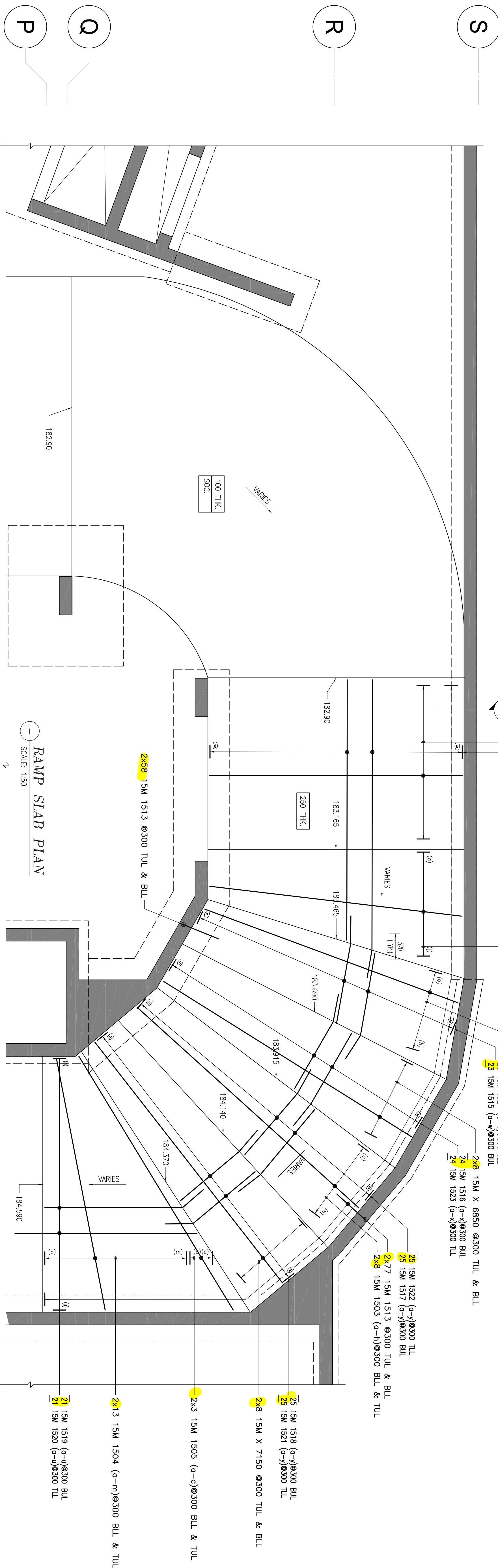


Release Code: R6.11B GF BUL P#12 BENDING DETAILS.															
Bar Mark	Qty	Standard length (m)	X	Y	Z	T	F	V	H	J	K	U	W		
15M	2700	7700			2700										
20M	2700	7700			2700										
10/15M	2350				2350										
10/15M	1020				1020										
8/25M	4000				4000										
6/20M	5500				5500										
6/20M	1800				880										
6/20M	7750				7750										
6/20M	1640				1640										
10/2	670	100.50			670			70	270						
10/1	28.10M	106.1			144			920							
10/0	17.10M	90.17			570			160	170						
15/4	1.5M	366.1			180			2700						130	
20/5	2.20M	310.1			270			2700							
20/3	6.20M	288.2			370			2580						20	
20/4	35.20M	145.2			370			1140							
20/1	24.20M	220.2			370			1870							
20/2	12.25M	265.2			400			3530							
20/5	35.20M	300.2			370			2700							
20/2	46.20M	266.20			660			150							
20/3	61.20M	470.2			370			4390							
20/1	35.20M	800.2			370			7790							
20/5	48.20M	344.20			660			150							
20/5	12.20M	529.2			370			4980							
20/0a	6.20M	670.2			370			6400							
20/0a	2.20M	630.2			370			5820							
20/0b	2.20M	630.2			370			5880							
20/0c	2.20M	625.2			370			5940							
20/0d	2.20M	630.2			370			6000							
20/0a	2.20M	570.2			370			5540							
20/0b	1.20M	550.2			370			540							
20/0c	1.20M	454.2			370			4230							
20/0b	1.20M	465.2			370			4340							
20/0c	1.20M	476.2			370			4450							
20/0d	1.20M	487.2			370			4560							
20/0e	1.20M	498.2			370			4670							
20/0f	1.20M	509.2			370			4780							
20/0g	1.20M	520.2			370			4890							
20/0h	1.20M	531.2			370			5000							
20/0i	1.20M	542.2			370			5110							
20/0j	1.20M	553.2			370			5220							
20/0k	1.20M	564.2			370			5330							
20/0l	1.20M	575.2			370			5440							
20/0m	1.20M	586.2			370			5550							
20/0n	1.20M	597.2			370			5660							
20/0o	1.20M	608.2			370			5770							
20/0p	1.20M	619.2			370			5880							
20/0q	1.20M	630.2			370			5990							
20/0r	1.20M	641.2			370			6100							
20/0s	1.20M	652.2			370			6210							
20/0t	1.20M	663.2			370			6320							
20/0u	1.20M	674.2			370			6430							
20/0v	1.20M	685.2			370			6540							
20/0w	1.20M	696.2			370			6650							
20/0x	1.20M	707.2			370			6760							
20/0y	1.20M	718.2			370			6870							
20/0z	1.20M	729.2			370			6980							
20/0A	1.20M	740.2			370			7090							
20/0B	1.20M	751.2			370			7200							
20/0C	1.20M	762.2			370			7310							
20/0D	1.20M	773.2			370			7420							
20/0E	1.20M	784.2			370			7530							
20/0F	1.20M	795.2			370			7640							
20/0G	1.20M	806.2			370			7750							
20/0H	1.20M	817.2			370			7860							
20/0I	1.20M	828.2			370			7970							
20/0J	1.20M	839.2			370			8080							
20/0K	1.20M	850.2			370			8190							
20/0L	1.20M	861.2			370			8300							
20/0M	1.20M	872.2			370			8410							
20/0N	1.20M	883.2			370			8520							
20/0O	1.20M	894.2			370			8630							
20/0P	1.20M	905.2			370			8740							
20/0Q	1.20M	916.2			370			8850							
20/0R	1.20M	927.2			370			8960							
20/0S	1.20M	938.2			370			9070							
20/0T	1.20M	949.2			370			9180							
20/0U	1.20M	960.2			370			9290							
20/0V	1.20M	971.2			370			9400							
20/0W	1.20M	982.2			370			9510							
20/0X	1.20M	993.2			370			9620							
20/0Y	1.20M	1004.2			370			9730							
20/0Z	1.20M	1015.2			370			9840							
20/0A	1.20M	1026.2			370			9950							
20/0B	1.20M	1037.2			370			10060							
20/0C	1.20M	1048.2			370			10170							
20/0D	1.20M	1059.2			370			10280							
20/0E	1.20M	1070.2			370			10390							
20/0F	1.20M	1081.2			370			10500							
20/0G	1.20M	1092.2			370			10610							
20/0H	1.20M	1103.2			370			10720							
20/0I	1.20M	1114.2			370			10830							
20/0J	1.20M	1125.2			370			10940							
20/0K	1.20M	1136.2			370			11050							
20/0L	1.20M	1147.2			370			11160							
20/0M	1.20M	1158.2			370			11270							
20/0N	1.20M	1169.2			370			11380							
20/0O	1.20M	1180.2			370			11490							
20/0P	1.20M	1191.2			370			11600							
20/0Q	1.20M	1202.2			370			11710							
20/0R	1.20M	1213.2			370			11820							
20/0S	1.20M	1224.2			370			11930							
20/0T	1.20M	1235.2			370			12040							
20/0U	1.20M	1246.2			370			12150							
20/0V	1.20M	1257.2			370			12260							
20/0W	1.20M	1268.2			370			12370							
20/0X	1.20M	1279.2			370			12480							
20/0Y	1.20M	1290.2			370			12590							
20/0Z	1.20M	1301.2			370			12700							
20/0A	1.20M	1312.2			370			12810							
20/0B	1.20M	1323.2			370			12920							
20/0C	1.20M	1334.2			370			13030							
20/0D	1.20M	1345.2			370			13140							
20/0E	1.20M	1356.2			370			13250							
20/0F	1.20M	1367.2			370			13360							
20/0G	1.20M	1378.2			370			13470							
20/0H	1.20M	1389.2			370			13580							
20/0I	1.20M	1400.2			370			13690							
20/0J	1.20M	1411.2			370			13800							
20/0K	1.20M	1422.2			370			13910							
20/0L	1.20M	1433.2			370			14020							
20/0M	1.20M	1444.2			370			14130							
20/0N	1.20M	1455.2			370			14240							
20/0O	1.20M	1466.2			370			14350							
20/0P	1.20M	1477.2			370			14460							
20/0Q	1.20M	1488.2			370			14570							
20/0R	1.20M	1499.2			370			14680							
20/0S	1.20M	1510.2		</											



Release Code: RE-11E RAMP SLAB												
Bar	Hook	Qty	Section	Length	ft	L	L'	L''	L'''	L''''	L'''''	L''''''
501a		26.534	5970			5970						
501b		2.154	5980			5980						
501c		2.154	5930			5930						
501d		2.154	5950			5950						
501e		2.154	5980			5980						
501f		2.154	6070			6070						
501g		2.154	6030			6030						
501h		2.154	6060			6060						
501i		2.154	6090			6090						
501j		2.154	610			610						
501k		2.154	610			610						
502a		2.154	6120			6120						
502b		2.154	6130			6130						
502c		2.154	6180			6180						
502d		2.154	6140			6140						
502e		2.154	6140			6140						
502f		2.154	6510			6510						
502g		2.154	6570			6570						
502h		2.154	6680			6680						
502i		2.154	6710			6710						
502j		2.154	6900			6900						
502k		2.154	6930			6930						
502l		2.154	6960			6960						
502m		2.154	6990			6990						
502n		2.154	7000			7000						
502o		2.154	7040			7040						
502p		2.154	7070			7070						
502q		2.154	7100			7100						
502r		15.534	6830			6830						
502s		15.534	7130			7130						
503a		2.154	5980			5980						
503b		2.154	5980			5980						
503c		2.154	6030			6030						
503d		2.154	6090			6090						
503e		2.154	6130			6130						
503f		2.154	6140			6140						
503g		2.154	6180			6180						
503h		2.154	6190			6190						
503i		2.154	6270			6270						
503j		2.154	6270			6270						
503k		2.154	6280			6280						

Release Code: RE-11F RAMP SLAB										REVISION DETAILS:					
Bar Mark	Qty	Spec	Prod	Length/Type	N	N	N	N	N	Y	Y	Y	Y	Y	Y
1504a	2.934			4340					6340						
1504b	2.934			4410					6410						
1504c	2.934			4470					6470						
1504d	2.934			6330					6330						
1504e	2.934			6640					6640						
1504f	2.934			6660					6660						
1504g	2.934			6800					6800						
1505a	2.934			6680					6680						
1505b	2.934			7130					7130						
1505c	2.934			5800					5800						
1505d	1.934			5780					5780						
1505e	1.934			5200					5200						
1505f	1.934			5380					5380						
1505g	1.934			5470					5470						
1505h	1.934			5560					5560						
1505i	1.934			5520					5520						
1505j	1.934			5750					5750						
1505k	1.934			5840					5840						
1505l	1.934			5930					5930						
1505m	1.934			6020					6020						
1505n	1.934			6120					6120						
1505o	1.934			6270					6270						
1505p	1.934			6300					6300						
1505q	1.934			6380					6380						
1505r	1.934			6480					6480						
1505s	1.934			6580					6580						
1505t	1.934			6670					6670						
1505u	1.934			6760					6760						
1505v	1.934			6860					6860						
1505w	1.934			6930					6930						
1505x	1.934			6520					6520						
1505y	1.934			6520					6520						
1505z	1.934			8520					8520						
1506a	1.934			8630					8630						
1506b	1.934			2050					2050						

— PLS. REFER TO R6.11G FOR BALANCE OF BARILS

DRAWING REVIEW

This review of this drawing does not in any way relieve the contractor of responsibility for its accuracy or for compliance with the contract documents.

✓	No comment	See comment
Amend & Resubmit	Rejected	See Remarks

Submission No.	
Project No.	19066
By	MB
Date	22 Sep 2021

JABLONSKY, AST AND PARTNERS
Consulting Engineers
11129 Leslie Street Don Mills, Ont. M3C 2K5

- ## NOTES

1. ALL STEEL TO BE GRADE 400R
2. STRENGTH OF CONCRETE
20MPa – CRANE PAD
25MPa – INTERIOR EXTERIOR FOOTINGS
50MPa – INTERIOR PIERS/COLUMNS
50MPa – EXTERIOR PIERS/COLUMNS, INTERIOR WALLS & SLAB,
INTERIOR & EXTERIOR GRADE BEAMS
3. CONCRETE COVER:
FTG., ROD. CAST AGAINST EARTH & DECOR CHEMICALS
COLUMNS NOT EXPOSED (<35M): (35M<45M)
SLAB & WALLS NOT EXPOSED (20M–35M): (40M
TIES & STRIPS)

3. CONCRETE COVER:
FTG., FND. CAST AGAINST EARTH (& DEICING CHEMICALS)
COLUMNS NOT EXPOSED (<35M); (>35M<45M)
SLAB & WALLS NOT EXPOSED (20M-35M); (40M)
TIES & STIRRUPS

- 75mm
- 50mm
- 35mm; 45mm
- 40mm

- #### 4. COMPRESSION LAP SPICE (FOR BAR GRADE 400MPa)

BAR SIZE	STANDARD LAP (mm)
10M	300
15M	440
20M	590
25M	730
30M	880
35M	1030

- 5.
- TENSION LAP SPICE (FOR BAR GRADE 400MPa)

BAR SIZE	$\tau_c=25$		$\tau_c=30$		$\tau_c=35$	
	Bot.	TOP	Bot.	TOP	Bot.	TOP
10M	380	490	350	450	320	420
15M	570	740	520	670	480	620
20M	750	980	690	890	640	830
25M	1170	1530	1070	1390	990	1290
35M	1410	1850	1290	1670	1190	1550
50M	1640	2130	1500	1950	1390	1800

FORESTSIDE TOWNHOUSES

DRAWING No.	
-------------	--

MANSTEEL
MANULIFE TUBULAR
105 Industrial Road, Richmond Hill,
Ontario L4B 1N1, Canada
Tel: 905-709-2200
Fax: 905-709-2201
E-mail: manulife@manulife.com
Web: www.manulife.com

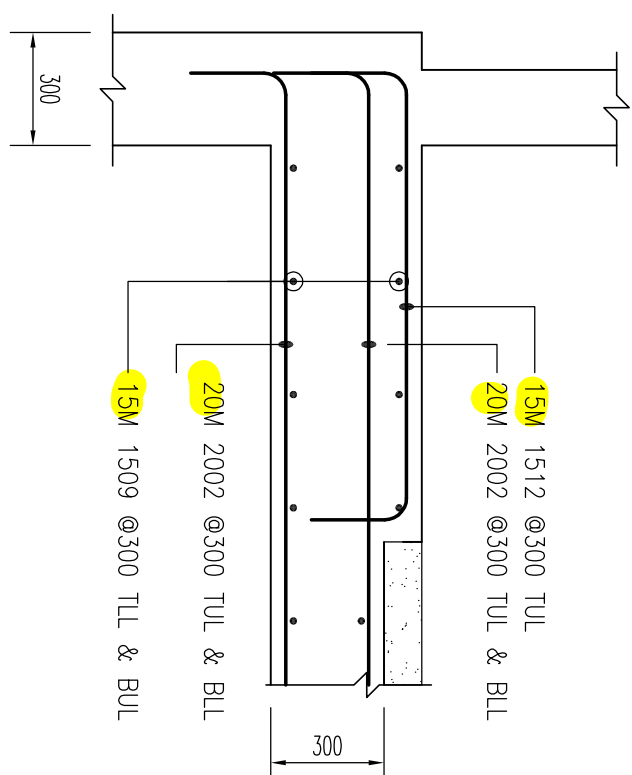
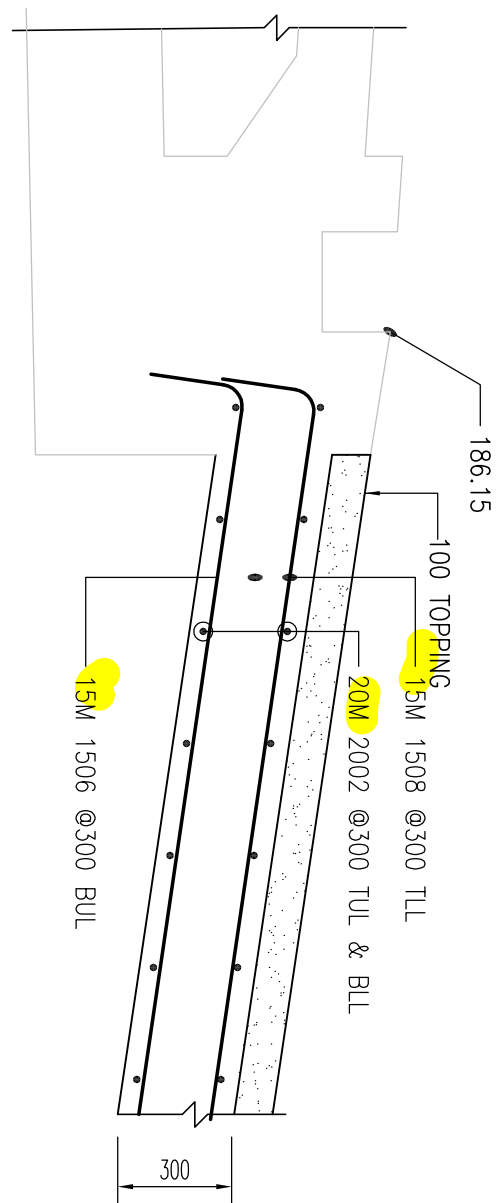
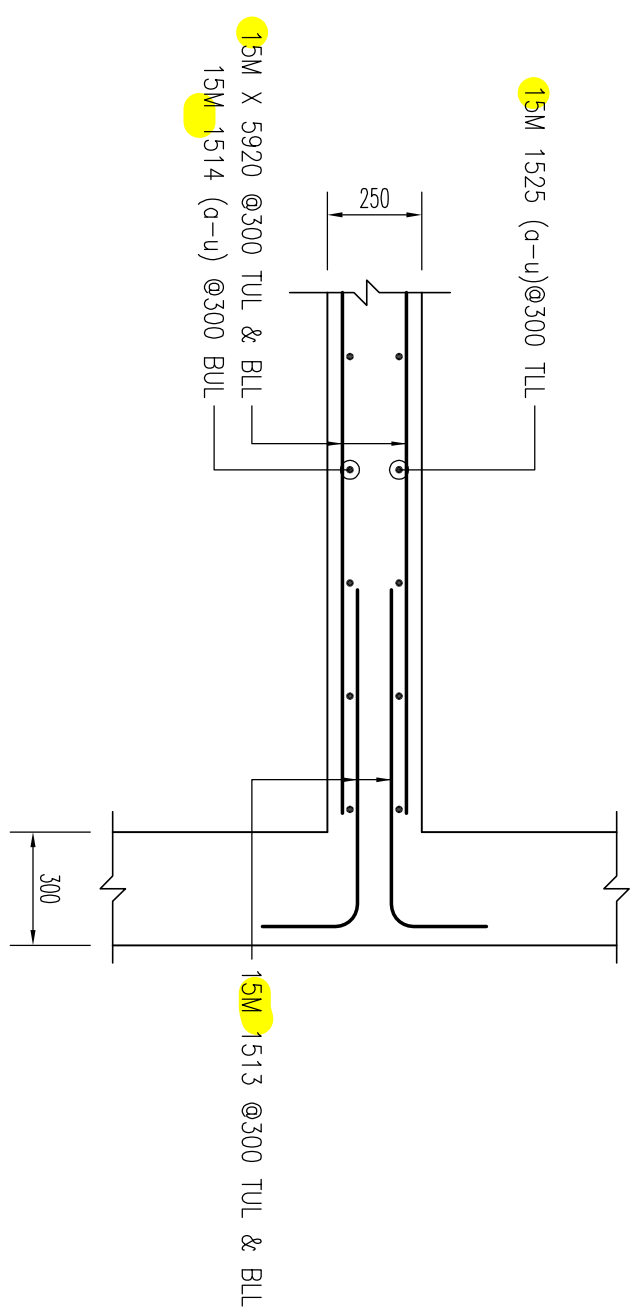
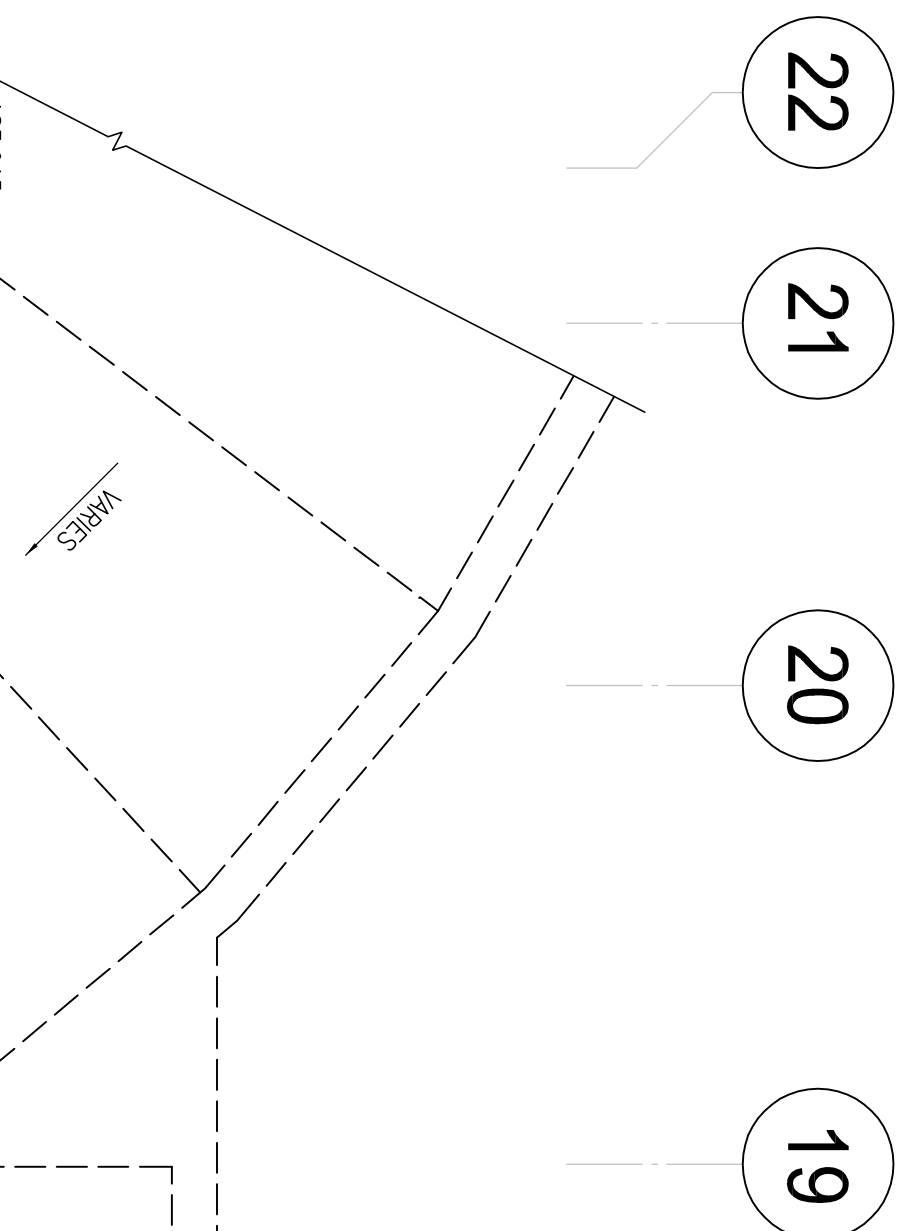
REBAR
 Phone: 905-737-9797
 Fax: 905-737-9704
 Email: Info@mansteelrebar.com

REBAF

- BRAMP-1, ON

RAMPS LAB P#12 (SHT1

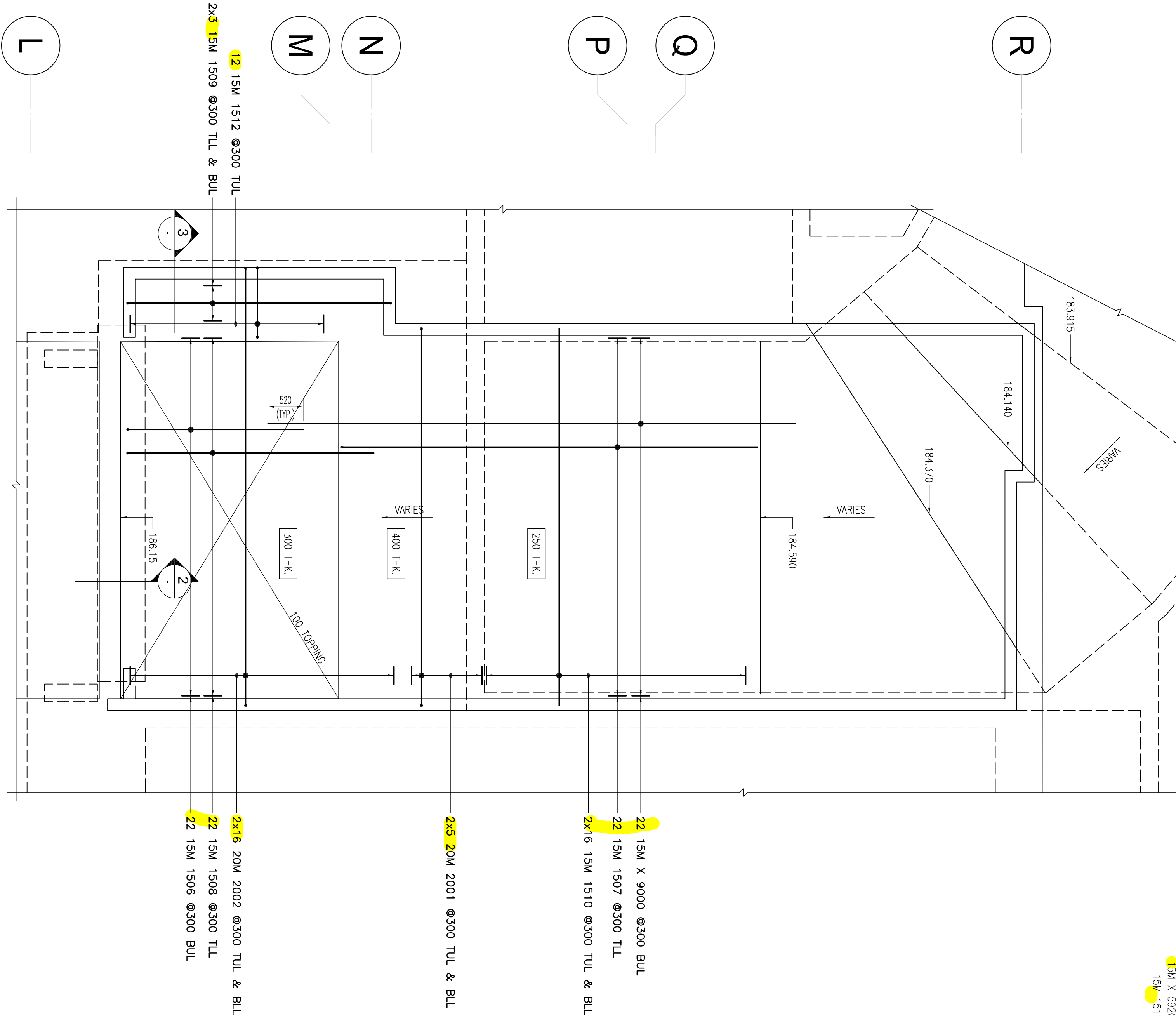
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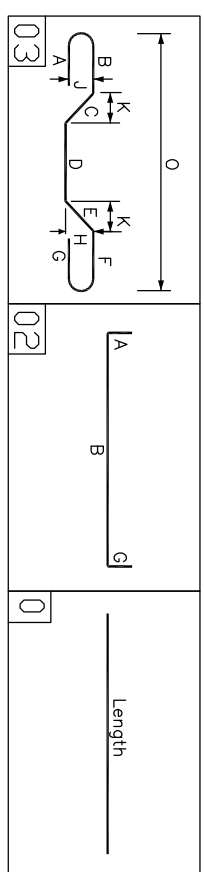
SECTION 1
SCALE: 1:20

2
SECTION
SCALE: 1:20

3
SECTION
SCALE: 1:20



Release Code: RE-11F		BENDING DETAILS:									
Bar mark	Qty	Section length (mm)	R ¹	V ¹	U ¹	T ¹	V ²	U ²	R ²	V ³	R ³
22 954	9000		3000								
1532	12 954	1770 Z	260								
1507	22 954	1780 Z	260	1700							
1508	22 954	1470 Z	260	4270							
1506	22 954	3260 Z	260	3000							
1509	6 954	5050 Z	260	3000							
1530	22 954	6970 Z	260	6450							
2002	32 294	8890 Z	300	7470							
2001	10 294	7070 Z	300	6450							



BAR SIZE	STANDARD LAP (mm)
10M	300
15M	440
20M	560
25M	730
30M	880
35M	1030

TENSION LAP SIZES (FOR BAR GRADE 400M _P O)								
BAR SIZE	$t_c=25$		$t_c=30$		$t_c=35$		TOP	TOP
	BOI.	TOP	BOI.	TOP	BOI.	TOP		
10M	360	490	350	450	320	420		
15M	570	740	520	670	480	620		
20M	750	980	690	890	640	830		
25M	1170	1530	1070	1380	990	1290		
30M	1410	1830	1290	1670	1190	1550		
35M	1640	2130	1500	1930	1390	1800		

DRAWING REVIEW

This review of this drawing does not in any way relieve the contractor of responsibility for its accuracy or for compliance with the contract documents.

✓	No comment	See comment
Amend & Resubmit		Rejected See Remarks

Submission No.	19066
Project No.	
By	MB
Date	22 Sep 2021

JABLONSKY, AST AND PARTNERS
Consulting Engineers
11229 Leslie Street Don Mills, Ont. M3C 2K5

[illegible]

MANSTEEL

REBAR

MANSTEEL MEDAL
105 Industrial Road, Richmond Hill,
Ontario L4C 2Y4 Canada
Phone: 905-737-8977
Fax: 905-737-9704
Email: info@mansteelrebar.com

RAMP SLAB PLAN
SCALE: 1:50

NOTES

1. ALL STEEL TO BE GRADE 400R
2. STRENGTH OF CONCRETE
 - 30MPa – CRANE PAD
 - 25MPa – INTERIOR/EXTERIOR FOOTINGS
 - 50MPa – INTERIOR PIERS/COLUMNS
 - 30MPa – EXTERIOR PIERS/COLUMNS, INTERIOR WALLS & SLAB, INTERIOR & EXTERIOR GRADE BEAMS

3. CONCRETE COVER:
FTG. FND. CAST AGAINST EARTH (& DEICING CHEMICALS)
COLUMNS NOT EXPOSED (<35M): (>35M<45M)
SLAB & WALLS NOT EXPOSED (20M-35M), (40M)
TIES & STIRRUPS

- 75mm
- 50mm
- 35mm;45mm
- 40mm

4. COMPRESSION LAP SPLICE (FOR BAR GRADE 400MPa

BAR SIZE	$t_c=25$		$t_c=30$		$t_c=35$	
	BOT.	TOP	BOT.	TOP	BOT.	TOP
10M	380	490	350	450	320	420
15M	570	740	520	670	480	620
20M	750	980	690	890	640	830
25M	1170	1530	1070	1390	990	1290
30M	1410	1830	1290	1670	1190	1550

5. TENSION LAP SPlice (FOR BAR GRADE 400MPa).

**FORESTSIDE TOWNHOUSES
-BRAMPTON, ON**

RAMPS LAB P#12 (SHT2)

DRAWING No.	

DATE: 11/11/2011 10:30 AM
CHECKED BY: [Signature]
R6.11F

Release Code: R6.11E RAMP SLAB												
Bar Mark	Qty	Span/End length/ps	X	Y	Z	T	U	V	W	X	Y	Z
520a	159	2650	2650									
520b	159	2850		2850								
520c	159	3050		3050								
520d	159	3250		3250								
520e	159	3450		3450								
520f	159	3650		3650								
520g	159	3850		3850								
520h	159	4050		4050								
520i	159	4250		4250								
520j	159	4450		4450								
520k	159	4650		4650								
520l	159	4850		4850								
520m	159	5050		5050								
520n	159	5250		5250								
520o	159	5450		5450								
520p	159	5650		5650								
520q	159	5850		5850								
520r	159	6050		6050								
520s	159	6250		6250								
520t	159	6450		6450								
520u	159	6650		6650								
520v	159	6850		6850								
520w	159	7050		7050								
520x	159	7250		7250								
520y	159	7450		7450								
520z	159	7650		7650								
520aa	159	7850		7850								
520ab	159	8050		8050								
520ac	159	8250		8250								
520ad	159	8450		8450								
520ae	159	8650		8650								
520af	159	8850		8850								
520ag	159	9050		9050								
520ah	159	9250		9250								
520ai	159	9450		9450								
520aj	159	9650		9650								
520ak	159	9850		9850								
520al	159	10050		10050								
520am	159	10250		10250								
520an	159	10450		10450								
520ao	159	10650		10650								
520ap	159	10850		10850								
520aq	159	11050		11050								
520ar	159	11250		11250								
520as	159	11450		11450								
520at	159	11650		11650								
520au	159	11850		11850								
520av	159	12050		12050								
520aw	159	12250		12250								
520ax	159	12450		12450								
520ay	159	12650		12650								
520az	159	12850		12850								
520ba	159	13050		13050								
520bb	159	13250		13250								
520bc	159	13450		13450								
520bd	159	13650		13650								
520be	159	13850		13850								
520bf	159	14050		14050								
520bg	159	14250		14250								
520bh	159	14450		14450								
520bi	159	14650		14650								
520bj	159	14850		14850								
520bk	159	15050		15050								
520bl	159	15250		15250								
520bm	159	15450		15450								
520bn	159	15650		15650								
520bo	159	15850		15850								
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520ex	159	33250		33250								
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520fa	159	33850		33850	</							