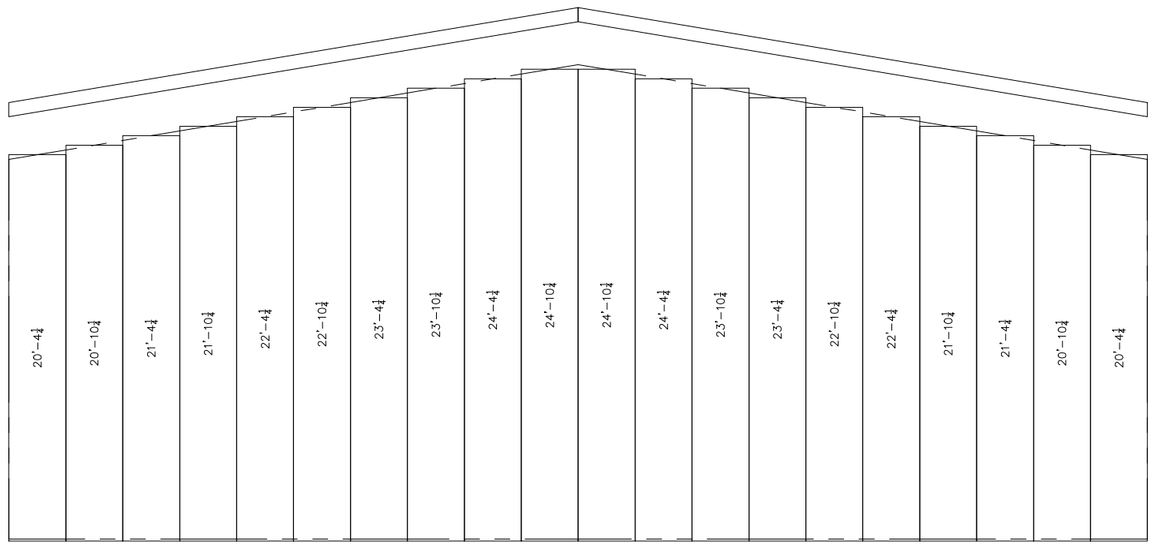


DETAIL–A

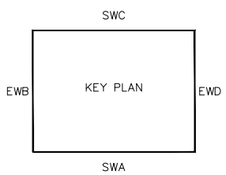


ENDWALL ELEVATION "EWB" AT GRID LINE "1"

PBR WALL PANELS
PANEL COVERAGE = 3'–0
COLOR = CHARCOAL GRAY
PANEL PKG. REQ'D. = PBS–1
Field Cut Panel and Trim as required per Construction Details



WALL SHEETING ELEVATION "EWB"
BLDG "A"



Revision	Date	Description	By	Ck'd
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Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E6 of 17

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A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

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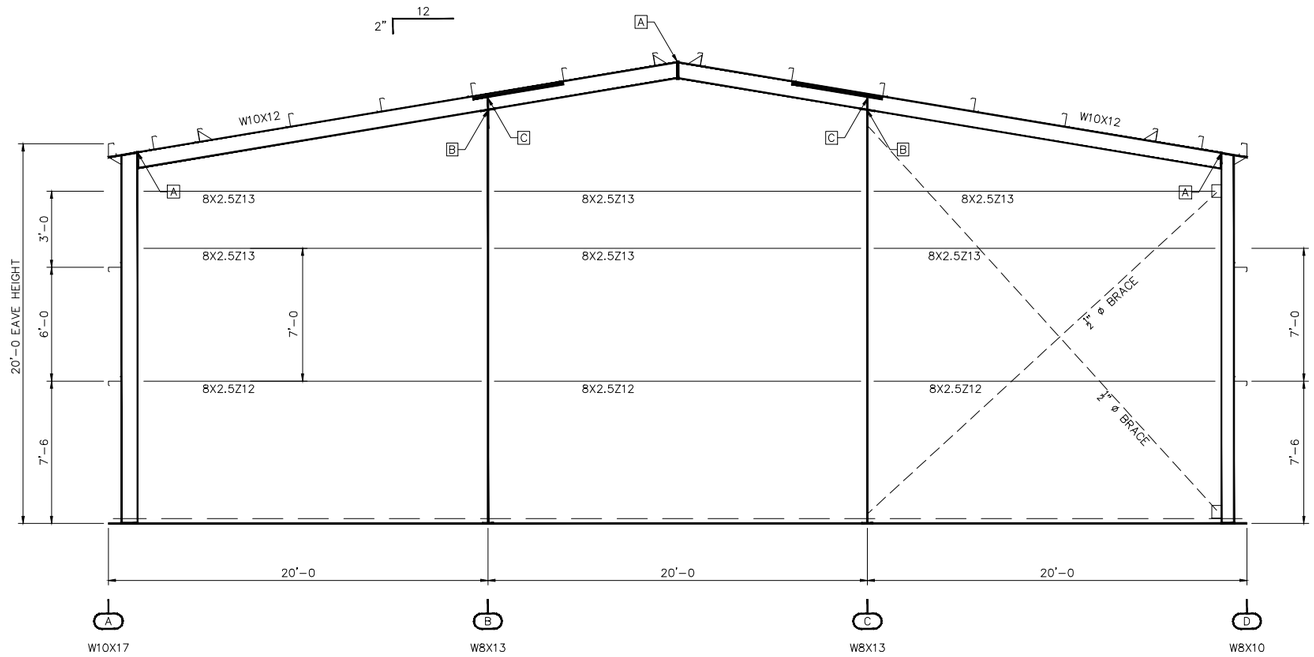
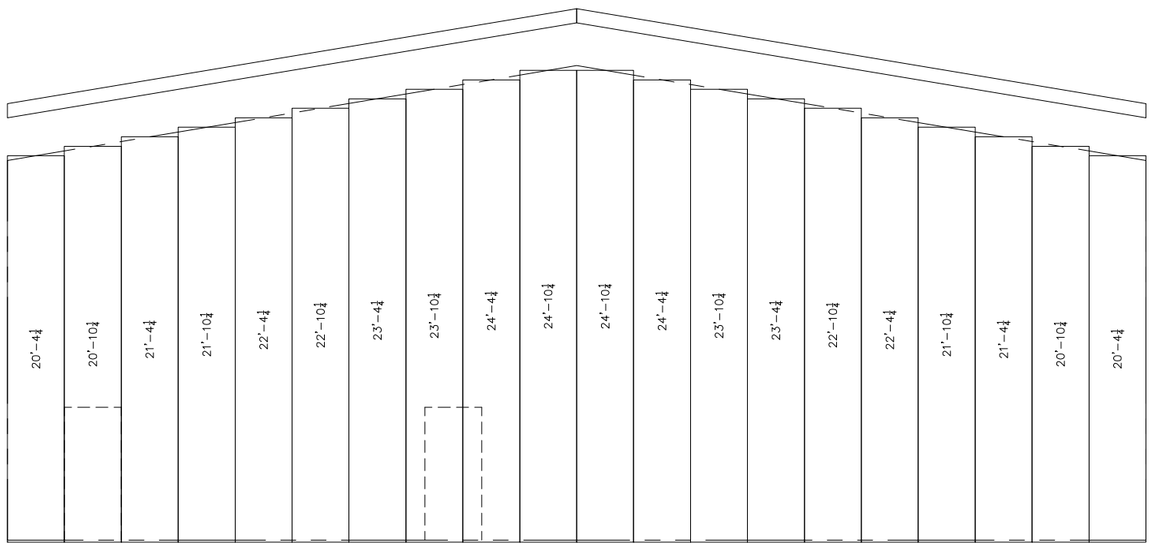
LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

SPLICE BOLT TABLE				
CONN.	QTY. SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	(4) $\frac{1}{2}$ X 1$\frac{3}{4}$	A325 B&N	0	0
B	(4) $\frac{1}{2}$ X 1$\frac{3}{4}$	A325 B&N	4	0
C	(4) $\frac{3}{4}$ X 1$\frac{3}{4}$	A325 B&N	0	0

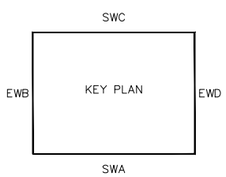


ENDWALL ELEVATION "EWD" AT GRID LINE "5"



WALL SHEETING ELEVATION "EWD"
BLDG "A"

PBR WALL PANELS
PANEL COVERAGE = 3'-0
COLOR = CHARCOAL GRAY
PANEL PKG. REQ'D. = PBS-4
Field Cut Panel and Trim as required per Construction Details



Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

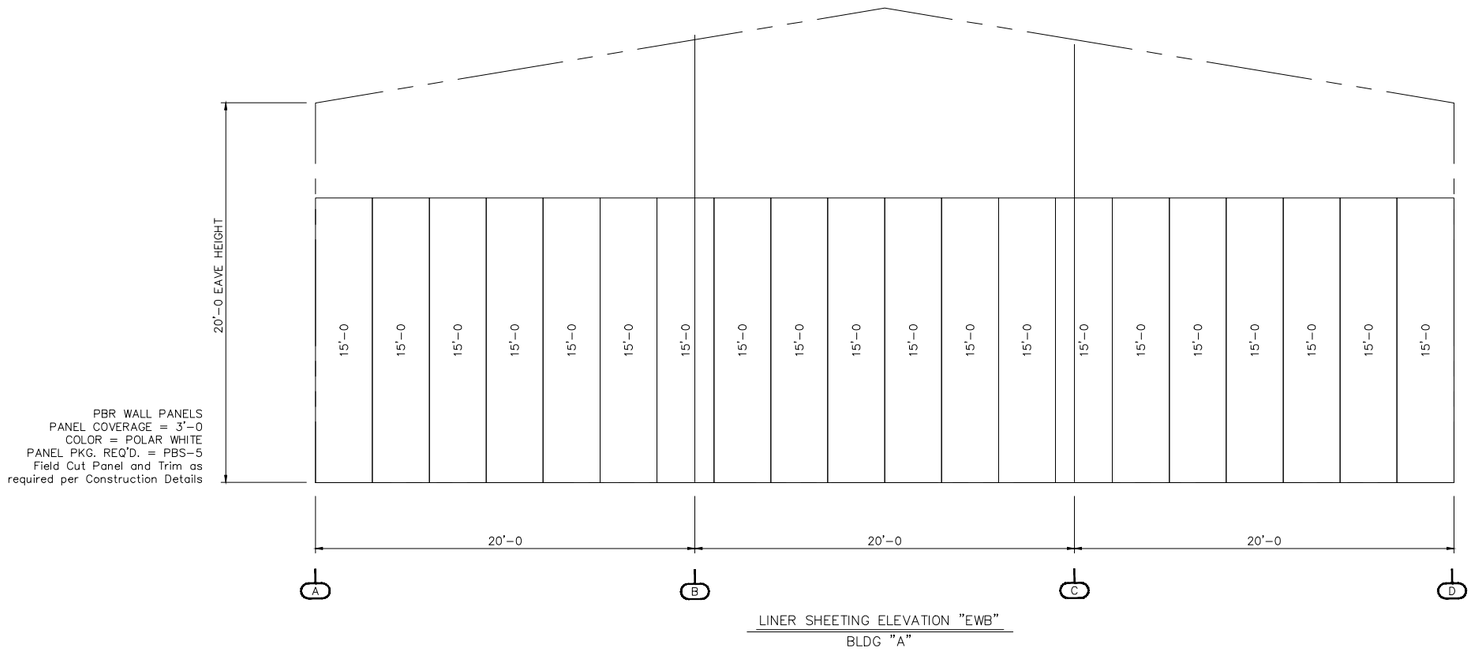
Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E7 of 17

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO



LINER SHEETING ELEVATION "EWB"
BLDG "A"

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

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

Scale:	NOT TO SCALE	
Drawn by:	SRA	3/1/21
Checked by:	DLS	3/1/21
Project Engineer:	EJA	
Job Number:	17-B-93413	
Sheet Number:	E8 of 17	

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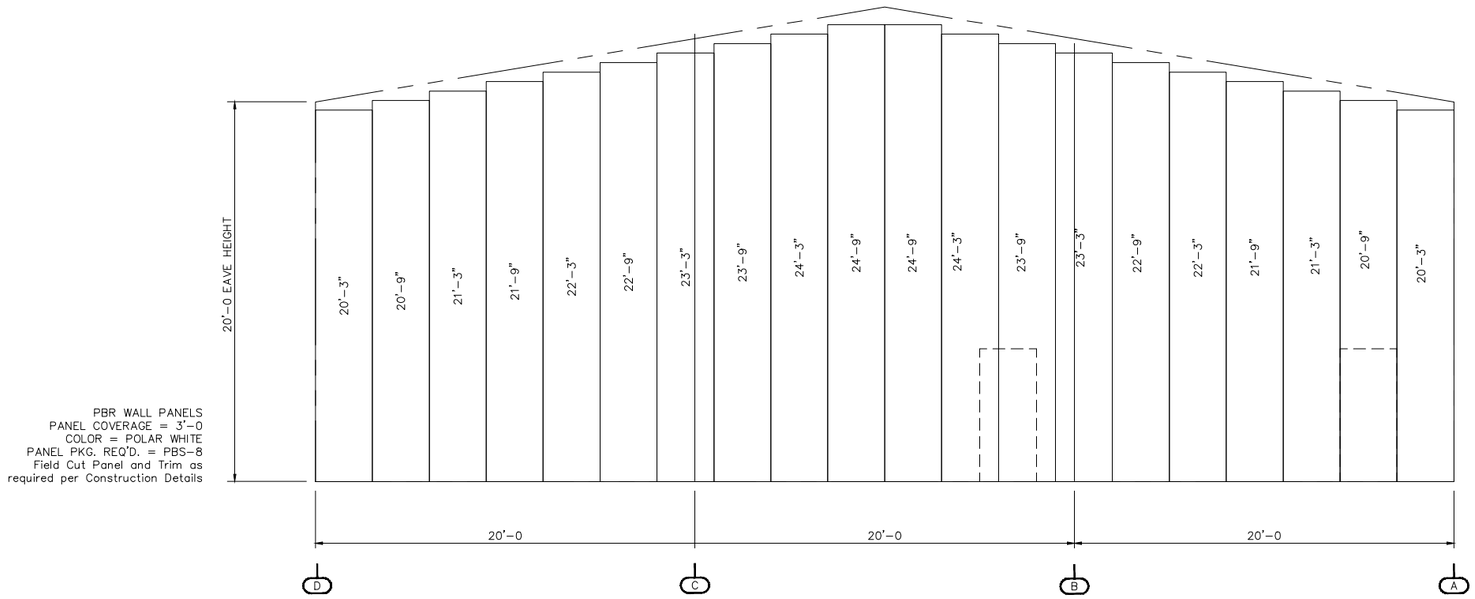
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO



LINER SHEETING ELEVATION "EWD"
BLDG "A"

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

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

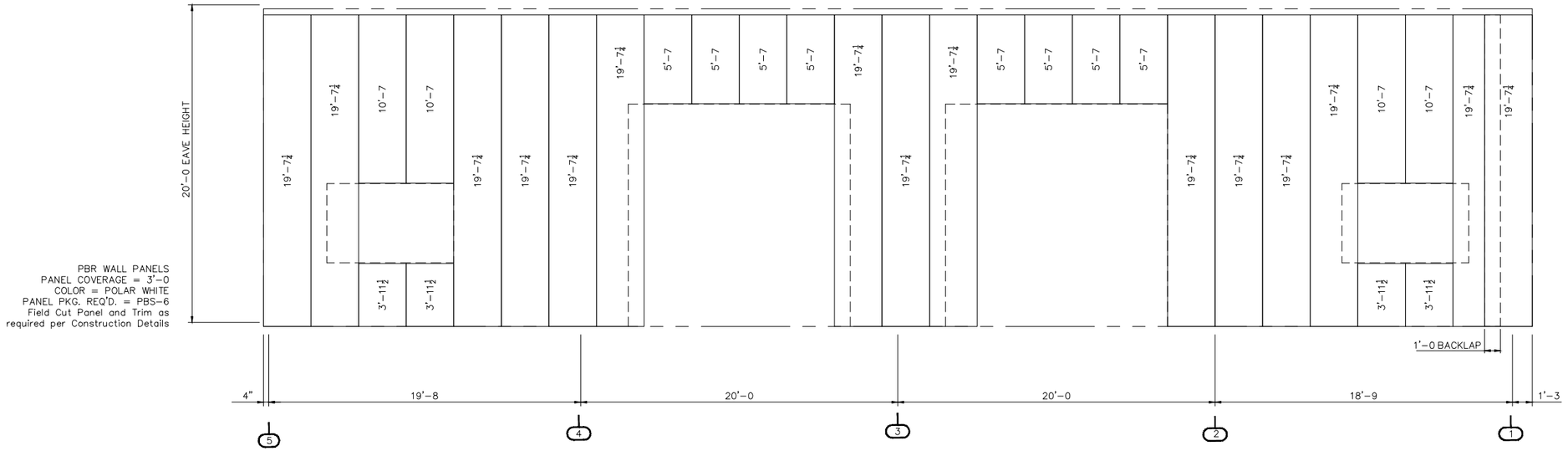
Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: E9 of 17

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO



LINER SHEETING ELEVATION "SWA"
BLDG "A"

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Customer: METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

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

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: E10 of 17

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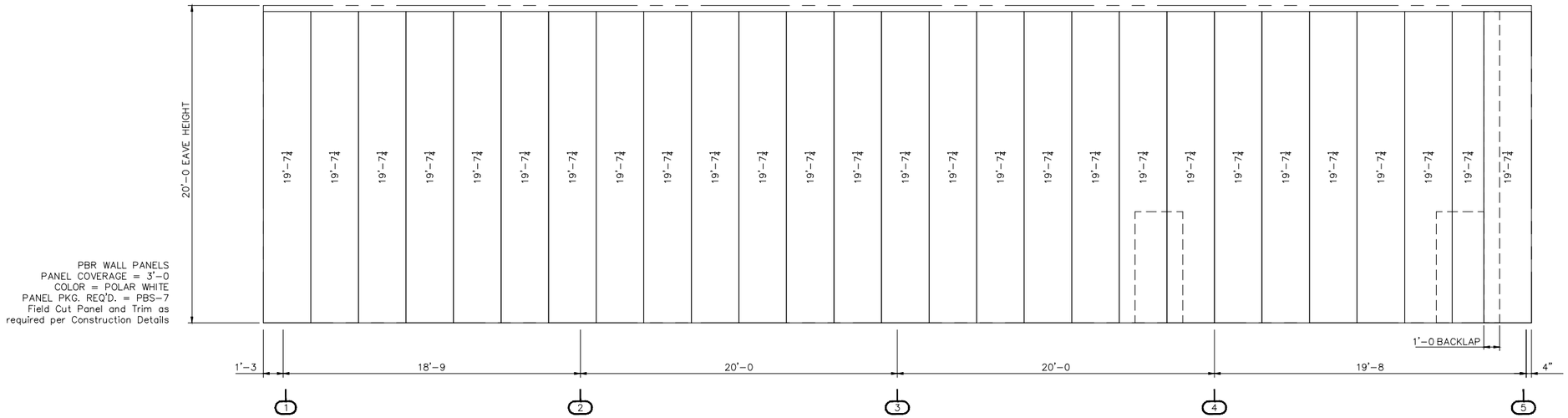
A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO



LINER SHEETING ELEVATION "SWC"
BLDG "A"

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Customer: METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E11 of 17

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A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

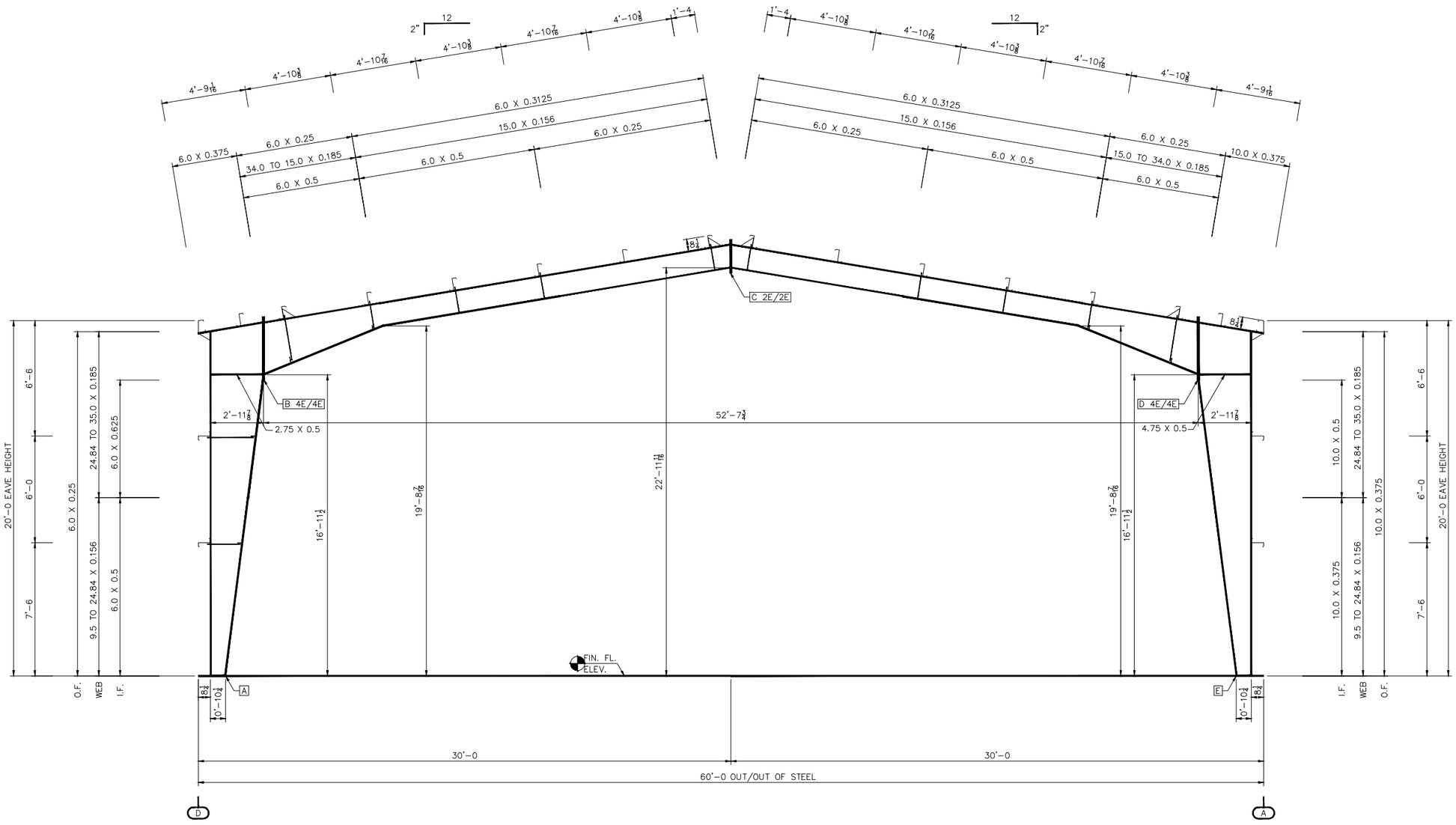
Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

OY/PROJECTS\XDS-V8-13-01 FRAME = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x01L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x01R 2/ 8/21 08:55:57 2/ 8/21 08:55:57
OY/PROJECTS\XDS-V8-13-01 FB SET = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x01L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x01R

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.



CROSS SECTION AT FRAME LINE "1"

	PLATE SIZE TABLE		SPLICE BOLT TABLE			
CONN.	LOW SIDE	HIGH SIDE	QTY. SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	6 X 0.375 X 0'-10 1/4					
B	6 X 0.625 X 3'-6 3/8	6 X 0.5 X 3'-5 7/8	(16) 3/4 X 2 1/4	A325 B&N	0	0
C	6 X 0.5 X 1'-10	6 X 0.5 X 1'-10	(8) 3/4 X 2"	A325 B&N	0	0
D	10 X 0.5 X 3'-6 3/8	6 X 0.5 X 3'-5 7/8	(16) 3/4 X 2"	A325 B&N	0	0
E	10 X 0.375 X 0'-10 1/4					

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E12 of 17

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

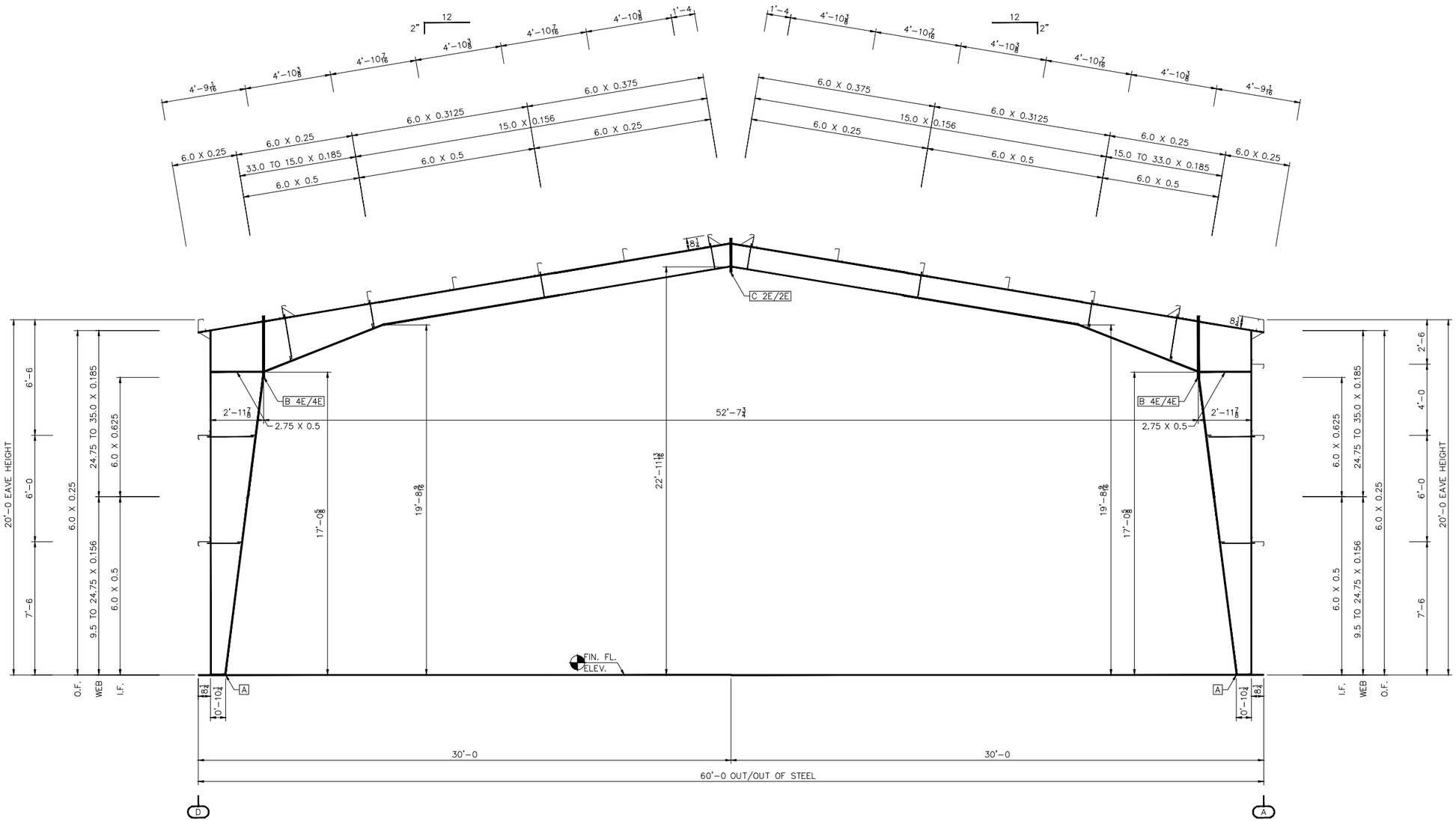
Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

OY/PROJECTS\XDS-V8-13-01 FRAME = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x02L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x02R 2/ 8/21 08:57:27 2/ 8/21 08:57:27
OY/PROJECTS\XDS-V8-13-01 FB SET = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x02L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x02R

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.



CROSS SECTION AT FRAME LINE "2"

	PLATE SIZE TABLE		SPLICE BOLT TABLE				
CONN.	LOW SIDE	HIGH SIDE	QTY.	SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	6 X 0.375 X 0'-10 1/4						
B	6 X 0.625 X 3'-5 1/2	6 X 0.5 X 3'-4 3/4	(16)	3/4 X 2 1/4	A325 B&N	0	0
C	6 X 0.5 X 1'-10 1/16	6 X 0.5 X 1'-10 1/16	(8)	3/4 X 2"	A325 B&N	0	0

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: E13 of 17

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

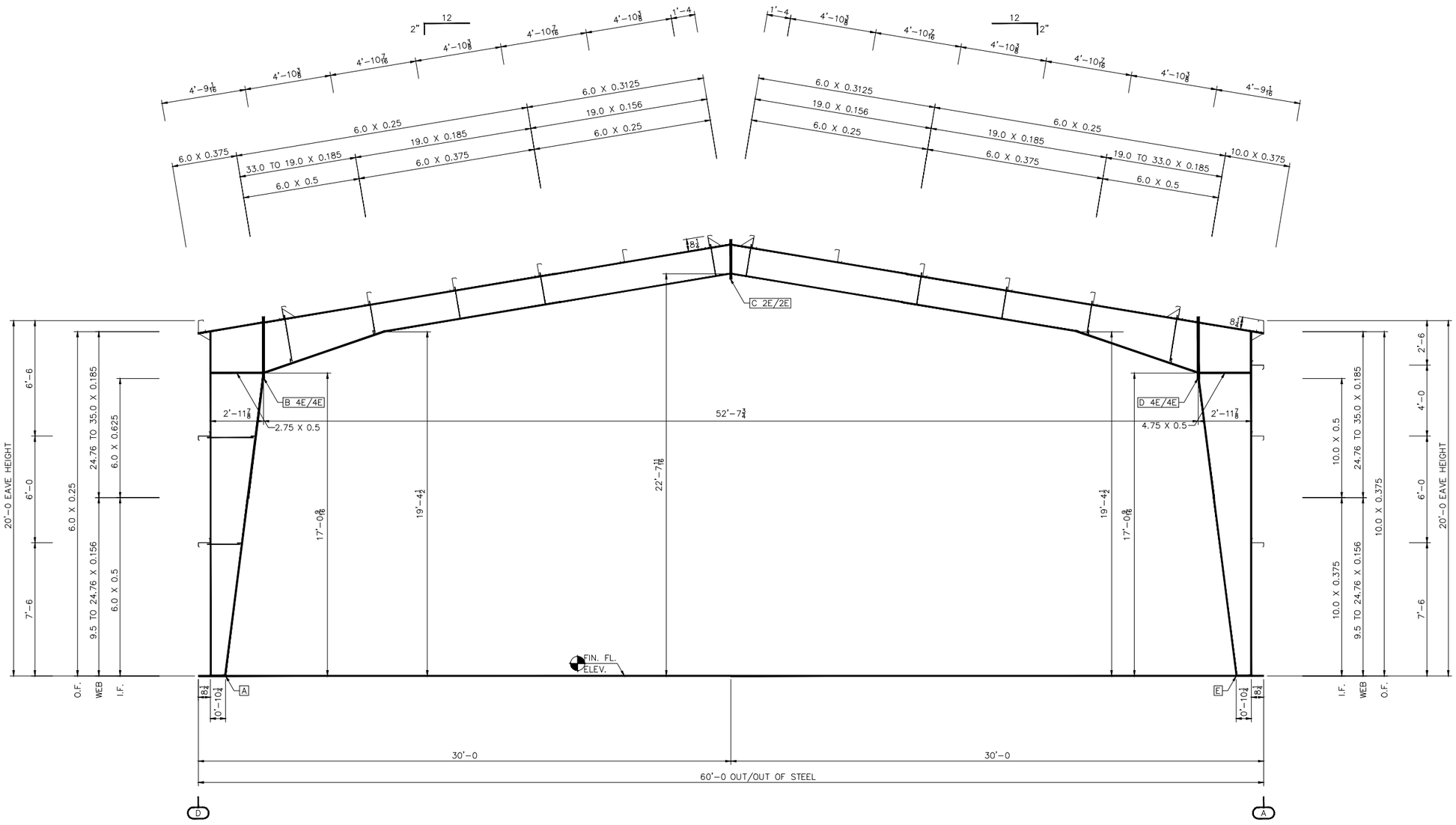
Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

OY/PROJECTS\XDS-V8-13-01 FRAME = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x03L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x03R 2/ 8/21 08:58:37 2/ 8/21 08:58:37
OY/PROJECTS\XDS-V8-13-01 FB SET = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x03L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x03R

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.



CROSS SECTION AT FRAME LINE "3"

	PLATE SIZE TABLE		SPLICE BOLT TABLE			
CONN.	LOW SIDE	HIGH SIDE	QTY. SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	6 X 0.375 X 0'-10 1/4					
B	6 X 0.625 X 3'-5 5/16	6 X 0.5 X 3'-4 13/16	(16) 3/4 X 2 1/4	A325 B&N	0	0
C	6 X 0.5 X 2'-2 1/16	6 X 0.5 X 2'-2 1/16	(8) 3/4 X 2"	A325 B&N	0	0
D	10 X 0.5 X 3'-5 5/16	6 X 0.5 X 3'-4 13/16	(16) 3/4 X 2"	A325 B&N	0	0
E	10 X 0.375 X 0'-10 1/4					

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E14 of 17

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A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

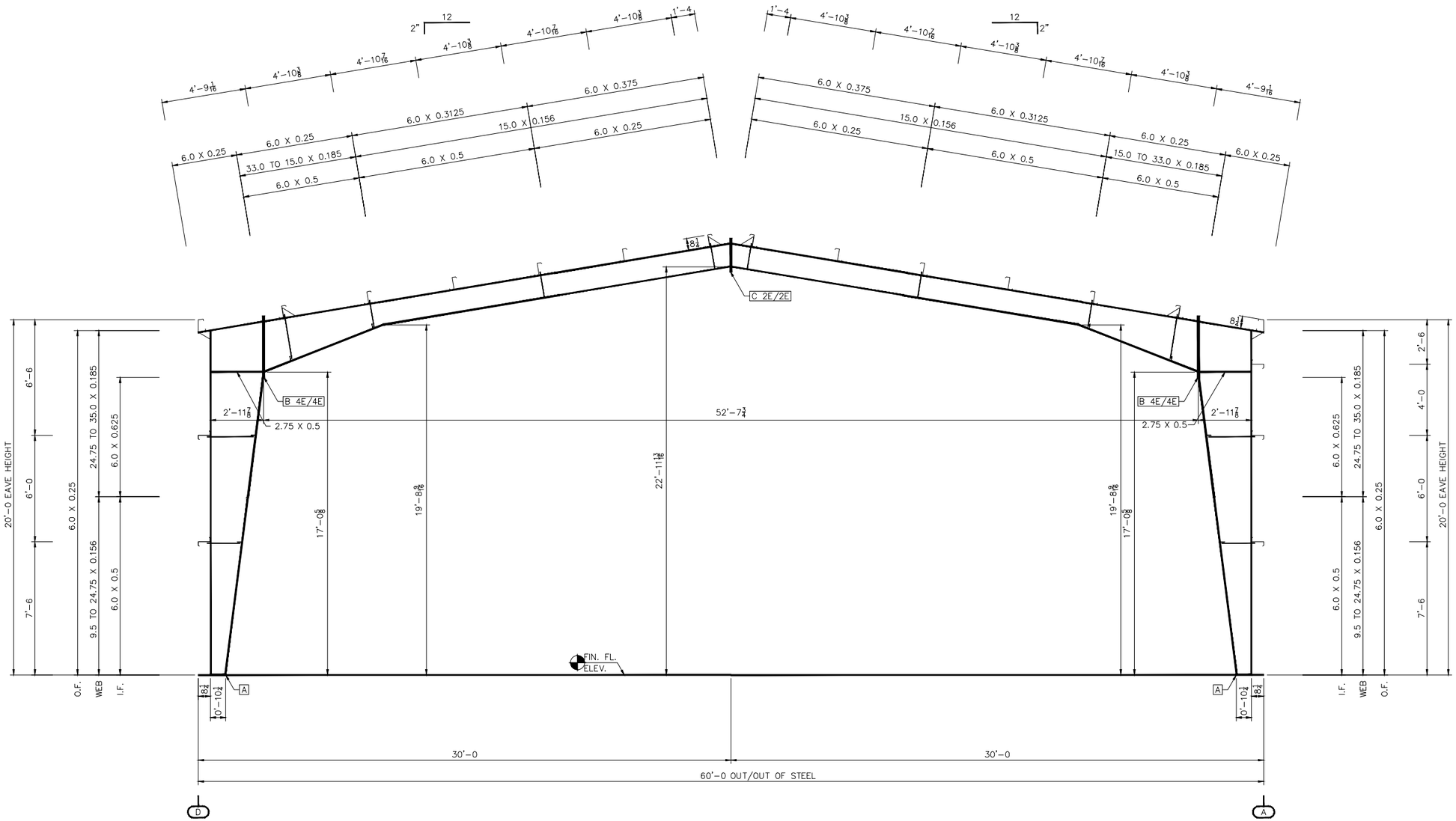
Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

OY/PROJECTS\XDS-V8-13-01 FRAME = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x02L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/Drftg/x02R 2/ 8/21 08:57:27 2/ 8/21 08:57:27
OY/PROJECTS\XDS-V8-13-01 FB SET = Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x02L Eng/17-B-93413/ver01-ejalvarado/BLDG-A/DRFTG/x02R

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.



CROSS SECTION AT FRAME LINE "4"

	PLATE SIZE TABLE		SPLICE BOLT TABLE				
CONN.	LOW SIDE	HIGH SIDE	QTY.	SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	6 X 0.375 X 0'-10 1/4						
B	6 X 0.625 X 3'-5 1/2	6 X 0.5 X 3'-4 3/4	(16)	3/4 X 2 1/4	A325 B&N	0	0
C	6 X 0.5 X 1'-10 1/16	6 X 0.5 X 1'-10 1/16	(8)	3/4 X 2"	A325 B&N	0	0

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E15 of 17

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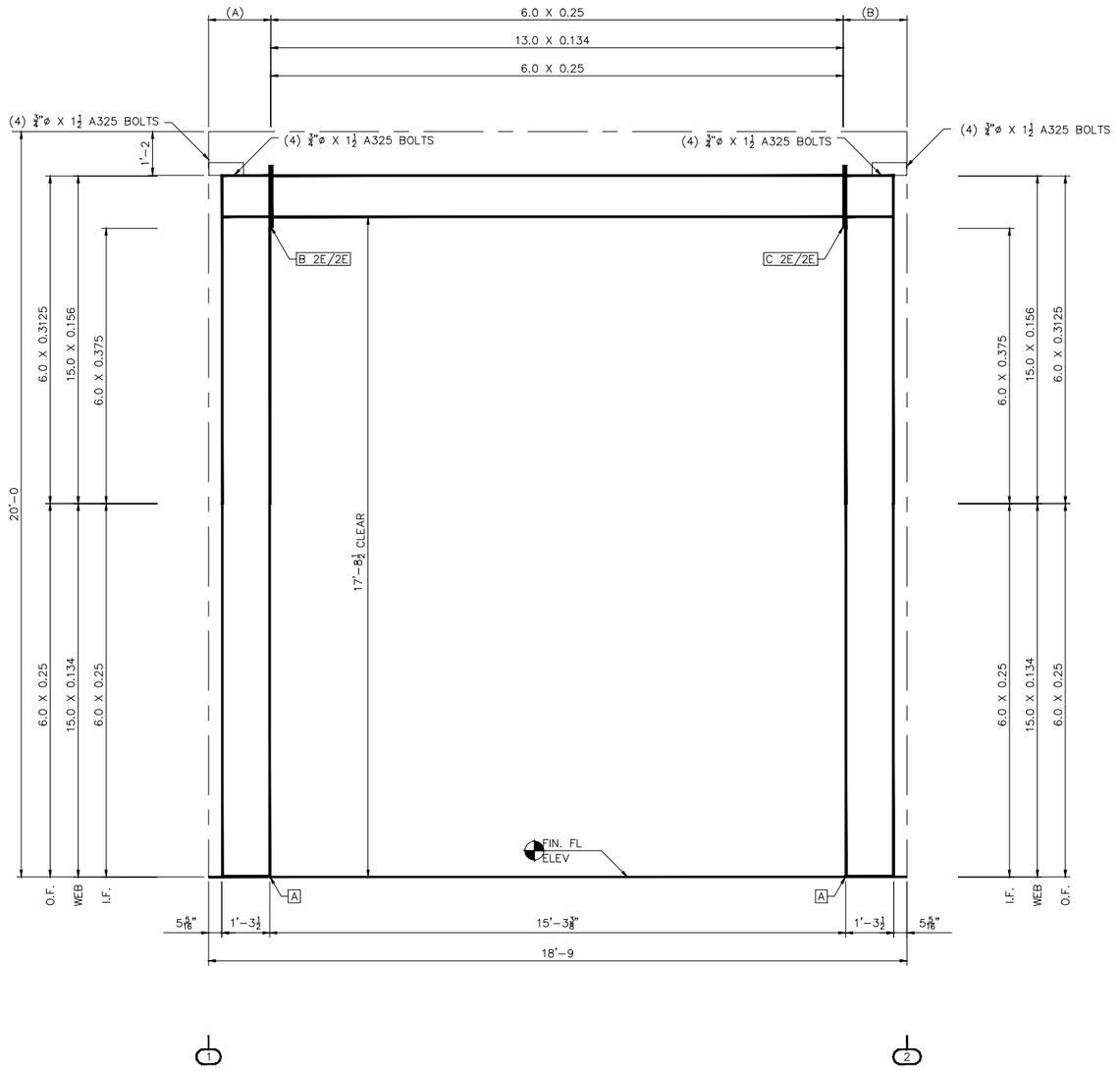
A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

GENERAL NOTES
FRAME CLEARANCES SHOWN ARE APPROXIMATE AND MAY VARY DUE TO CONDITIONS (DEFLECTION).

VERTICAL CLEARANCE DIMENSIONS ARE FROM FINISHED FLOOR REFERENCE ELEVATION.



CROSS SECTION AT PORTAL FRAME
AT GRID LINE "A"

PLATE SIZES
(A) 6.0 X 0.25
(B) 6.0 X 0.25

	PLATE SIZE TABLE		SPLICE BOLT TABLE			
CONN.	LOW SIDE	HIGH SIDE	QTY. SIZE	TYPE	HARDENED WASHERS	BEVELED WASHERS
A	6" X 0.375 X 1'-3½					
B	6" X 0.5 X 1'-8⅛	6" X 0.5 X 1'-7⅝	(8) ¾ X 2"	A325 B&N	0	0
C	6" X 0.5 X 1'-7⅝	6" X 0.5 X 1'-8⅛	(8) ¾ X 2"	A325 B&N	0	0

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E16 of 17

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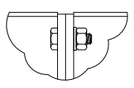
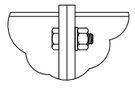
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

CONNECTION CODES
(FOR TOP AND BOTTOM BOLT PATTERN)


CONNECTION 1B, 1I OR 1P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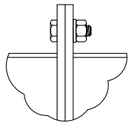
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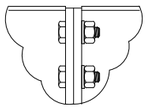
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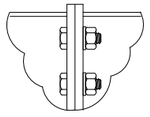
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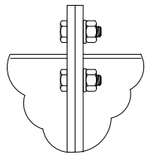
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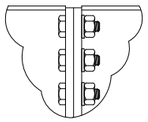
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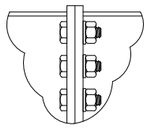
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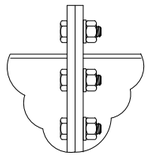
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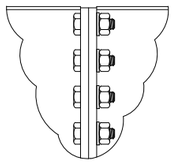
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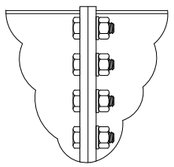
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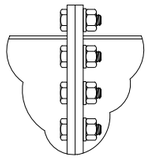
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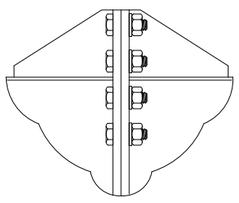

CONNECTION 4X

4 E /2 E H
- CONNECTION DESIGNATION
  - BLANK = STANDARD CONNECTION
  - H = HEAVY CONNECTION
- BOTTOM CONNECTION CODE
- BOTTOM QUANTITY OF BOLT ROWS
- CONNECTION DESIGNATION
  - BLANK = STANDARD CONNECTION
  - H = HEAVY CONNECTION
- TOP CONNECTION CODE
- TOP QUANTITY OF BOLT ROWS

CONNECTION CODE FORMAT

CONNECTION CODE DESCRIPTION

B = THIS DESCRIPTION CODE IS USED TO DEFINE SHEAR CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP FLANGE. CONNECTION PLATE LENGTH MUST BE A MINIMUM OF HALF THE RAFTER WEB DEPTH AND SHALL NOT EXCEED THE RAFTER TOTAL DEPTH.

E = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED WITH ONE SET OUTSIDE THE TOP OR BOTTOM FLANGE AND THE REMAINING SETS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE.

F = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE AND CONNECTION PLATE PROJECTS 1/2" BEYOND THE TOP OR BOTTOM FLANGE.

I = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP OR BOTTOM FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP OR BOTTOM FLANGE.

P = THIS DESCRIPTION CODE IS USED TO DEFINE SHEAR CONNECTIONS. BOLTS ARE LOCATED INSIDE THE TOP FLANGE AND CONNECTION PLATE IS RECESSED 1/8" BELOW THE TOP FLANGE. CONNECTION PLATE LENGTH MUST BE A MINIMUM OF HALF THE RAFTER WEB DEPTH AND SHALL NOT EXCEED THE RAFTER TOTAL DEPTH.

4X = THIS DESCRIPTION CODE IS USED TO DEFINE MOMENT CONNECTIONS. BOLTS ARE LOCATED WITH TWO SETS EACH SIDE OF THE TOP OR BOTTOM FLANGE WITH A GUSSET PLATE OUTSIDE THE TOP AND BOTTOM FLANGE OR COLUMN CAP PLATE.

CONNECTION BOLT DATA

NAME	DESCRIPTION FOR A325 BOLT DIMENSIONS		A325 CONNECTION BOLT DIMENSIONS					
D	DIAMETER OF THE BOLT		1/2"	3/4"	7/8"	1"	1 1/4"	1 1/2"
HD	BOLT HOLE DIAMETER		9/16"	13/16"	15/16"	1 1/16"	1 5/16"	1 9/16"
G	BOLT GAUGE		2 1/2"	3"	4"	3 1/2"	4"	5 1/2"
	MAX. WEB THICKNESS (Max. 5/16" Fillet Weld) WITHOUT WASHER		1"	1 1/8"	1 7/8"	1 1/4"	1 3/8"	2 1/8"
	MAX. WEB THICKNESS (Max. 5/16" Fillet Weld) WITH WASHER		3/4"	7/8"	1 5/8"	7/8"	7/8"	1 7/8"
HG	HEAVY CONN. BOLT GAUGE		N/A	2 1/4"	2 5/8"	3"	3 3/4"	4"
S	NORMAL BOLT SPACING		2 1/2"	3"	3 1/4"	3 1/2"	4"	4 1/2"
BSMIN	MINIMUM SPACING BETWEEN TOP & BOTTOM SETS OF BOLTS		1 1/2"	2 1/4"	2 5/8"	3"	3 3/4"	4"
BSMAX	MAXIMUM BOLT SPACING BETWEEN TOP AND BOTTOM SETS OF BOLTS ON CONNECTION PLATES LESS THAN OR EQUAL TO 3/4" THICK		2'–0"	2'–0"	2'–0"	2'–0"	2'–0"	2'–0"
	SPLICE BOLT SPACING (NOT TO EXCEED 2'–0)		1/2 BSMAX (±1/16") WHEN BSMAX = 2'–0 1/16" TO 4'–0 1/3 BSMAX (±1/16") WHEN BSMAX = 4'–0 1/16" TO 6'–0 1/4 BSMAX (±1/16") WHEN BSMAX = 6'–0 1/16" TO 8'–0					
BFCD	MINIMUM BOLT–TO–FLANGE CLEARANCE AT OUT OF NUT SEE BOLT AT FLANGE DETAIL		1 1/2"	1 3/4"	1 7/8"	2 1/4"	2 1/2"	2 3/4"
PF	MINIMUM BOLT–TO–FLANGE CLEARANCE AT CONNECTION PLATE SEE BOLT AT FLANGE DETAIL		(BFCD + RNWT) PF INSIDE OF FLANGE IS INCREASED BASED ON THE YT & YB VALUE. PF FOR CONNECTION B, F, I AND P ARE THE SAME AS USED ON CONNECTION E					
NWT	NUT AND WASHER THICKNESS		SEE BOLT AT FLANGE DETAIL. NUT THICKNESS IS EQUAL TO THE BOLT DIAMETER AND .15625" WASHER THICKNESS IS USED EVEN IF A WASHER IS NOT REQUIRED.					
RNWT	RISE ON NUT AND WASHER THICKNESS							
TT	THICKNESS TOP FLANGE		REFER TO FRAME CROSS SECTION DRAWING FOR LARGEST FLANGE THICKNESS EITHER SIDE OF THE CONNECTION.					
TB	THICKNESS BOTTOM FLANGE							
YT	BOLT SPACING TOP (ROUND UP TO NEXT 1/2", MIN = S)		3" + TT	3 1/2" + TT	3 3/4" + TT	4 1/2" + TT	5" + TT	5 1/2" + TT
YB	BOLT SPACING BOTTOM (ROUND UP TO NEXT 1/2", MIN = S)		or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped	or TB Sloped
EED(E)	MINIMUM END EDGE DIMENSION		1 1/4"	1 1/4"	1 1/2"	1 3/4"	2 1/4"	2 5/8"
EED(S)	MINIMUM SIDE EDGE DIMENSION		3/4"	1"	1 1/8"	1 1/4"	1 5/8"	2 1/4"
EEDK	END EDGE DIMENSION AT KNEE CONNECTION		1 3/8"	1 3/8"	1 5/8"	1 7/8"	2 3/8"	2 3/4"
BCWM	MINIMUM BOLT CLEARANCE FROM A FLANGE OR WEB WELD	WITHOUT WASHER	7/16"	5/8"	3/4"	13/16"	1"	1 3/8"
		WITH HARDENED WASHER	9/16"	3/4"	7/8"	1"	1 1/4"	1 1/2"
WCSM	MINIMUM WIDTH OF CONNECTION PLATE (Standard Connection)		5"	6"	8"	8"	10"	12"
WCHM	MINIMUM WIDTH OF CONNECTION PLATE (Heavy Connection)		N/A	10"	12"	12"	16"	18"
TCMIN	MINIMUM THICKNESS OF CONNECTION PLATE		1/4"	3/8"	7/16"	1/2"	5/8"	1"

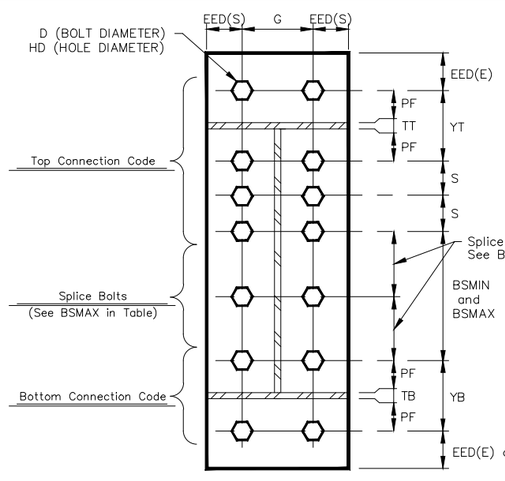
Frame Documentation
A325 Connection Bolt Details

Page 05-12-10
Date Jun '18 Rev 04

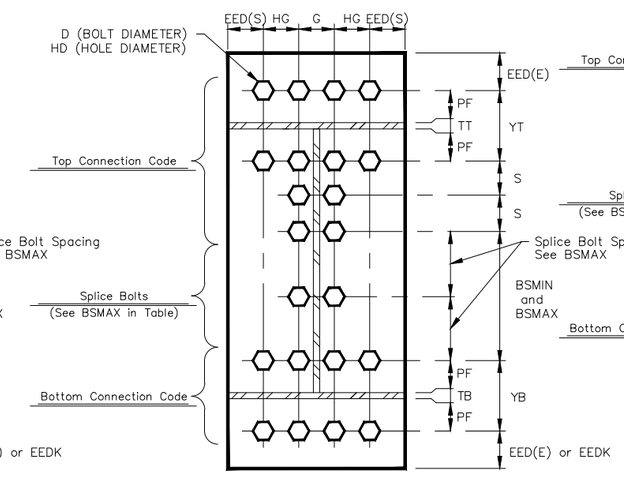
B 4E/2EH
- Connection Code (See "Connection Code Format" on this drawing)
- Connection Location

CROSS SECTION CONNECTION CODE KEY
(AS SHOWN AT CONNECTIONS ON FRAME CROSS SECTION DRAWINGS)

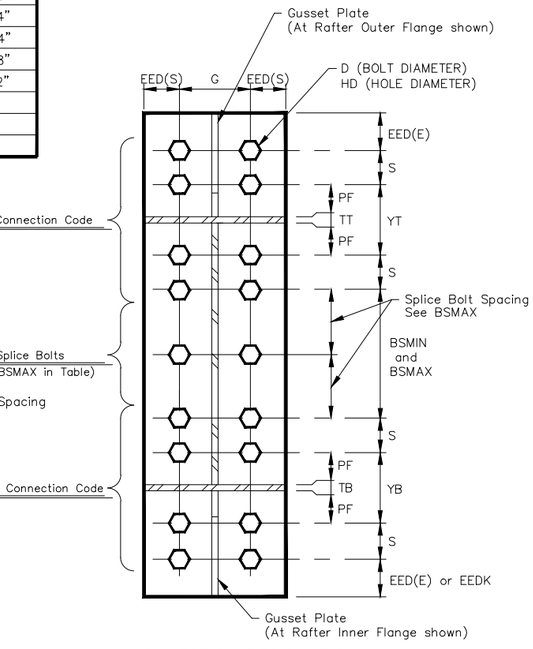
Flange Brace Material Schedule	
Part Mark	Material
FB4_	L 2" x 2" x 14 Ga.
FB5_	L 2" x 2" x 14 Ga.
FB6_	L 2" x 2" x 1/8"
FB7_	L 2 1/2" x 2 1/2" x 3/16"



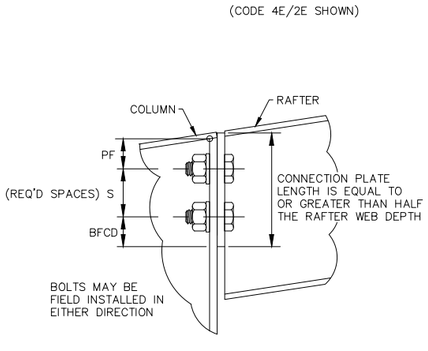
STANDARD CONNECTION DESIGNATION
(CODE 4E/2E SHOWN)



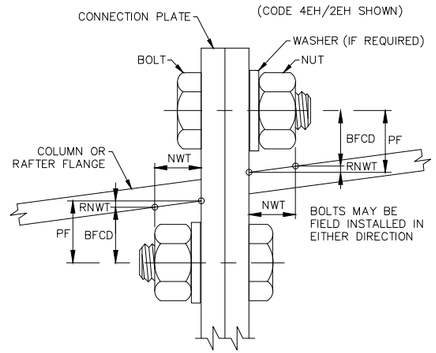
HEAVY CONNECTION DESIGNATION
(CODE 4EH/2EH SHOWN)



4X CONNECTION DESIGNATION
(CODE 4X/4X SHOWN)



CONNECTION B & P
(Low Side Shown, High Side Similar)



BOLT AT FLANGE DETAIL
(Top Flange Shown, Bottom Flange Similar)

Revision	Date	Description	By	Ck'd
A	03/01/21	FOR CONSTRUCTION PERMIT	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Customer: METALPRO BUILDINGS 1062 MARIGOLD ST LONDON, ON N5X-4N9 CA
Project Name & Location: ALLEN ROBERTS 5949 OTTAWA STREET OTTAWA , ON K0A 2Z0 CA
Drawing Status: ☐ Preliminary (Not For Construction) ☐ For Approval (Not For Construction) ☒ For Construction Permit ☐ For Erector Installation

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	E17 of 17

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A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

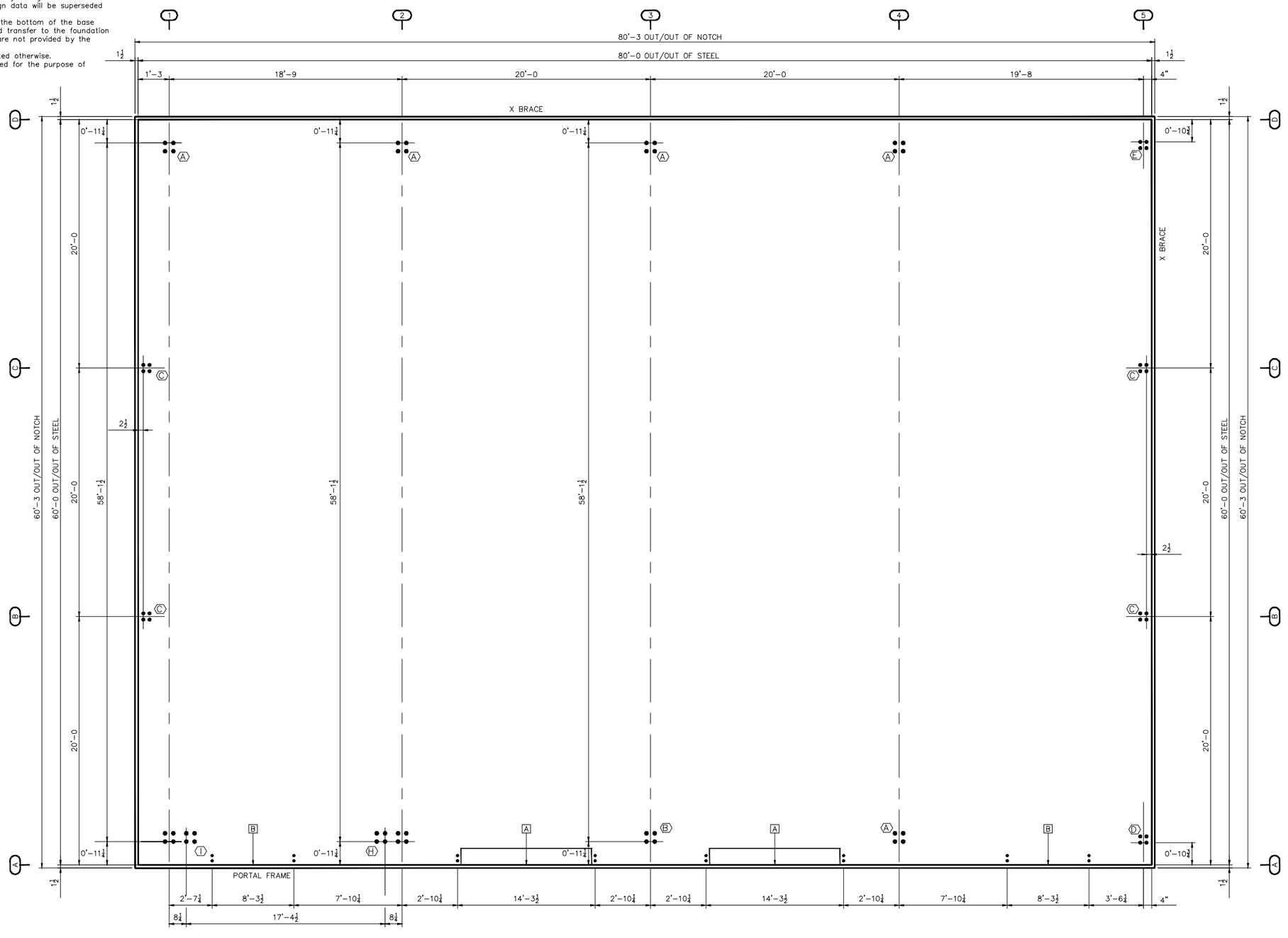
Drawing has been digitally signed.

LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

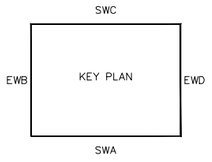
Anchor Rod Drawings

1) This drawing is for anchor rod placement only and is not foundation design.
2) Foundation must be square and level with all anchor rods true in size, location, and projection.
3) Projection shown must be held to keep threads clear of finished concrete.
4) This structural design data includes magnitude and location of design loads and support conditions, material properties, and type and size of major structural members necessary to show compliance with the Order Documents at the time of this issue. Any change to building loads or dimensions may change structural member sizes and locations shown. This structural design data will be superseded and voided by any future mailing.
5) Anchor rod size is determined by shear and tension at the bottom of the base plate. The length of the anchor rod and method of load transfer to the foundation are to be determined by the foundation engineer, and are not provided by the manufacturer.
6) Anchor rods are ASTM F1554 Gr. 36 material unless noted otherwise.
7) 3000 psi concrete compressive strength (f'c) is assumed for the purpose of column base plate design unless otherwise noted.

FINISH FLOOR AT ELEVATION 100'-0



ANCHOR ROD SETTING PLAN



ANCHOR BOLTS TO BE DESIGNED BY FOUNDATION ENGINEER USING DIAMETERS SHOWN IN THIS TABLE.

ANCHOR ROD DESCRIPTION	QUANTITY
⅞ "ø DIAMETER X	40
1½ "ø DIAMETER X	40

ACCESSORY SCHEDULE

MARK	DESCRIPTION	DETAIL	QUAN.
A	14'-0 X 14'-0 FRAMED OPENINGS	G	2
B	8'-0 X 5'-0 FRAMED OPENINGS	F	2

Revision	Date	Description	By	Ck'd
0	03/01/21	FOR ERECTOR INSTALLATION	SRA	DLS

Robertson Building Systems

1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
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5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARIGOLD ST
LONDON, ON N5X-4N9 CA

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☐ For Construction Permit
☒ For Erector Installation

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: F1 of 4

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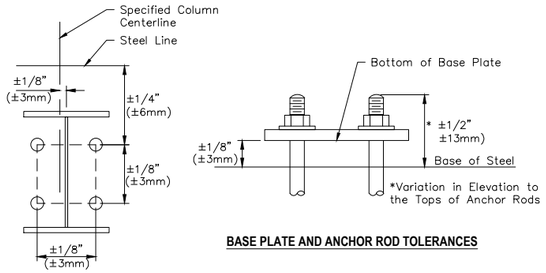
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

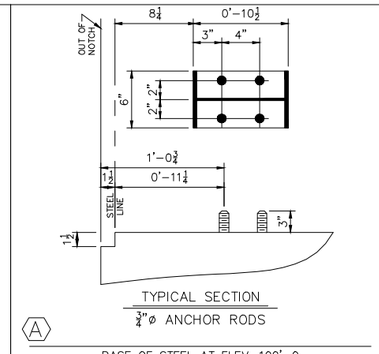
LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

AISC CODE OF STANDARD PRACTICE TOLERANCES FOR SETTING ANCHOR RODS

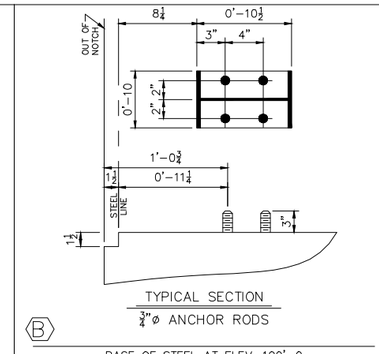


ANCHOR ROD SETTING TOLERANCES

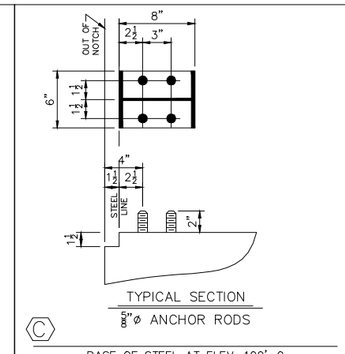
BASE PLATE AND ANCHOR ROD TOLERANCES



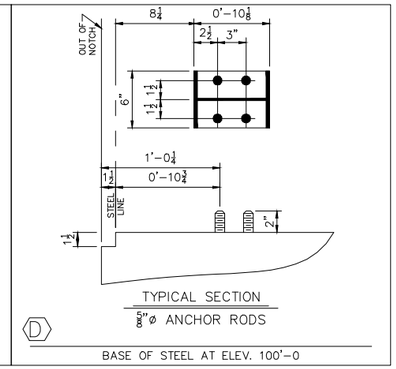
(A) BASE OF STEEL AT ELEV. 100'–0



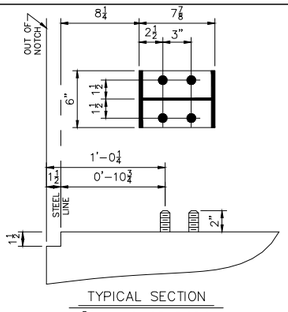
(B) BASE OF STEEL AT ELEV. 100'–0



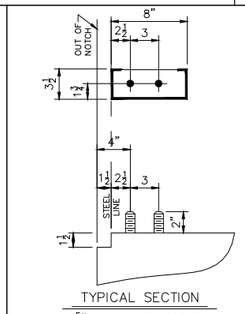
(C) BASE OF STEEL AT ELEV. 100'–0



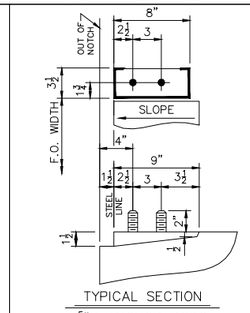
(D) BASE OF STEEL AT ELEV. 100'–0



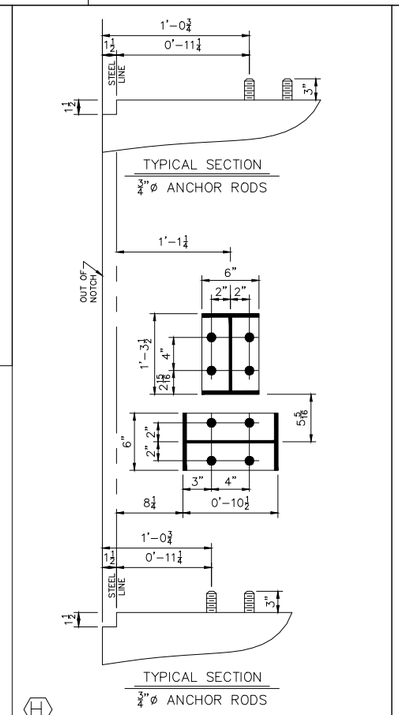
(E) BASE OF STEEL AT ELEV. 100'–0



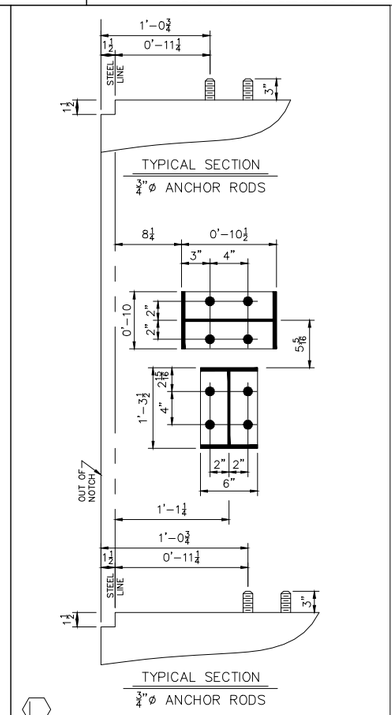
(F) BASE OF STEEL AT ELEV. 100'–0



(G) BASE OF STEEL AT ELEV. 100'–0



(H) BASE OF STEEL AT ELEV. 100'–0



(I) BASE OF STEEL AT ELEV. 100'–0

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0	03/01/21	FOR ERECTOR INSTALLATION	SRA	DLS

1343 SANDHILL DRIVE
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Drawing Status:

Scale:	NOT TO SCALE
Drawn by:	SRA 3/1/21
Checked by:	DLS 3/1/21
Project Engineer:	EJA
Job Number:	17-B-93413
Sheet Number:	F2 of 4

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ONTARIO P.ENG 100041568

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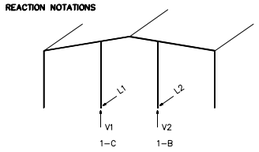
FRAME DESCRIPTION: Endwall EWB
USER NAME: EJAlvarado JOB NAME: 93413A DATE: 2/ 5/21 FILE: REWBLDG1 PAGE: EW-1
PATH: R:\Jobs\Active\Eng\17-B-93413\ver01-ejalvarado\BLDG-A\run01\

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft. TIME: 08: 52: 50

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

COLUMN	1–C			1–B		
LOAD GROUP	H1	V1	L1	H2	V2	L2
D	0.	0.3	0.	0.	0.3	0.
W+	0.	0.	4.0	0.	0.	4.0
W–	0.	0.	–3.8	0.	0.	–3.8
E+	0.	0.	0.1	0.	0.	0.1
E–	0.	0.	–0.1	0.	0.	–0.1

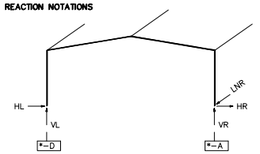
LOAD GROUP DESCRIPTION

D : DEAD LOAD
W+ : WIND LOAD AS AN INWARD ACTING PRESSURE
W– : WIND LOAD AS AN OUTWARD ACTING SUCTION
E+ : EARTHQUAKE FORCE ACTING INWARD
E– : EARTHQUAKE FORCE ACTING OUTWARD

FRAME ID #1 cs 60./20./20. 21./8.563/50
USER NAME: EJAlvarado JOB NAME: 93413A DATE: 2/ 8/21 FILE: frame_1.fra PAGE: 1–3

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines:
NOTES: (1) All reactions are in kips and kip–ft. TIME: 08: 55: 57
(2) Primary wind load cases are not concurrent.
(3) X–bracing reactions (RBPULW and RBUPEQ) are combined withLWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 1

COLUMN	*–D			*–A		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	1.2	2.8	0.0	–1.2	3.0	0.0
COLL	0.2	0.3	0.0	–0.2	0.3	0.0
PAR1	7.3	22.1	0.0	–7.3	7.0	0.0
PAR2	7.3	7.0	0.0	–7.3	22.1	0.0
SNOW	14.6	29.1	0.0	–14.6	29.1	0.0
LL	6.3	12.6	0.0	–6.3	12.6	0.0
EQ	–1.7	–1.0	0.0	–1.7	1.0	0.0
WL1	–5.8	–7.9	0.0	0.6	–4.4	0.0
WL2	–6.2	–10.8	0.0	1.0	–7.3	0.0
WL3	–5.2	–3.6	0.0	0.0	–0.1	0.0
LWL1	–1.1	–6.8	0.0	1.8	–5.2	–2.1
LWL2	–1.5	–9.7	0.0	2.2	–8.1	–2.1
LWL3	–0.5	–2.5	0.0	1.2	–0.9	2.1
LWL4	–1.8	–5.2	0.0	1.1	–6.8	2.1
LWL5	–2.2	–8.1	0.0	1.5	–9.6	0.0
LWL6	–1.2	–0.9	0.0	0.5	–2.4	0.0
WL4	–0.7	–4.5	0.0	5.9	–7.9	0.0
WL5	–1.0	–7.3	0.0	6.2	–10.7	0.0
WL6	–0.1	–0.1	0.0	5.3	–3.5	0.0

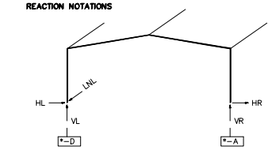
LOAD GROUP DESCRIPTION

DL : Roof Dead Load
COLL : Roof Collateral Load
PAR1 : Partial Load [PARxx]
PAR2 : Partial Load [PARxx]
SNOW : Roof Snow Load
LL : Roof Live Load
EQ : Lateral Seismic Load [parallel to plane of frame]
WL1 : Wind from Left to Right without CpiCgi
WL2 : Wind from Left to Right with CpiCgi
WL3 : Wind from Left to Right with –CpiCgi
LWL1 : Wind from Back to Front without CpiCgi
LWL2 : Wind from Back to Front with CpiCgi
LWL3 : Wind from Back to Front with –CpiCgi
LWL4 : Wind from Front to Back without CpiCgi
LWL5 : Wind from Front to Back with CpiCgi
LWL6 : Wind from Front to Back with –CpiCgi
WL4 : Wind from Right to Left without CpiCgi
WL5 : Wind from Right to Left with CpiCgi
WL6 : Wind from Right to Left with –CpiCgi

FRAME ID #3 cs 60./20./20. 21./8.563/50
USER NAME: EJAlvarado JOB NAME: 93413A DATE: 2/ 8/21 FILE: frame_3.fra PAGE: 1–3

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 3
NOTES: (1) All reactions are in kips and kip–ft. TIME: 08: 58: 37
(2) Primary wind load cases are not concurrent.
(3) X–bracing reactions (RBPULW and RBUPEQ) are combined withLWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 3

COLUMN	*–D			*–A		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	1.1	2.8	0.0	–1.1	3.0	0.0
COLL	0.1	0.3	0.0	–0.1	0.3	0.0
PAR1	7.1	22.1	0.0	–7.1	7.0	0.0
PAR2	7.1	7.0	0.0	–7.1	22.1	0.0
SNOW	14.2	29.1	0.0	–14.2	29.1	0.0
LL	6.1	12.6	0.0	–6.1	12.6	0.0
RBUPEQ	0.0	–6.5	–6.4	–0.0	0.0	0.0
RBDWEQ	–0.0	6.5	0.0	0.0	–0.0	0.0
EQ	–1.7	–1.1	0.0	–1.7	1.1	0.0
WL1	–4.6	–6.3	0.0	0.4	–3.6	0.0
WL2	–4.9	–9.1	0.0	0.8	–6.5	0.0
WL3	–4.0	–1.9	0.0	–0.1	0.7	0.0
WL4	–0.5	–3.6	0.0	4.6	–6.2	0.0
WL5	–0.8	–6.5	0.0	5.0	–9.1	0.0
WL6	0.1	0.7	0.0	4.1	–1.9	0.0
LWL1	–0.6	–5.4	0.0	1.1	–4.2	0.0
RBUPLW	0.0	–3.8	–3.8	–0.0	0.0	0.0
LWL2	–1.0	–8.3	0.0	1.5	–7.1	0.0
LWL3	–0.1	–1.1	0.0	0.6	0.1	0.0
LWL4	–1.1	–4.2	0.0	0.6	–5.4	0.0

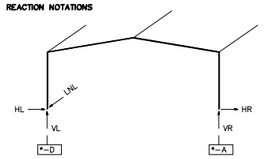
LOAD GROUP DESCRIPTION

DL : Roof Dead Load
COLL : Roof Collateral Load
PAR1 : Partial Load [PARxx]
PAR2 : Partial Load [PARxx]
SNOW : Roof Snow Load
LL : Roof Live Load
RBUPEQ : Upward Acting Rod Brace Load from Long. Seismic
RBDWEQ : Downward Acting Rod Brace Load from Long. Seismic
EQ : Lateral Seismic Load [parallel to plane of frame]
WL1 : Wind from Left to Right without CpiCgi
WL2 : Wind from Left to Right with CpiCgi
WL3 : Wind from Left to Right with –CpiCgi
WL4 : Wind from Right to Left without CpiCgi
WL5 : Wind from Right to Left with CpiCgi
WL6 : Wind from Right to Left with –CpiCgi
LWL1 : Wind from Back to Front without CpiCgi
RBUPLW : Upward Acting Rod Brace Load from Long. Wind
LWL2 : Wind from Back to Front with CpiCgi
LWL3 : Wind from Back to Front with –CpiCgi
LWL4 : Wind from Front to Back without CpiCgi

FRAME ID #3 cs 60./20./20. 21./8.563/50
USER NAME: EJAlvarado JOB NAME: 93413A DATE: 2/ 8/21 FILE: frame_3.fra PAGE: 3–4

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 3
NOTES: (1) All reactions are in kips and kip–ft. TIME: 08: 58: 37
(2) Primary wind load cases are not concurrent.
(3) X–bracing reactions (RBPULW and RBUPEQ) are combined withLWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 3

COLUMN	*–D			*–A		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
LWL5	–1.5	–7.1	0.0	1.0	–8.2	0.0
LWL6	–0.5	0.1	0.0	0.1	–1.1	0.0
RBDWLW	–0.0	3.8	0.0	0.0	–0.0	0.0

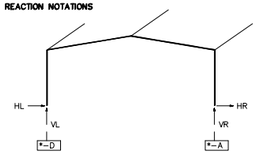
LOAD GROUP DESCRIPTION

LWL5 : Wind from Front to Back with CpiCgi
LWL6 : Wind from Front to Back with –CpiCgi
RBDWLW : Downward Acting Rod Brace Load from Long. Wind

FRAME ID #2 cs 60./20./19.833 21./8.563
USER NAME: EJAlvarado JOB NAME: 93413A DATE: 2/ 8/21 FILE: frames_2_4.fra PAGE: 2–3

SUPPORT REACTIONS FOR EACH LOAD GROUP
*LOCATION: Gridlines: 2 4
NOTES: (1) All reactions are in kips and kip–ft. TIME: 08: 57: 27
(2) Primary wind load cases are not concurrent.
(3) X–bracing reactions (RBPULW and RBUPEQ) are combined withLWL and LEQ groups only.

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = 2 4

COLUMN	*–D			*–A		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	1.1	2.7	0.0	–1.1	2.7	0.0
COLL	0.1	0.3	0.0	–0.1	0.3	0.0
PAR1	7.1	21.9	0.0	–7.1	6.9	0.0
PAR2	7.1	6.9	0.0	–7.1	21.9	0.0
SNOW	14.2	28.9	0.0	–14.2	28.9	0.0
LL	6.2	12.5	0.0	–6.2	12.5	0.0
EQ	–1.7	–1.0	0.0	–1.7	1.0	0.0
WL1	–5.7	–7.8	0.0	0.6	–4.4	0.0
WL2	–6.1	–10.7	0.0	0.9	–7.3	0.0
WL3	–5.2	–3.5	0.0	0.0	–0.1	0.0
LWL1	–1.1	–6.7	0.0	1.7	–5.2	0.0
LWL2	–1.4	–9.6	0.0	2.1	–8.0	0.0
LWL3	–0.5	–2.4	0.0	1.2	–0.9	0.0
LWL4	–1.7	–5.2	0.0	1.1	–6.7	0.0
LWL5	–2.1	–8.0	0.0	1.4	–9.6	0.0
LWL6	–1.2	–0.9	0.0	0.5	–2.4	0.0
WL4	–0.6	–4.4	0.0	5.7	–7.8	0.0
WL5	–0.9	–7.3	0.0	6.1	–10.7	0.0
WL6	–0.0	–0.1	0.0	5.2	–3.5	0.0

LOAD GROUP DESCRIPTION

DL : Roof Dead Load
COLL : Roof Collateral Load
PAR1 : Partial Load [PARxx]
PAR2 : Partial Load [PARxx]
SNOW : Roof Snow Load
LL : Roof Live Load
EQ : Lateral Seismic Load [parallel to plane of frame]
WL1 : Wind from Left to Right without CpiCgi
WL2 : Wind from Left to Right with CpiCgi
WL3 : Wind from Left to Right with –CpiCgi
LWL1 : Wind from Back to Front without CpiCgi
LWL2 : Wind from Back to Front with CpiCgi
LWL3 : Wind from Back to Front with –CpiCgi
LWL4 : Wind from Front to Back without CpiCgi
LWL5 : Wind from Front to Back with CpiCgi
LWL6 : Wind from Front to Back with –CpiCgi
WL4 : Wind from Right to Left without CpiCgi
WL5 : Wind from Right to Left with CpiCgi
WL6 : Wind from Right to Left with –CpiCgi

NOTES

1) THE REACTIONS PROVIDED ARE BASED ON THE ORDER DOCUMENTS AT THE TIME OF MAILING. ANY CHANGES TO BUILDING LOADS OR DIMENSIONS MAY CHANGE THE REACTIONS. THE REACTIONS WILL BE SUPERSEDED AND VOIDED BY ANY FUTURE MAILING.
2) THE REACTIONS PROVIDED HAVE BEEN CREATED WITH THE FOLLOWING LAYOUT (UNLESS NOTED OTHERWISE).
a) A REACTION TABLE IS PROVIDED WITH THE REACTIONS FOR EACH LOAD GROUP.
b) RIGID FRAMES – TRANSVERSE AND LONGITUDINAL
(1) FOR CANADA BUILDING CODE (NBCC), INDIVIDUAL TRANSVERSE SEISMIC LOADS FOR MOMENT FRAMES (EQ) ARE NOT MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(2) FOR CANADA BUILDING CODE (NBCC), WHEN PORTAL FRAMES ARE PRESENT IN THE SIDEWALL, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (LEQ) ARE NOT MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
c) ENDWALLS – SEISMIC BASE SHEAR FROM WALL MASS
(1) FOR CANADA BUILDING CODE (NBCC), INDIVIDUAL LONGITUDINAL SEISMIC LOADS (E+ & E–), AND INDIVIDUAL TRANSVERSE SEISMIC LOADS (EL & ER) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
d) X–BRACING – REACTIONS TO COLUMNS FROM WALL BRACING
(1) X– BRACING REACTIONS ARE INCLUDED IN VALUES SHOWN IN THE REACTION TABLES.
(2) FOR CANADA BUILDING CODE (NBCC), WHEN X–BRACING IS PRESENT IN THE SIDEWALL, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (RBUPEQ & RBDWEQ) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(3) FOR CANADA BUILDING CODE (NBCC), WHEN X–BRACING IS PRESENT IN THE ENDWALL, INDIVIDUAL TRANSVERSE SEISMIC LOADS (EL & ER) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(4) FOR CANADA BUILDING CODE (NBCC), WHEN X–BRACING IS PRESENT AT THE ENDWALL CORNER COLUMNS, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (E+ & E–) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d, WHEN SPECIFIED SHORT–PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
e) THE METAL BUILDING MANUFACTURER IS RESPONSIBLE ONLY FOR THE PORTION OF THE ANCHOR ROD DESIGN PERTAINING TO THE TRANSFER OF FORCES BETWEEN THE BASE PLATE BEARING AND THE ANCHOR ROD'S SHEAR AND TENSION. THE METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE ANCHOR ROD EMBEDMENT FOR TRANSFER OF FORCES TO THE FOUNDATION. THE METAL BUILDING MANUFACTURER DOES NOT DESIGN AND IS NOT RESPONSIBLE FOR THE DESIGN, MATERIAL, AND CONSTRUCTION OF THE FOUNDATION EMBEDMENTS. THE END USE CUSTOMER SHALL ASSURE THAT ADEQUATE PROVISIONS ARE MADE TO THE FOUNDATION DESIGN FOR LOADS IMPOSED BY COLUMN REACTIONS OF THE BUILDING, OTHER IMPOSED LOADS, AND BEARING CAPACITY OF THE SOIL AND OTHER CONDITIONS OF THE BUILDING SITE. IT IS RECOMMENDED THAT THE ANCHORAGE AND FOUNDATION OF THE BUILDING BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER COMPETENT IN THE DESIGN OF SUCH STRUCTURES.
i) (REF. APPENDIX A3 OF THE MBMA METAL BUILDING SYSTEMS MANUAL)
f) ANCHOR RODS ARE ASTM F1554 GR. 36 MATERIAL UNLESS NOTED OTHERWISE ON THE ANCHOR ROD LAYOUT DRAWING.
3) REACTIONS ARE PROVIDED AS UN–FACTORED FOR EACH LOAD GROUP APPLIED TO THE COLUMN – WITH THE EXCEPTION OF THE R_d SEISMIC FACTOR. REFER TO THE ENDWALLS AND X–BRACING NOTES ABOVE.
a) THE FACTORS APPLIED TO LOAD GROUPS FOR THE STEEL COLUMN DESIGN MAY BE DIFFERENT THAN THE FACTORS USED IN THE FOUNDATION DESIGN. THE FOUNDATION ENGINEER SHALL APPLY THE APPROPRIATE LOAD FACTORS AND COMBINE THE REACTIONS IN ACCORDANCE WITH THE BUILDING CODE AND DESIGN SPECIFICATIONS FOR PROPER FOUNDATION DESIGN.
THE MANUFACTURER DOES NOT PROVIDE "MAXIMUM" LOAD COMBINATION REACTIONS. HOWEVER, THE INDIVIDUAL LOAD REACTIONS PROVIDED MAY BE USED BY THE FOUNDATION ENGINEER TO DETERMINE THE APPLICABLE LOAD COMBINATIONS FOR HIS/HER DESIGN PROCEDURES AND ALLOW FOR AN ECONOMICAL FOUNDATION DESIGN.

Revision	Date	Description	By	Ck'd
0	03/01/21	FOR ERECTOR INSTALLATION	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905–304–1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

Customer:
METALPRO BUILDINGS
1062 MARGOLD ST
LONDON, ON N5X–4N9 CA

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

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: F3 of 4

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.

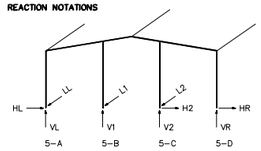
LICENSED PROFESSIONAL ENGINEER
A. Szilveszter
100041568
Mar 01, 2021
PROVINCE OF ONTARIO

FRAME DESCRIPTION: Endwall EWD
USER NAME: EJAlvara JOB NAME: 93413A
DATE: 2/ 5/21 FILE: REW4BLDG1
PAGE: EW-2

PATH: R:\Jobs\Active\Eng\17-B-93413\ver02-ejalvarado\BLDG-A\run01\

SUPPORT REACTIONS FOR EACH LOAD GROUP
NOTE: All reactions are in kips and kip-ft.
TIME: 08:44:47

REACTION NOTATIONS



LOAD GROUP REACTION TABLE

COLUMN	5-A			5-B			5-C			5-D		
LOAD GROUP	HL	VL	LL	H1	V1	L1	H2	V2	L2	HR	VR	LR
D	0.0	0.7	0.	0.	1.1	0.	0.	1.1	0.	0.0	0.6	0.
C	0.0	0.0	0.	0.	0.1	0.	0.	0.1	0.	0.0	0.0	0.
L	0.0	1.8	0.	0.	4.6	0.	0.	4.6	0.	0.0	1.8	0.
S	0.1	4.2	0.	0.	10.6	0.	0.	10.6	0.	−0.1	4.2	0.
W+	−0.1	−2.3	1.6	0.	−5.2	4.0	0.	−5.2	4.0	0.0	−2.3	0.
W−	−0.1	−2.3	−1.6	0.	−5.2	−3.8	0.	−5.2	−3.8	0.0	−2.3	0.
WR	−0.1	−2.3	0.	0.	−5.2	0.	0.	−3.6	0.	1.4	−3.9	0.
WL	−0.1	−2.3	0.	0.	−5.2	0.	−1.4	−6.6	0.	0.0	−0.9	0.
E+	0.	0.	0.0	0.	0.	0.1	0.	0.	0.1	0.	0.	0.
E−	0.	0.	0.0	0.	0.	−0.1	0.	0.	−0.1	0.	0.	0.
ER	0.	0.	0.	0.	0.	0.	0.	1.7	0.	1.5	−1.7	0.
EL	0.	0.	0.	0.	0.	0.	−1.5	−1.5	0.	0.	1.5	0.

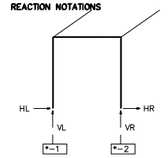
LOAD GROUP DESCRIPTION

D : DEAD LOAD
C : COLLATERAL LOAD
L : LIVE LOAD
S : DESIGN SNOW LOAD
W+ : WIND LOAD AS AN INWARD ACTING PRESSURE
W− : WIND LOAD AS AN OUTWARD ACTING SUCTION
WR : WIND FORCE FROM THE RIGHT
WL : WIND FORCE FROM THE LEFT
E+ : EARTHQUAKE FORCE ACTING INWARD
E− : EARTHQUAKE FORCE ACTING OUTWARD
ER : EARTHQUAKE FORCE FROM RIGHT
EL : EARTHQUAKE FORCE FROM LEFT

FRAME ID #6
pf 18.75/20. main building at
USER NAME: EJAlvarado JOB NAME: 93413A
DATE: 2/ 5/21 FILE: pframe_a.fra
PAGE: 6-2

SUPPORT REACTIONS FOR EACH LOAD GROUP
LOCATION: bays 1-(Gridline A)
NOTES: (1) All reactions are in kips and kip-ft.
(2) Primary wind load cases are not concurrent.
(3) X-bracing reactions (RBPULW and RBUPEQ) are combined withLWL and LEQ groups only.
TIME: 10:10:45

REACTION NOTATIONS



LOAD GROUP REACTION TABLE GRIDLINES * = A

COLUMN	*-1			*-2		
LOAD GROUP	HL	VL	LNL	HR	VR	LNR
DL	0.0	0.5	0.0	−0.0	0.5	0.0
LEQ	−3.2	−7.4	0.0	−3.4	7.4	0.0
LWL1	−1.8	−4.2	0.0	−1.9	4.2	0.0
LWL2	1.9	4.2	0.0	1.8	−4.2	0.0

LOAD GROUP DESCRIPTION

DL : Roof Dead Load
LEQ : Longitudinal Seismic Load
LWL1 : Wind from Left to Right
LWL2 : Wind from Right to Left

NOTES

1) THE REACTIONS PROVIDED ARE BASED ON THE ORDER DOCUMENTS AT THE TIME OF MAILING. ANY CHANGES TO BUILDING LOADS OR DIMENSIONS MAY CHANGE THE REACTIONS. THE REACTIONS WILL BE SUPERSEDED AND VOIDED BY ANY FUTURE MAILING.
2) THE REACTIONS PROVIDED HAVE BEEN CREATED WITH THE FOLLOWING LAYOUT (UNLESS NOTED OTHERWISE).
a) A REACTION TABLE IS PROVIDED WITH THE REACTIONS FOR EACH LOAD GROUP.
b) RIGID FRAMES – TRANSVERSE AND LONGITUDINAL
(1) FOR CANADA BUILDING CODE (NBCC), INDIVIDUAL TRANSVERSE SEISMIC LOADS FOR MOMENT FRAMES (EQ) ARE NOT MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(2) FOR CANADA BUILDING CODE (NBCC), WHEN PORTAL FRAMES ARE PRESENT IN THE SIDEWALL, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (LEQ) ARE NOT MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
c) ENDWALLS – SEISMIC BASE SHEAR FROM WALL MASS
(1) FOR CANADA BUILDING CODE (NBCC), INDIVIDUAL LONGITUDINAL SEISMIC LOADS (E+ & E−), AND INDIVIDUAL TRANSVERSE SEISMIC LOADS (EL & ER) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
d) X-BRACING – REACTIONS TO COLUMNS FROM WALL BRACING
(1) X- BRACING REACTIONS ARE INCLUDED IN VALUES SHOWN IN THE REACTION TABLES.
(2) FOR CANADA BUILDING CODE (NBCC), WHEN X-BRACING IS PRESENT IN THE SIDEWALL, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (RBUPEQ & RBDWEQ) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(3) FOR CANADA BUILDING CODE (NBCC), WHEN X-BRACING IS PRESENT IN THE ENDWALL, INDIVIDUAL TRANSVERSE SEISMIC LOADS (EL & ER) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
(4) FOR CANADA BUILDING CODE (NBCC), WHEN X-BRACING IS PRESENT AT THE ENDWALL CORNER COLUMNS, INDIVIDUAL LONGITUDINAL SEISMIC LOADS (E+ & E−) ARE MULTIPLIED BY FORCE REDUCTION FACTOR, R_d WHEN SPECIFIED SHORT-PERIOD SPECTRAL ACCELERATION RATIO $\{I_E F_a S_a(0.2)\}$ IS GREATER THAN 0.45.
e) THE METAL BUILDING MANUFACTURER IS RESPONSIBLE ONLY FOR THE PORTION OF THE ANCHOR ROD DESIGN PERTAINING TO THE TRANSFER OF FORCES BETWEEN THE BASE PLATE BEARING AND THE ANCHOR ROD'S SHEAR AND TENSION. THE METAL BUILDING MANUFACTURER IS NOT RESPONSIBLE FOR THE ANCHOR ROD EMBEDMENT FOR TRANSFER OF FORCES TO THE FOUNDATION. THE METAL BUILDING MANUFACTURER DOES NOT DESIGN AND IS NOT RESPONSIBLE FOR THE DESIGN, MATERIAL, AND CONSTRUCTION OF THE FOUNDATION EMBEDMENTS. THE END USE CUSTOMER SHALL ASSURE THAT ADEQUATE PROVISIONS ARE MADE TO THE FOUNDATION DESIGN FOR LOADS IMPOSED BY COLUMN REACTIONS OF THE BUILDING, OTHER IMPOSED LOADS, AND BEARING CAPACITY OF THE SOIL AND OTHER CONDITIONS OF THE BUILDING SITE. IT IS RECOMMENDED THAT THE ANCHORAGE AND FOUNDATION OF THE BUILDING BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER COMPETENT IN THE DESIGN OF SUCH STRUCTURES.
i) (REF. APPENDIX A3 OF THE MBMA METAL BUILDING SYSTEMS MANUAL)
f) ANCHOR RODS ARE ASTM F1554 GR. 36 MATERIAL UNLESS NOTED OTHERWISE ON THE ANCHOR ROD LAYOUT DRAWING.
3) REACTIONS ARE PROVIDED AS UN-FACTORED FOR EACH LOAD GROUP APPLIED TO THE COLUMN – WITH THE EXCEPTION OF THE R_d SEISMIC FACTOR. REFER TO THE ENDWALLS AND X-BRACING NOTES ABOVE:
a) THE FACTORS APPLIED TO LOAD GROUPS FOR THE STEEL COLUMN DESIGN MAY BE DIFFERENT THAN THE FACTORS USED IN THE FOUNDATION DESIGN. THE FOUNDATION ENGINEER SHALL APPLY THE APPROPRIATE LOAD FACTORS AND COMBINE THE REACTIONS IN ACCORDANCE WITH THE BUILDING CODE AND DESIGN SPECIFICATIONS FOR PROPER FOUNDATION DESIGN.
THE MANUFACTURER DOES NOT PROVIDE "MAXIMUM" LOAD COMBINATION REACTIONS. HOWEVER, THE INDIVIDUAL LOAD REACTIONS PROVIDED MAY BE USED BY THE FOUNDATION ENGINEER TO DETERMINE THE APPLICABLE LOAD COMBINATIONS FOR HIS/HER DESIGN PROCEDURES AND ALLOW FOR AN ECONOMICAL FOUNDATION DESIGN.

Revision	Date	Description	By	Ck'd
0	03/01/21	FOR ERECTOR INSTALLATION	SRA	DLS

Robertson Building Systems
1343 SANDHILL DRIVE
ANCASTER, ONTARIO L9G 4V5
905-304-1111

Project Name & Location:
ALLEN ROBERTS
5949 OTTAWA STREET
OTTAWA , ON K0A 2Z0 CA

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

Scale: NOT TO SCALE
Drawn by: SRA 3/1/21
Checked by: DLS 3/1/21
Project Engineer: EJA
Job Number: 17-B-93413
Sheet Number: F4 of 4

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.

A. SZILVESZTER, P.ENG
ONTARIO P.ENG 100041568

Drawing has been digitally signed.