



**JORDAHL®**  
anchored in quality

Jordahl Canada Inc.  
35 Devon Rd.  
Brampton, ON, L6T 5B6  
Toll Free: (800) 363-3266  
Phone: (905)-799-7125  
Fax: (905)-458-5354  
[riyad.muzein@jordahl.ca](mailto:riyad.muzein@jordahl.ca)  
[www.jordahl.ca](http://www.jordahl.ca)

**PAGE:** 1 of 5

**DATE:** June 1, 2021

**TO:** Mansteel Rebar

**ATTENTION:** Howard Wu

**PHONE:** 905.737.9797

**EXT** -250

**EMAIL:** [HowardW@mansteelrebar.com](mailto:HowardW@mansteelrebar.com)

I am sending the Studrail® Placement Drawings for the "Forestside Townhouses" in Toronto, ON. These placement drawings were determined from Structural Drawings dated 03-25-2021. The structural engineer who designed this project should review these placement drawings. The engineer approved placement drawings will determine final manufactured quantities and pricing. Please have the purchase order reflect these approved quantities.

The Studrails® will be color coded using spray paint on one end for easy identification on-site. The colors and quantities of Studrails® are shown in the table below.

STUDRAIL MARK	COLOR	SIZE	So	SPACING	STUD DIA.	# OF STUDS	QTY
A/S-102A	Yellow	450 x 1238	225	197	15.9	5	1020
B/S-102A	White	350 x 1226	175	219	15.9	5	970
Total							1990

After reviewing the Structural Drawings, I have the following questions/comments.

1. Assumed Studrails detail A/S-102A @ 500 slab & B/S-102A @ 400 slab at all interior column location for ground floor building A,B,C& D (S102-A&B).
2. We have calculated the overall Height of the studs using the Slab thickness minus 25 mm top and bottom concrete cover each.

If you have any questions, please do not hesitate to contact me.

Yours Sincerely,  
JORDAHL®

Riyad Muzein

**The shear studs** used in the fabrication of JORDAHL® Studrails® are of Low Carbon Steel, C1015 to C1018 in accordance with ASTM-A108. The strength and ductility requirements are:

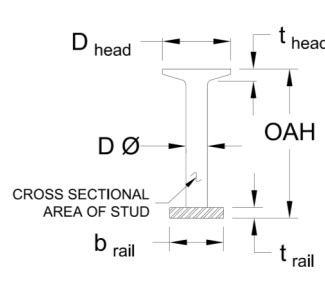
Yield Strength:	51,000 psi (350 MPa) minimum
Tensile Strength:	65,000 psi (450 MPa) minimum
Elongation in 2 in.:	20% minimum
Reduction in Area:	50% minimum

**The rails** used in JORDAHL® Studrails® are Low Carbon Steel Type 44W and ASTM A36 with the following strength and ductility requirements:

Yield Strength:	44,000 psi (300 MPa) minimum
Tensile Strength:	65,000 psi (450 MPa) minimum
Elongation in 8 in.:	20% minimum

The studs are welded in accordance with the latest editions of **American Welding Society (AWS) D1.1** and **CSA Standard W59** as certified by the Canadian Welding Bureau.

The overall height of the JORDAHL® Studrail® is dependent on the slab thickness and the required concrete cover. The height is constant along each Studrail®. The area of the stud head should be 10 times the area of the stem. The base rail profile should be as shown in ASTM A1044.



DØ in.(mm)	x-sect. area in.(mm)	D <sub>head</sub> in.(mm)	t <sub>head</sub> in.(mm)	b <sub>rail</sub> in.(mm)	t <sub>rail</sub> in.(mm)	min. OAH in.(mm)
3/8(9.5)	0.110(71)	1.19(71)	0.21(5.3)	1(25.4)	3/16(4.8)	3-1/2(90)
1/2(12.7)	0.196(127)	1.58(40.2)	0.28(7.1)	1-1/4(31.8)	1/4(6.5)	3-1/2(90)
5/8(15.9)	0.307(199)	1.98(50.2)	0.35(8.9)	1-3/4(44.5)	5/16(7.9)	4(100)
3/4(19.1)	0.442(287)	2.37(60.2)	0.42(10.7)	2(50.8)	3/8(9.5)	4-1/2(115)

JORDAHL® Studrails® should be specified in the project documents under “Section 3200 – Concrete Reinforcement”. The engineer should use wording similar to the following:

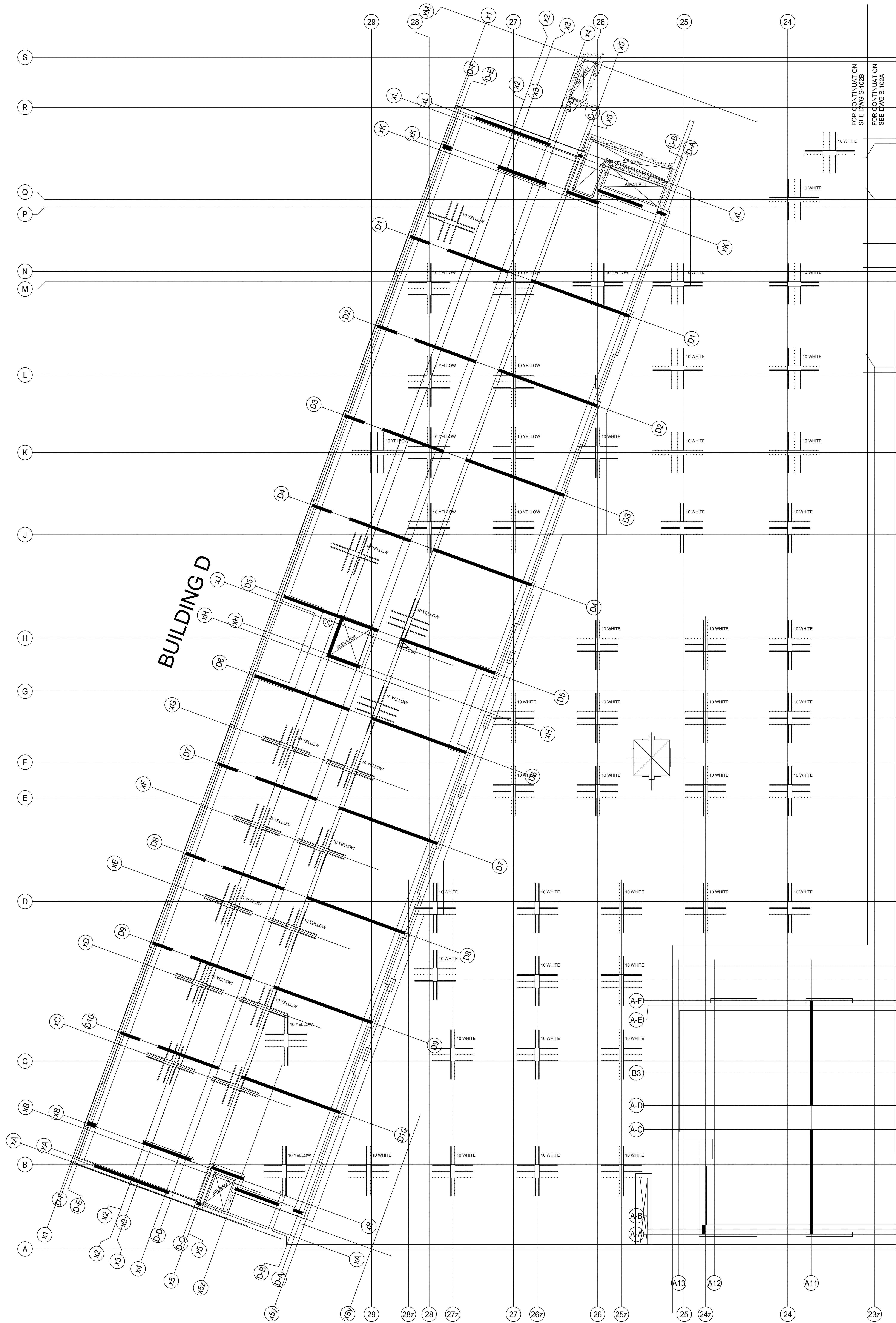
*“Shear Reinforcement at the slab-column connections as shown on the drawings and details, shall be Studrails® as manufactured by JORDAHL® and detailed in ICC ESR-2494. The complete and finished Studrail® shall be ICC ES evaluated and welding has to take place in an ICC ES approved and audited facility. Studrails® shall conform to the latest update of ASTM A1044.”*

Jordahl® USA, Inc.  
Palm Desert, CA

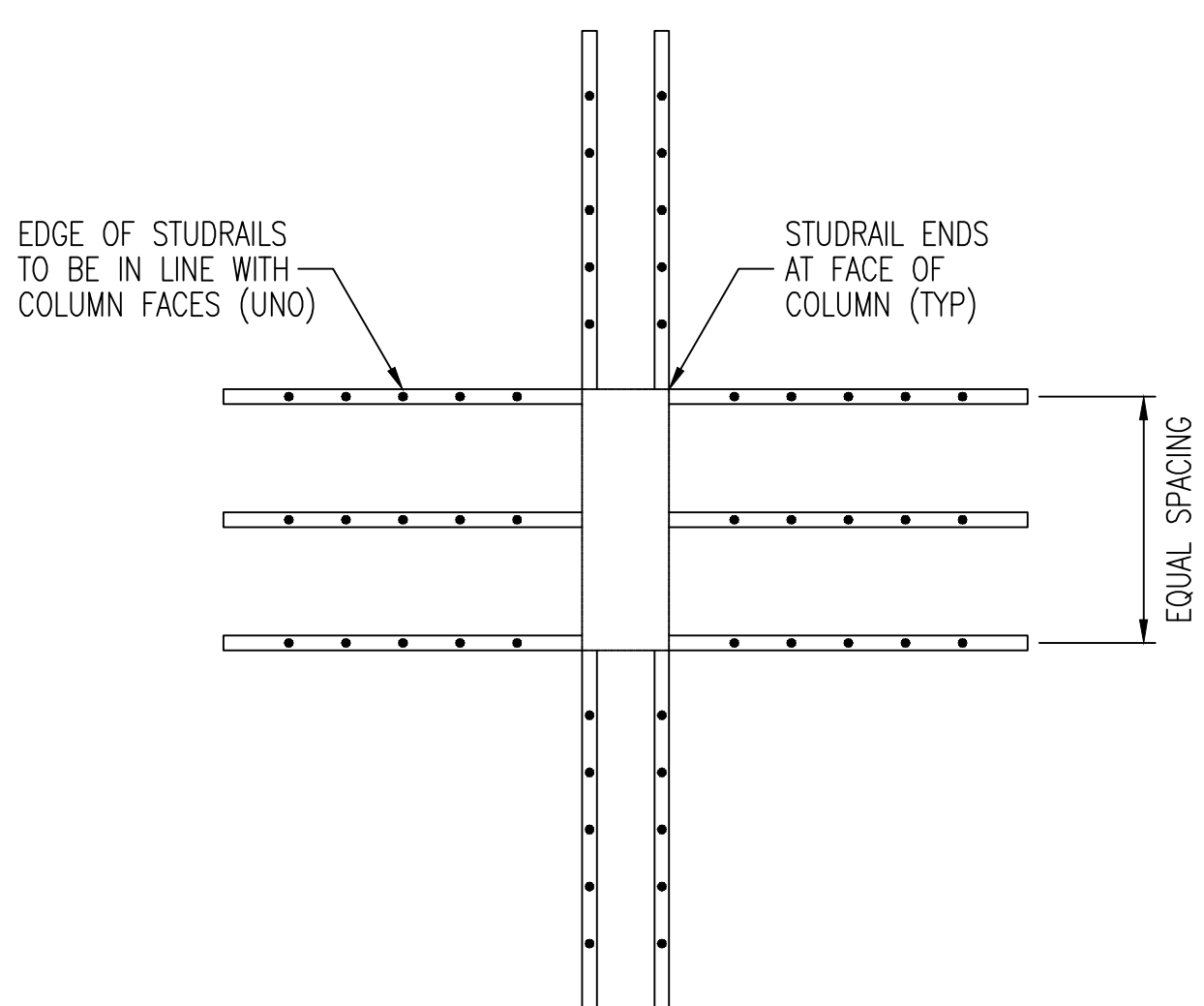
866-332-6687

Jordahl® Canada, Inc.  
Brampton, ON

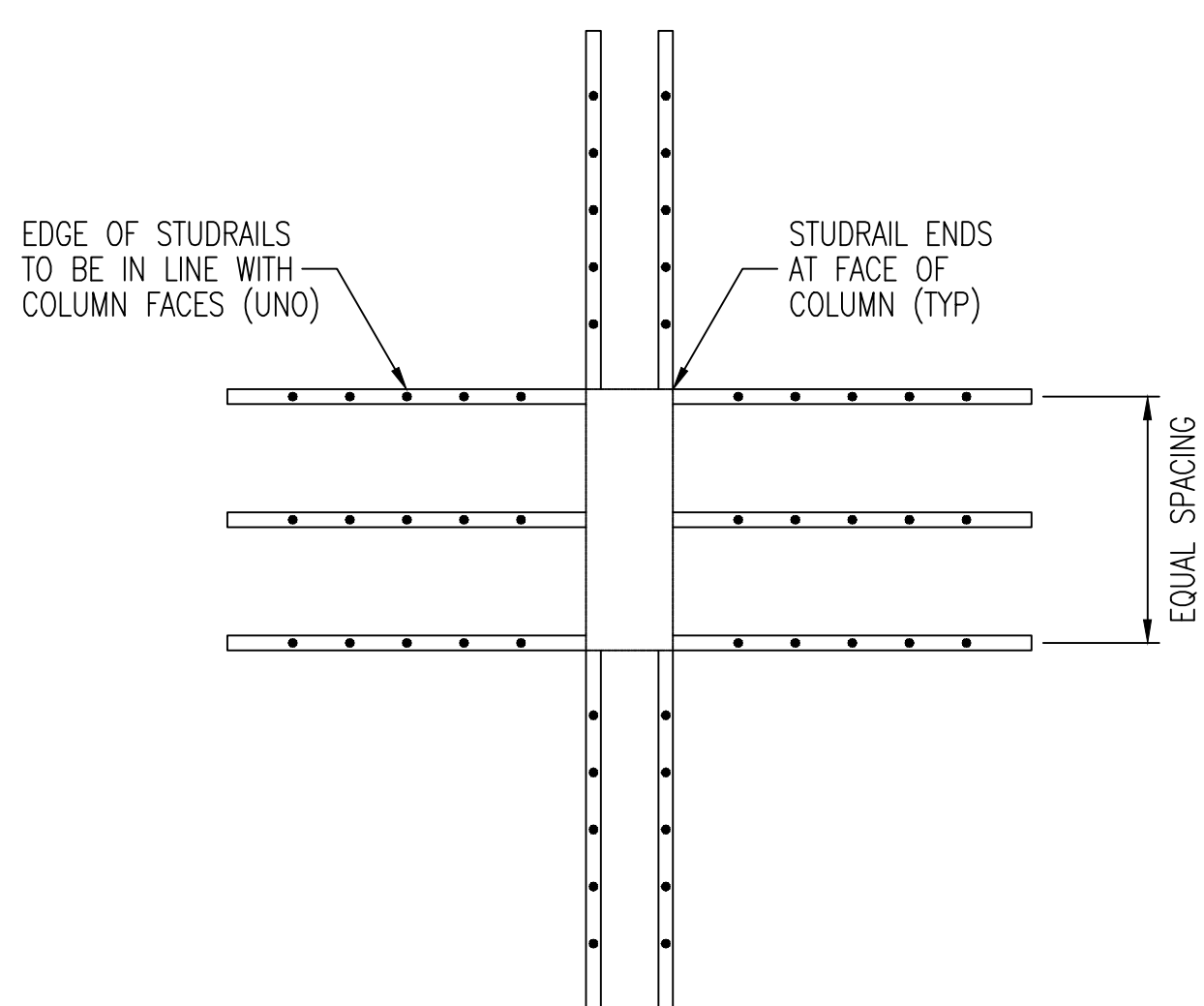
800-363-3266



GROUND FLOOR-A - STUDRAILS



STUDRAIL MARK A  
10 YELLOW STUDRAILS  
(26 LOCATIONS)



STUDRAIL MARK B  
10 WHITE STUDRAILS  
(37 LOCATIONS)

DRAWING REVIEW		
This review of this drawing does not in any way release the contractor of responsibility for its accuracy or for compliance with the contract documents.		
✓ No comment	See comment	
Amend & Resubmit	Revised See Remarks	
Submission No. 101055		
Project No. 01		
By 02 Jun 2021		
JABLONSKY, AST AND PARTNERS Consulting Engineers 1 Concord Gate, North York, ON M9C 4H4		

INSTALLATION INSTRUCTIONS FOR STUDRAILS® WITH 1/2" & 5/8" DIAMETER STUDS (CLIP STYLE CHAIR)

INSTALLATION INSTRUCTIONS FOR STUDRAILS® WITH 3/8" & 3/4" DIAMETER STUDS (STAR STYLE CHAIR)

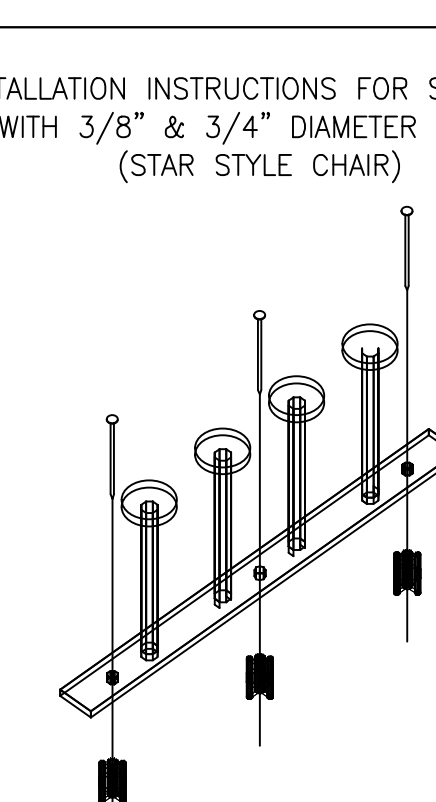
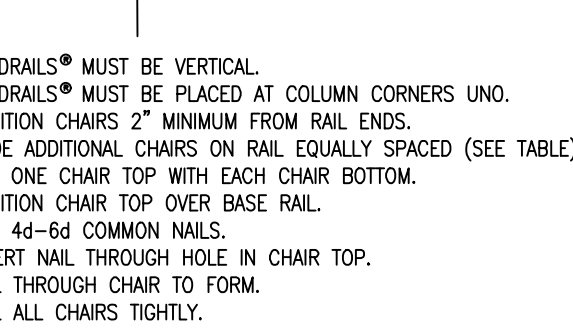
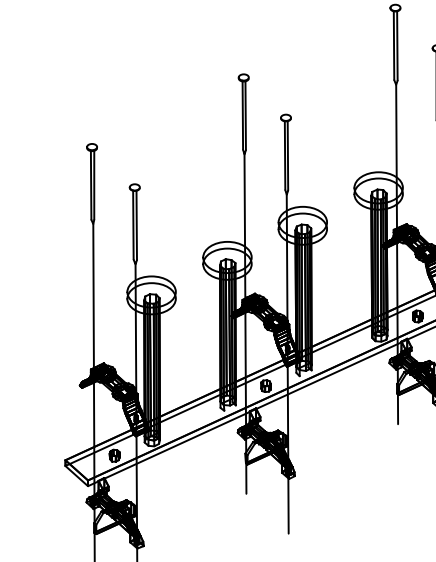
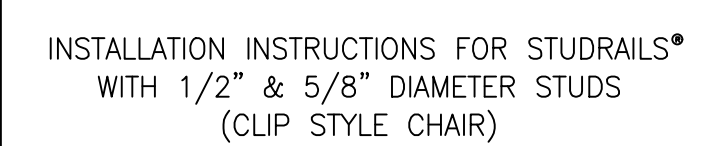
NUMBER OF CHAIRS PER RAIL		
LENGTH OF RAIL	NO. CHAIRS	
5' - 19 3/4"	2	
20' - 39 3/4"	3	
40' - 59 3/4"	4	
60' - 79 3/4"	5	
80' +	6	

\*\* PER DECON STANDARD, STUDRAILS ARE FABRICATED WITH UNIFORM STUD HEIGHT ON EACH RAIL. IF MULTIPLE STUD HEIGHTS ARE REQUIRED, BASE RAIL WILL BE DISCONTINUOUS. AT SLOPED SLAB, STUDRAILS ARE PROVIDED WITH UNIFORM STUD HEIGHT BASED ON THE INDICATED MINIMUM SLAB THICKNESS. PLEASE CONFIRM IF THIS IS ACCEPTABLE.

NOTE: STUDRAILS SHOULD BE PLACED 50mm FROM SLAB EDGES OR CHANGE IN SLAB THICKNESS TO MAINTAIN ADEQUATE COVER.

GROUND FLOOR-A - STUDRAILS SUMMARY

ID	STUDRAIL COLOR	OVERALL HEIGHT	x	OVERALL LENGTH	So	SPACING	STUD DIA.	NUMBER OF STUDS	STUDRAIL QUANTITY
A	YELLOW	450	x	1238	225	197	15.9	5	260
B	WHITE	350	x	1226	175	219	15.9	5	370
TOTAL								630	



- STUDRAILS\* MUST BE VERTICAL.
- STUDRAILS\* MUST BE PLACED AT COLUMN CORNERS UNO.
- PUSH CHAIRS INTO PRE-PUNCHED HOLES FROM BOTTOM OF BASE RAIL.
- USE 4d-6d COMMON NAILS.
- POSITION CHAIR TOP OVER BASE RAIL.
- NAIL THROUGH CHAIR TO FORM.
- NAIL ALL CHAIRS TIGHTLY.

LENGTH OF RAIL	NO. CHAIRS
0 - 19 3/4"	2
20 - 39 3/4"	3
40 - 59 3/4"	4
60 - 79 3/4"	5
80"+	6

NOTE: QUANTITY OF CHAIRS SHIPPED REFLECTS REQUIRED QUANTITIES PER LENGTH OF

\*\* PER DECON STANDARD,  
STUDRAILS ARE FABRICATED WITH  
UNIFORM STUD HEIGHT ON EACH  
RAIL.  
IF MULTIPLE STUD HEIGHTS ARE  
REQUIRED, BASE RAIL WILL BE  
DISCONTINUOUS.  
AT SLOPED SLAB, STUDRAILS ARE  
PROVIDED WITH UNIFORM STUD  
HEIGHT BASED ON THE INDICATED  
MINIMUM SLAB THICKNESS.  
PLEASE CONFIRM IF THIS IS  
ACCEPTABLE.

DRAWING REVIEW		
This review of this drawing does not in any way relieve the contractor of responsibility for its accuracy or for compliance with contract documents.		
<input checked="" type="checkbox"/>	No comment	See comments
<input type="checkbox"/>	Amend & Resubmit	Rejected See Remarks
Submission No. _____ Project No. <u>19066</u> By <u>AF</u> Date <u>02 Jun 2021</u>		

NOTE: STUDRAILS SHOULD BE PLACED 50mm FROM SLAB EDGES OR CHANGE IN SLAB THICKNESS TO MAINTAIN ADEQUATE COVER.

**JORDAHL®**  
anchored in quality

4470 GATEWAY DRIVE, SUITE 100, PALM DESERT, CA 92211  
WWW.JORDAHLUSA.COM

34470 GATEWAY DRIVE, SUITE 100, PALM DESERT, CA 92211  
WWW.JORDAHLUSA.COM

FORESTSIDE TOWNHOUSES  
TORONTO, ON

REV. NO.:	REVISION DATE:

REVISION DATE OF STRUCTURAL  
DRAWING REFERENCED:

03/25/2021

DATE DRAWN:  
05/27/2021

DRAWN BY: ACI

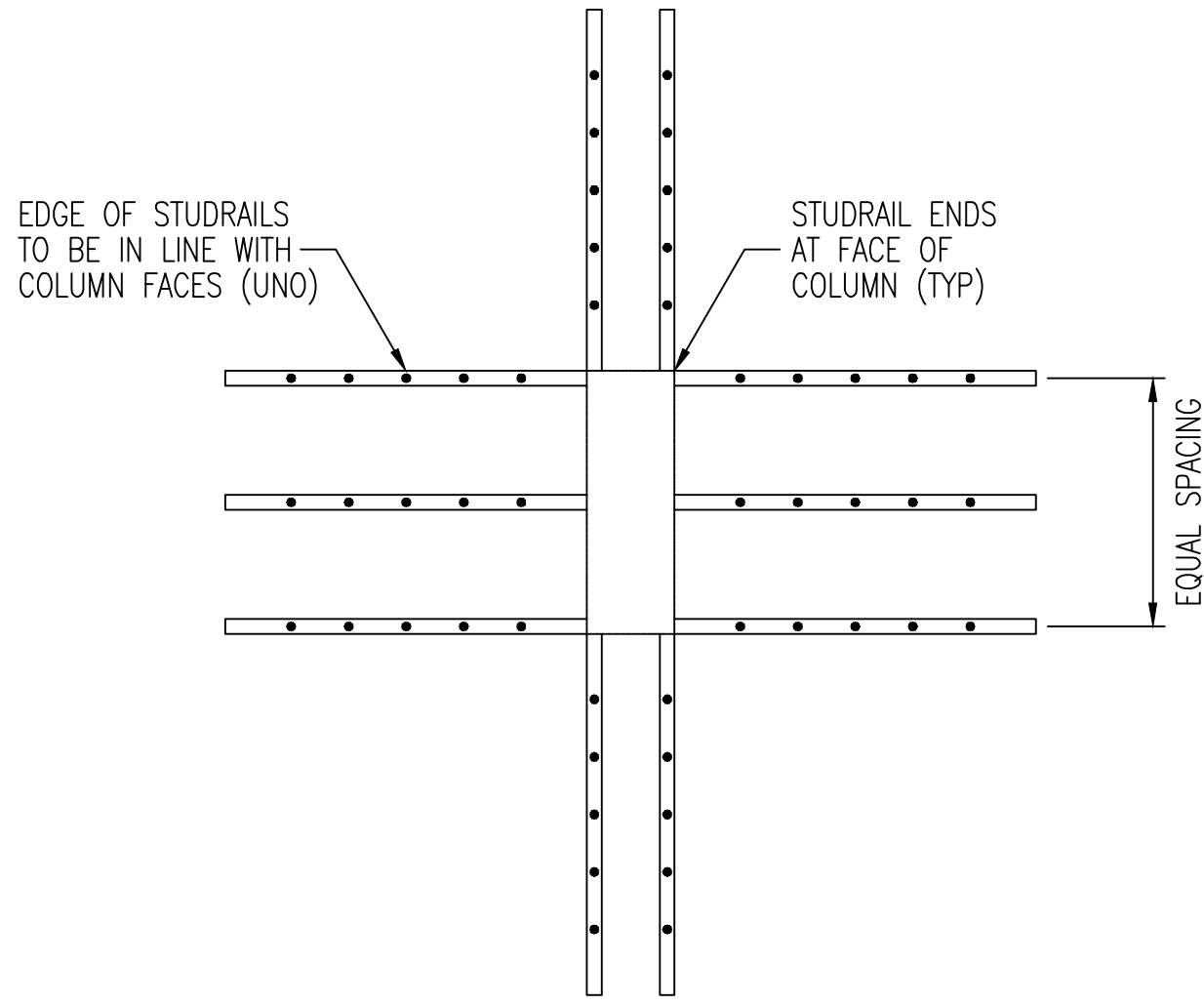
APPR. BY: RM

SCALE: NTS

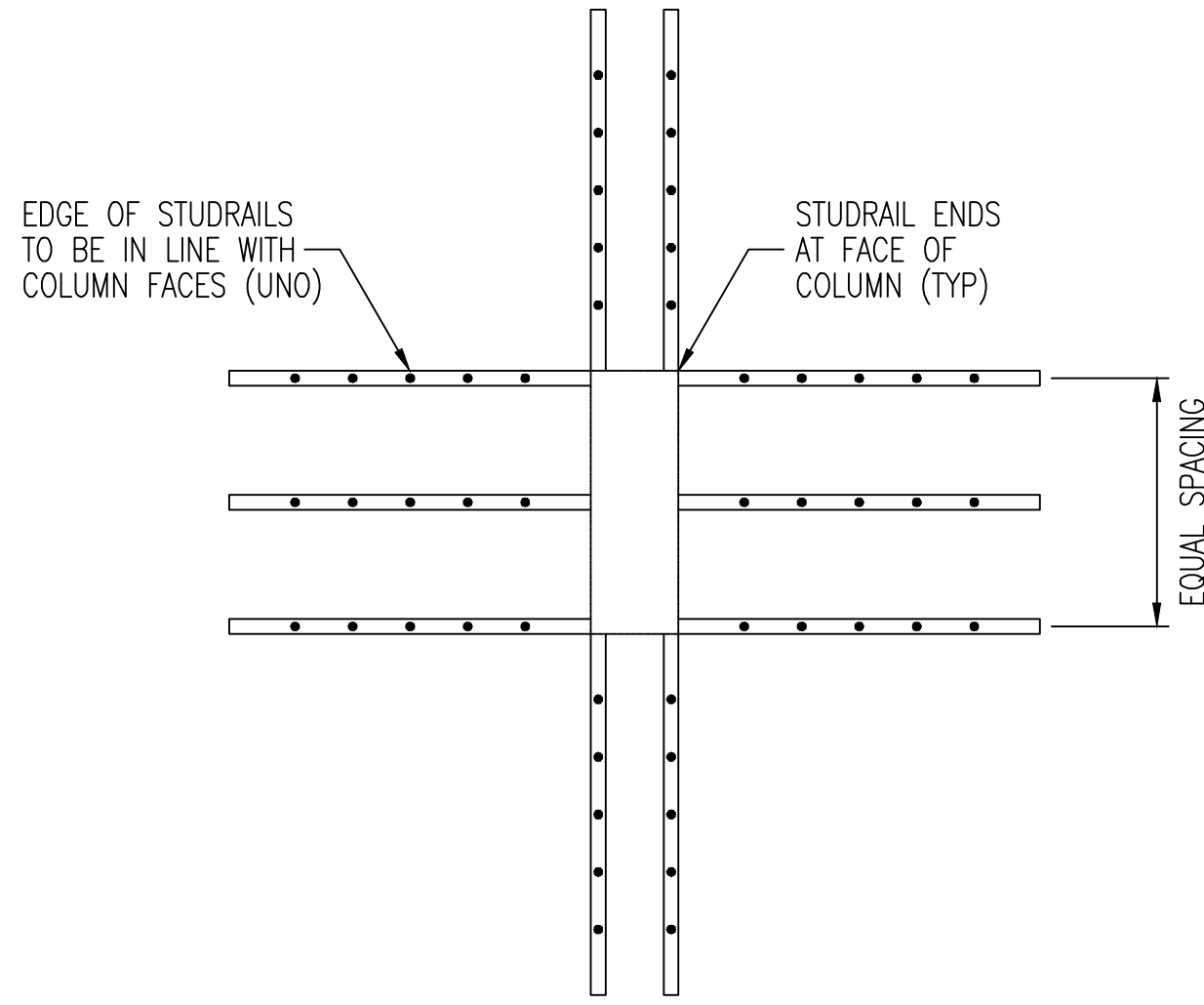
DWG TITLE:  
GROUND FLOOR-B  
STUDRAIL PLAN  
LAYOUT  
& DETAILS

DWG NO:  
**DEC48029**

## GROUND FLOOR-B - STUDRAILS



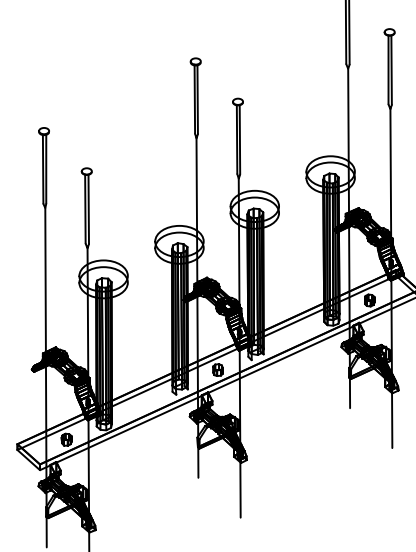
STUDRAIL MARK A  
10 YELLOW STUDRAILS  
(71 LOCATIONS)



STUDRAIL MARK B  
10 WHITE STUDRAILS  
(65 LOCATIONS)

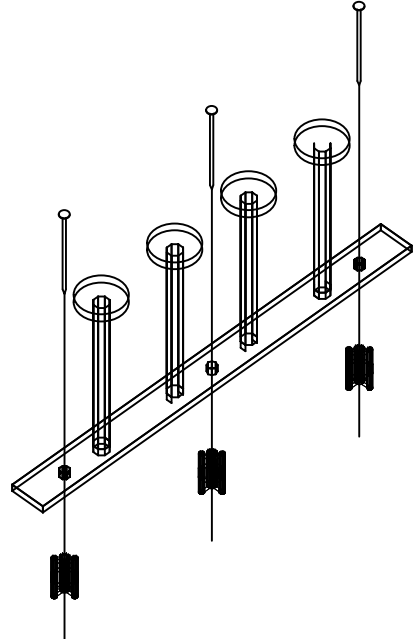
DRAWING REVIEW			
The review of this drawing does not in any way relieve the contractor of responsibility for its accuracy or for compliance with the contract documents.			
<input checked="" type="checkbox"/>	No comment		See comment
<input type="checkbox"/>	Amend & Resubmit	<input type="checkbox"/>	Rejected See Remarks
Submission No. _____			
Project No. 19006			
By: AT			
Date: 02 Jun 2021			
JABLONSKY, ASB AND PARTNERS Consulting Engineers 3 Concorde Gate, North York, ON M2C 4R6			

INSTALLATION INSTRUCTIONS FOR STUDRAILS®  
WITH 1/2" & 5/8" DIAMETER STUDS  
(CLIP STYLE CHAIR)



- STUDRAILS® MUST BE VERTICAL.
- STUDRAILS® MUST BE PLACED AT COLUMN CORNERS UNO.
- POSITION CHAIRS 2" MINIMUM FROM RAIL ENDS.
- SLIDE ADDITIONAL CHAIRS ON RAIL EQUALLY SPACED (SEE TABLE).
- USE ONE CHAIR TOP WITH EACH CHAIR BOTTOM.
- POSITION CHAIR TOP OVER BASE RAIL.
- USE #4-64 COMMON NAILS.
- INSERT NAIL THROUGH HOLE IN CHAIR TOP.
- NAIL THROUGH CHAIR TO FORM.
- NAIL ALL CHAIRS TIGHTLY.

INSTALLATION INSTRUCTIONS FOR STUDRAILS®  
WITH 3/8" & 3/4" DIAMETER STUDS  
(STAR STYLE CHAIR)



- STUDRAILS® MUST BE VERTICAL.
- STUDRAILS® MUST BE PLACED AT COLUMN CORNERS UNO.
- PUSH CHAIRS INTO PRE-PUNCHED HOLES FROM BOTTOM OF BASE RAIL.
- USE #4-64 COMMON NAILS.
- POSITION CHAIR TOP OVER BASE RAIL.
- NAIL THROUGH CHAIR TO FORM.
- NAIL ALL CHAIRS TIGHTLY.

NUMBER OF CHAIRS PER RAIL

LENGTH OF RAIL	NO. CHAIRS
0 - 19 3/4"	2
20 - 39 3/4"	3
40 - 59 3/4"	4
60 - 79 3/4"	5
80"	6

NOTE: QUANTITY OF CHAIRS SHIPPED REFLECTS  
REQUIRED QUANTITIES PER LENGTH OF RAIL.

\*\* PER DECON STANDARD,  
STUDRAILS ARE FABRICATED WITH  
UNIFORM STUD HEIGHT ON EACH  
RAIL.  
IF MULTIPLE STUD HEIGHTS ARE  
REQUIRED, BASE RAIL WILL BE  
DISCONTINUOUS.  
AT SLOPED SLAB, STUDRAILS ARE  
PROVIDED WITH UNIFORM STUD  
HEIGHT BASED ON THE INDICATED  
MINIMUM SLAB THICKNESS.  
PLEASE CONFIRM IF THIS IS  
ACCEPTABLE.

GROUND FLOOR-B - STUDRAILS SUMMARY

ID	STUDRAIL COLOR	OVERALL HEIGHT	x	OVERALL LENGTH	So	SPACING	STUD DIA.	NUMBER OF STUDS	STUDRAIL QUANTITY
A	YELLOW	450	x	1238	225	197	15.9	5	710
B	WHITE	350	x	1226	175	219	15.9	5	650
								TOTAL	1360

NOTE: STUDRAILS SHOULD BE PLACED  
50mm FROM SLAB EDGES OR CHANGE  
IN SLAB THICKNESS TO MAINTAIN  
ADEQUATE COVER.



JORDAHL®  
anchored in quality

34470 GATEWAY DRIVE, SUITE 100, PALM DESERT, CA 92211  
WWW.JORDAHLUSA.COM

FORESTSIDE TOWNHOUSES  
TORONTO, ON

REV. NO.:	REVISION DATE:
REVISION DATE OF STRUCTURAL DRAWING REFERENCED:	
03/25/2021	
DATE DRAWN:	05/27/2021
DRAWN BY:	ACL
APPR. BY:	RM
SCALE:	NTS
DWG TITLE:	GROUND FLOOR-B STUDRAIL PLAN LAYOUT & DETAILS
DWG NO:	DEC48030