

The following shop drawings by Veolia Water Technologies have been furnished with Bid Op 601-2015.

<b>Bid Op 601-2015 Document Number</b>	<b>Shop Drawing Document &amp; Page Number</b>	<b>Purpose of Drawing for Bid Op 601-2015</b>
2-0102-PDTL-K120	FI-1000, Sheet 1 of 15 (Veolia)	General notes applicable to field Installation drawings.
	FI-1000, Sheet 2 of 15 (Veolia)	Anchor installation details applicable to installing the HRC scraper bridge
	FI-1000, Sheet 3 of 15 (Veolia)	Plan view showing location of HRC scraper bridge and centerline of scum trough connection flange
	FI-1000, Sheet 5 of 15 (Veolia)	Section view showing location of HRC scraper bridge and location of scum trough (refer to scum trough shop drawings for scum trough connection flange elevation centerline)
	FI-1000, Sheet 6 of 15 (Veolia)	Details 6 & 7: Anchorage of the HRC scraper bridge to concrete structure
2-0102-PDTL-K121	as049914 (DBS Manufacturing)	Section A-A: scum trough connection flange elevation centerline  Detail B: Distance of scum trough connection flange face from concrete wall
2-0102-PDTL-K122	FG-01, Sheet 1 of 2 (Fibergrate)	Location plan, sections and isometrics for HRC scraper bridge FRP grating and handrailing
	FG-01, Sheet 2 of 2 (Fibergrate)	Installation and connection details for HRC scraper bridge FRP grating and handrailing
B-0102-PDTS-K128	Installation manual, Pages 1 to 8, 16 (Veolia)	VWT instructions for equipment storage, general installation and installation of the scraper bridge and grating/handrailing.
2-0102-PDTS-K129	Actiflo General Installation Details Bill of Materials (Veolia)	Bill of materials supplied by Veolia Water Technologies

# ACTIFLO™ CLARIFIER

2-0102-PDTL-K120

## PROJECT: WINNIPEG SEWPCC PROJECT No.: 5000214039

### DRAWINGS INDEX

F11000 SHEET 1	TITLE PAGE, DRAWINGS INDEX & GENERAL NOTES
F11000 SHEET 2	ANCHORS TYPICAL – INSTALLATION DETAILS
F11000 SHEET 3 @ 6	CLARIFIER GENERAL VIEWS, SECTIONS & DETAILS
F11000 SHEET 7	MIXERS TYPICAL – INSTALLATION DETAILS
F11000 SHEET 8	TROUGH TYPICAL – INSTALLATION DETAILS
F11000 SHEET 9	SCRAPER TYPICAL – INSTALLATION DETAILS
F11000 SHEET 10	SCRAPER DRIVE MECHANISM – INSTALLATION DETAILS
F11000 SHEET 11	LAMELLA AND SUPPORT TYPICAL – INSTALLATION DETAILS
F11000 SHEET 12	LAMELLA AND SUPPORT TYPICAL – INSTALLATION DETAILS
F11000 SHEET 13	AIR SCOUR SYSTEM – TYPICAL INSTALLATION DETAILS
F11000 SHEET 14	POLYMER TYPICAL – INSTALLATION DETAILS
F11000 SHEET 15	AIR SCOUR GRID SYSTEM (CORNER)– TYPICAL INSTALLATION DETAILS

### GENERAL NOTES:

UNLESS OTHERWISE SPECIFIED, ANY REFERENCE TO "CONTRACTOR", "INSTALLATION CONTRACTOR", "ENGINEER", "CONSULTING ENGINEER" OR "BY OTHERS" INDICATES NOT SUPPLIED BY VEOLIA WATER TECHNOLOGIES CANADA INC. (V.W.T.).

MANHOLES AND ACCESS LADDERS WILL BE SUPPLIED "BY OTHERS".

GRATING AND HANDRAILS AROUND TANKS AND OPENINGS WILL BE SUPPLIED AND INSTALLED BY "INSTALLATION CONTRACTOR".

ALL PIPING AND FITTINGS SUPPLIED AND INSTALLED BY "INSTALLATION CONTRACTOR" SHALL BE FIELD ADJUSTED TO SUIT ACTUAL FIELD MEASUREMENTS AND EQUIPEMENT SUPPLIED BY "V.W.T.".

ALL FASTENERS, HARDWARE, ANCHORS, WILL BE SUPPLIED BY "V.W.T." HOWEVER, SOME ITEMS ARE NOT LISTED ON THE BILL OF MATERIAL SINCE THEY ARE PRE-ASSEMBLED PRIOR TO SHIPPING.

ALL ANCHORS AND FASTENERS WILL BE STAINLESS STEEL. ALL HEX-NUTS WILL BE NYLON INSERT STOP (NYLOCK) TYPE. APPLY ANTI-SEIZE COMPOUND TO ALL CONNECTIONS.



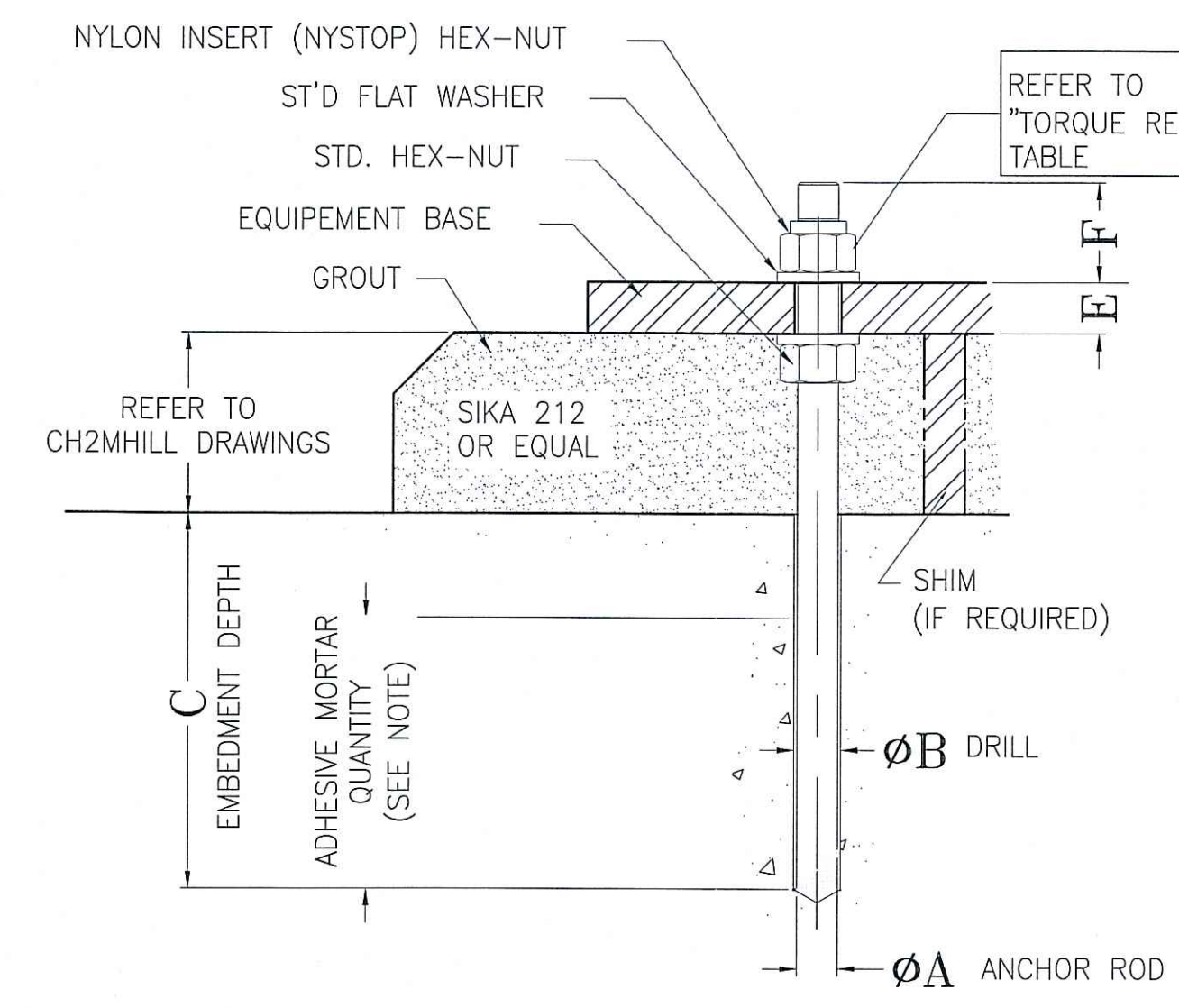
STD: "D" 22x34	REF: MASTER REV.1	BAR = 1" AT PLOT SCALE	REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN	<small>CONFIDENTIALITY AND INTELLECTUAL PROPERTY NOTICE ALL INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF VEOLIA WATER TECHNOLOGIES CANADA INC. AND IS PROTECTED BY ALL APPLICABLE LAWS, INCLUDING BUT NOT LIMITED TO COPYRIGHT AND OTHER INTELLECTUAL PROPERTY LAWS. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO V.W.T. AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE. THEY MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED AND NO OTHER LICENSE IS GRANTED OTHERWISE BY THE SUBMISSION OF THIS DOCUMENT. THEY ARE CONFIDENTIAL AND PRIVILEGED INFORMATION OF V.W.T. AND THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, REMITTED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF V.W.T. V.W.T. ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANY OTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN A MANNER DETRIMENTAL TO THE INTEREST OF V.W.T. ALL COPYRIGHT, PATENT AND OTHER INTELLECTUAL PROPERTY RIGHTS ARE RESERVED. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</small>	DESIGNER	DATE	TITLE
											S.M.	2009-05-08	ACTIFLO CLARIFIER TITLE PAGE / GENERAL NOTES
											CHECKER	DATE	CLIENT
											N/A	N/A	WINNIPEG SEWPCC
ENGINEER	DATE												
N/A	N/A												
MANAGER	DATE												
N/A	N/A												
SCALE:													
5000214039 – F11000	DRAWING	INTERNAL	SHEET										
	GEN	1	OF 15										
			REV										
			3										

1 Jul 08, 2015 7:31:40 - W:\2014\5000214039 WINNIPEG SEWPCC\08) Dassins Execution\5- F11-5000214039 F11000\_PAGE TITLE\_3.dwg - Corioff

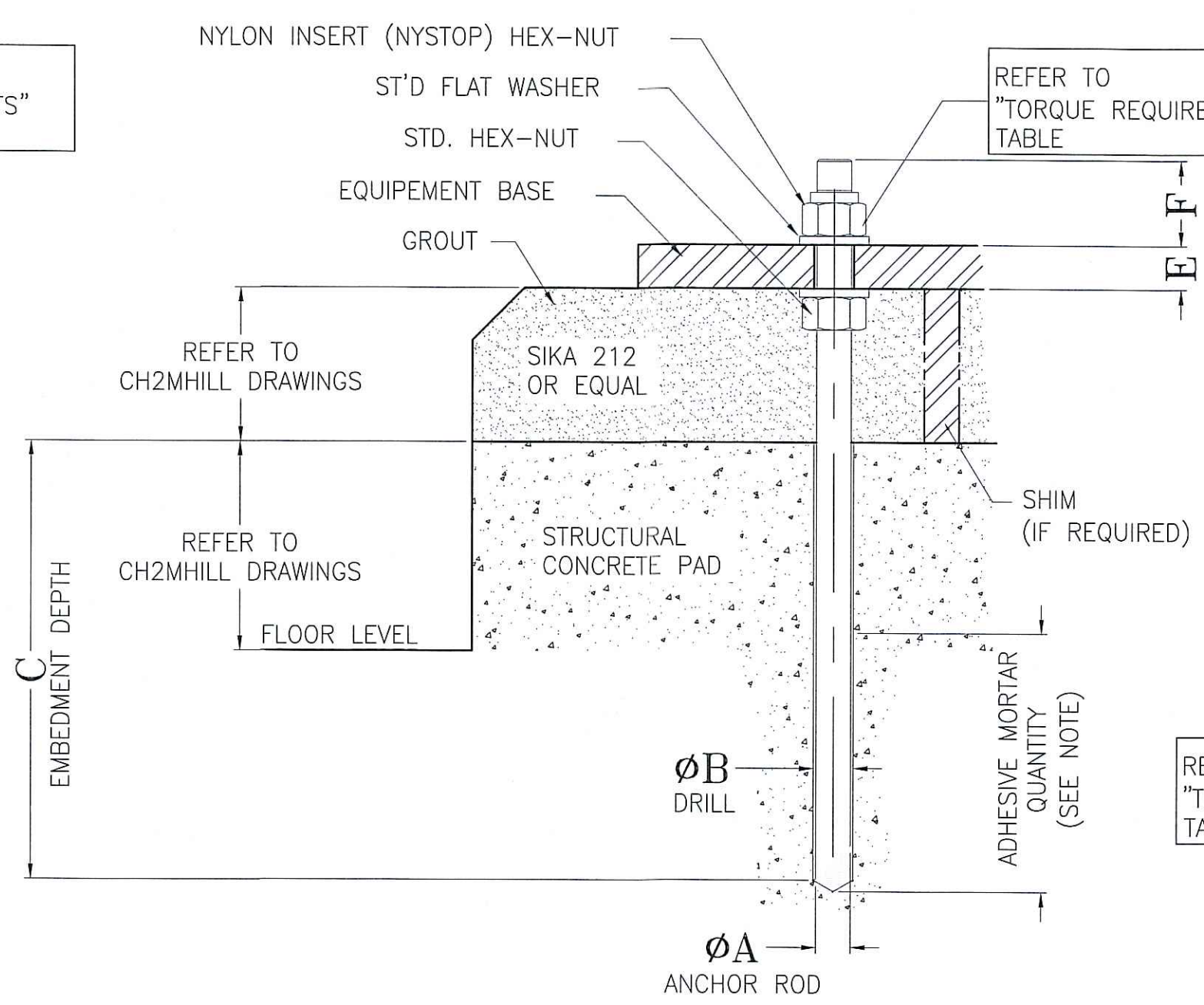
JUL 08, 2015 7:36:10 - W:\2014\5000214039 WINNIPEG SEWPCC\08) Desains Execution\5- F1-2-5000214039 F11000 ANCHORS\_3.dwg - Calsoft

2-0102-PDTL-K120

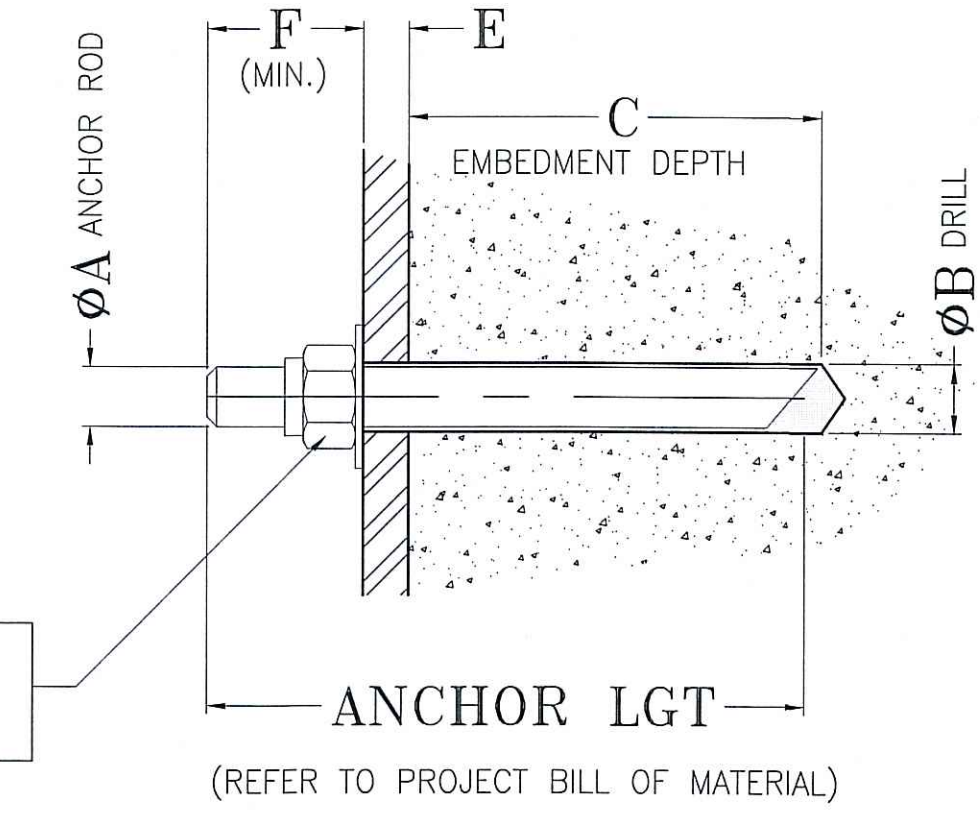
BOLTS DIAM.	TORQUE VALUE	
	Nm	FT-LBS
3/8"	20	15
1/2"	40	30
5/8"	80	60
3/4"	136	100
7/8"	169	125
1"	203	150
1 1/4"	271	200



DETAIL 1 (WITHOUT CONCRETE PAD)



DETAIL 2 (WITH STRUCTURAL CONCRETE PAD)



DETAIL 3 (WALL INSTALLATION)

HIT HY200 SPECIFICATIONS

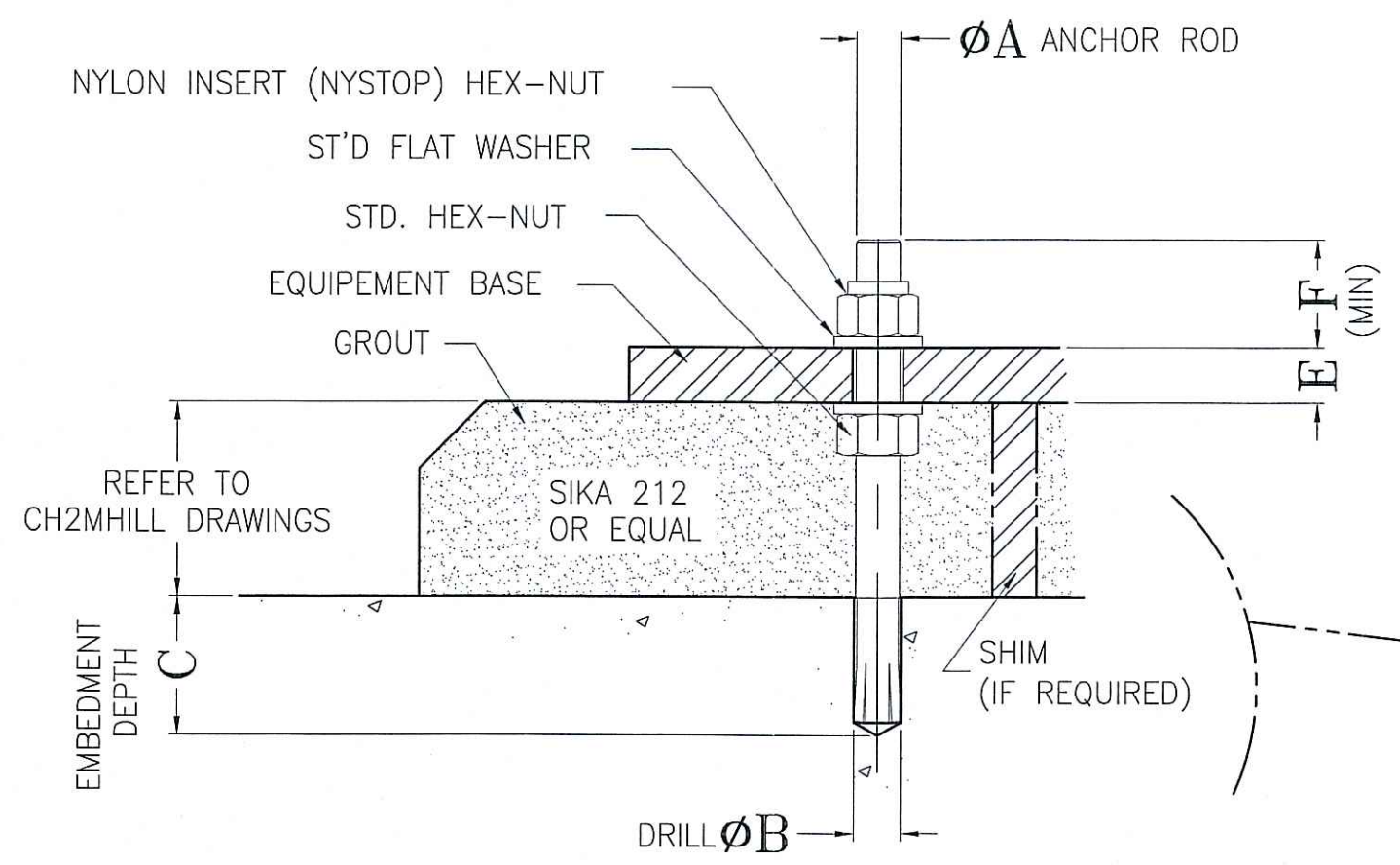
ANCHORS ø "A"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/4"
DRILL ø "B"	7/16"	9/16"	11/16"	13/16"	15/16"	1 1/16"	1 1/2"
STANDARD EMBEDMENT "C" (mm)	86	114	143	170	200	229	286
BASE EQP'T "E"							
"F" (mm)	20	25	32	39	44	50	62

ANCHORS HILTI TYPE (HIT HY200)

FOR FURTHER INFORMATION, REFER TO SUPPLIER INSTALLATION MANUAL

NOTES:  
DRILL HOLES USING A CARBIDE TIPPED BIT, CLEAN THE HOLES THOROUGHLY PRIOR TO INSTALLATION OF THE ADHESIVE MORTAR, FILL THE HOLES APPROXIMATELY 2/3 WAY WITH ADHESIVE MORTAR.

MAKE SURE THERE ARE NO REINFORCING BAR OR WIRE MESH UNDER HOLE LOCATIONS BEFORE DRILLING.

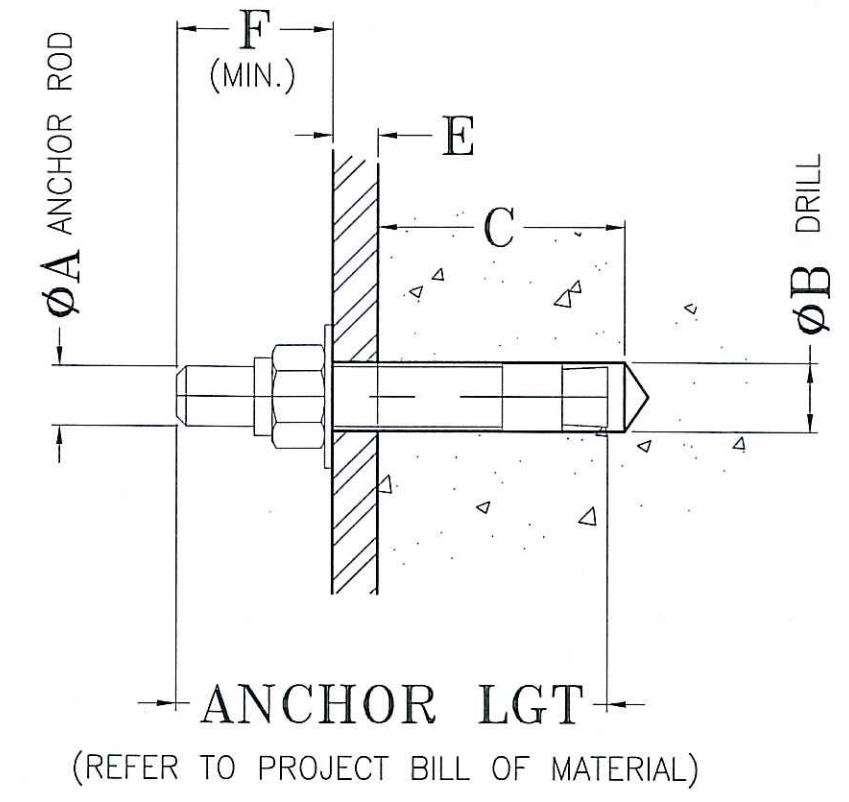
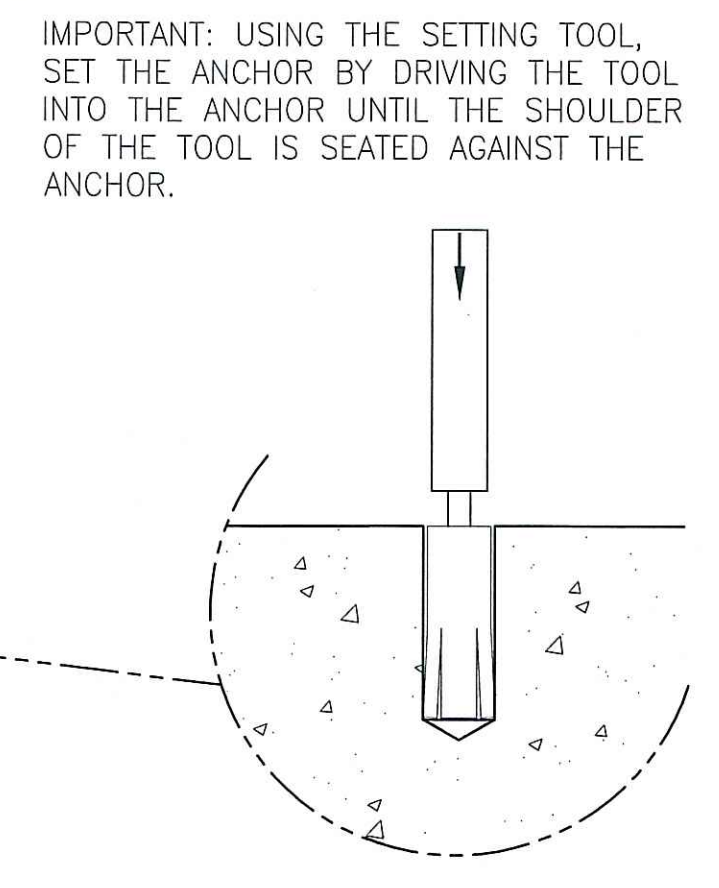


DETAIL 4 (RAWL DROP-IN TYPE)

NOTES:  
DRILL HOLES USING A CARBIDE TIPPED BIT, CLEAN THE HOLES THOROUGHLY PRIOR TO INSTALLATION OF THE ANCHOR.  
MAKE SURE THERE ARE NO REINFORCING BAR OR WIRE MESH UNDER HOLE LOCATIONS BEFORE DRILLING.

ANCHOR ø "A"	1/4"	3/8"	1/2"	5/8"	3/4"
DRILL ø "B"	3/8"	1/2"	5/8"	7/8"	1"
EMBEDMENT "C" (mm)	25	40	50	64	80
EQP'T BASE "E"					
"F" (mm)	20	20	25	32	40

FOR FURTHER INFORMATION, REFER TO SUPPLIER INSTALLATION MANUAL



DETAIL 5 (MECHANICAL TYPE ANCHORS)

FOR FURTHER INFORMATION, REFER TO SUPPLIER INSTALLATION MANUAL

NOTES:  
DRILL HOLES USING A CARBIDE TIPPED BIT, CLEAN THE HOLES THOROUGHLY PRIOR TO INSTALLATION OF THE ANCHOR.  
MAKE SURE THERE ARE NO REINFORCING BAR OR WIRE MESH UNDER HOLE LOCATIONS BEFORE DRILLING.

RAWL (POWER-STUD) SPECIFICATIONS

ANCHOR ø "A"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
DRILL ø "B"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
MIN. EMBEDMENT "C" (mm)	51	64	89	102	121	136	152
FIXTURE "E"							
"F" MIN. (mm)	15	20	24	26	32	35	40

HILTI KWIK-CON II+ TYPE SPECIFICATIONS

ANCHOR DIAM. (in.)	3/16"	1/4"
ANCHOR LENGTH "D+E" (in.)	1 1/4"	1 1/4"
DRILL ø "B" (in.)	.1902**	.2402**
EMBEDMENT "D" (mm.)	25 MIN. 45 MAX.	25 MIN. 45 MAX.
"F" MIN. (mm)	13	13
FIXTURE "E"		
TOTAL HOLE DEPTH "C" (mm.)	D+F	D+F

\*\* USE HILTI KSC BITS FOR MAXIMUM FASTENING STRENGTH, USE OF AN ALTERNATIVE BITS IS NOT RECOMMENDED.



REV	DESCRIPTION	DATE	REV'D	CHKD	APV'D	ECN
3	FOR APPROVAL III	2015-06-08	F.C.	D.L.	D.L.	N/A
2	FOR APPROVAL II	2015-04-15	S.M.		D.L.	N/A
1	FOR APPROVAL	2014-09-09	F.C.	D.L.	D.L.	N/A

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DESIGNER	DATE	TITLE
F.C.	2014-09-16	ANCHORS TYPICAL INSTALLATION DETAILS
CHECKER	DATE	CLIENT
N/A	N/A	WINNIPEG SEWPCC
ENGINEER	DATE	
N/A	N/A	

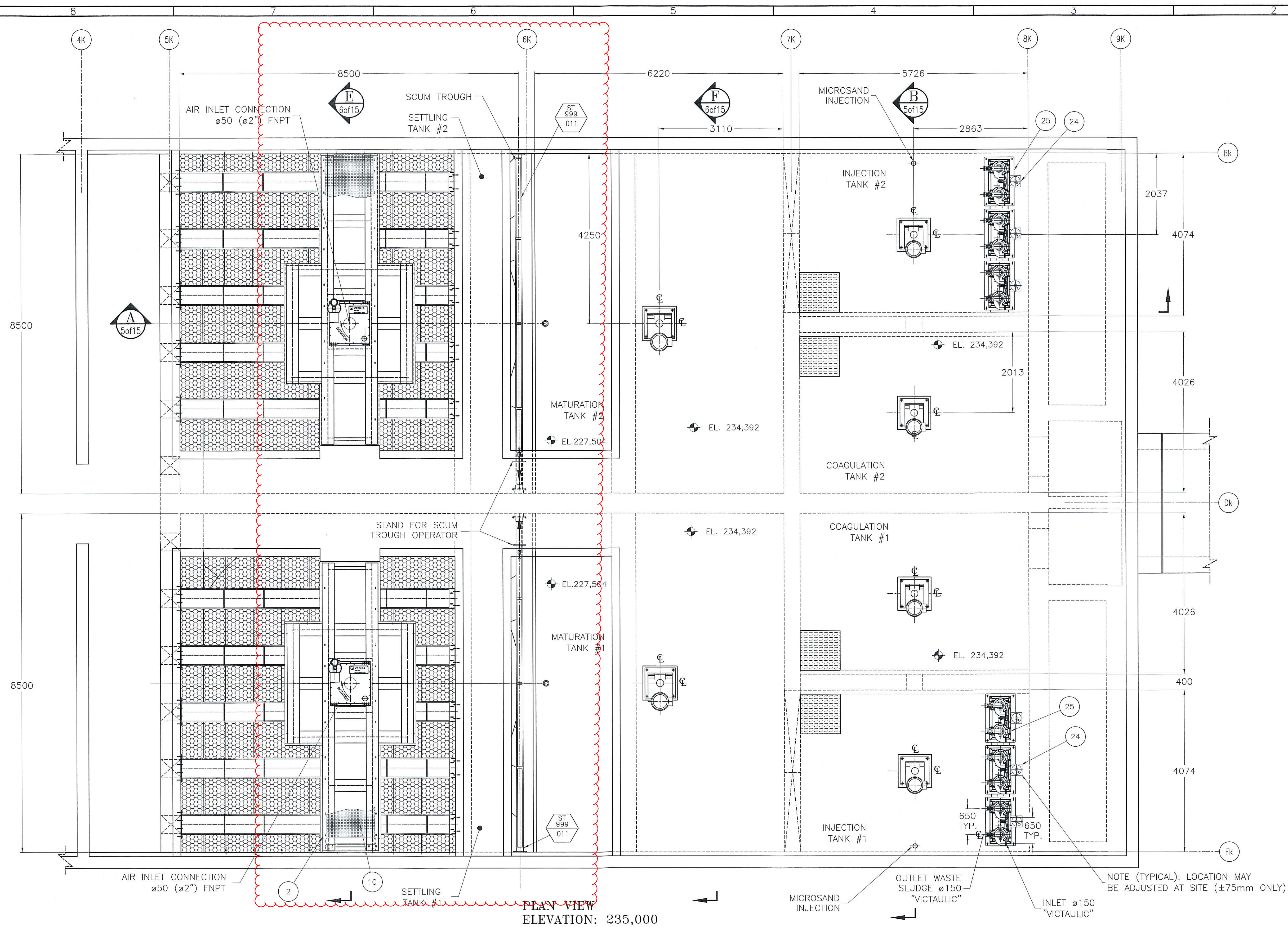
**VEOLIA**  
VEOLIA WATER TECHNOLOGIES CANADA INC. 4105 Sartelon, Saint-Laurent, Qc, Canada. Tel: (514) 334-7230

PROJECT	DRAWING	INTERNAL	SHEET	REV
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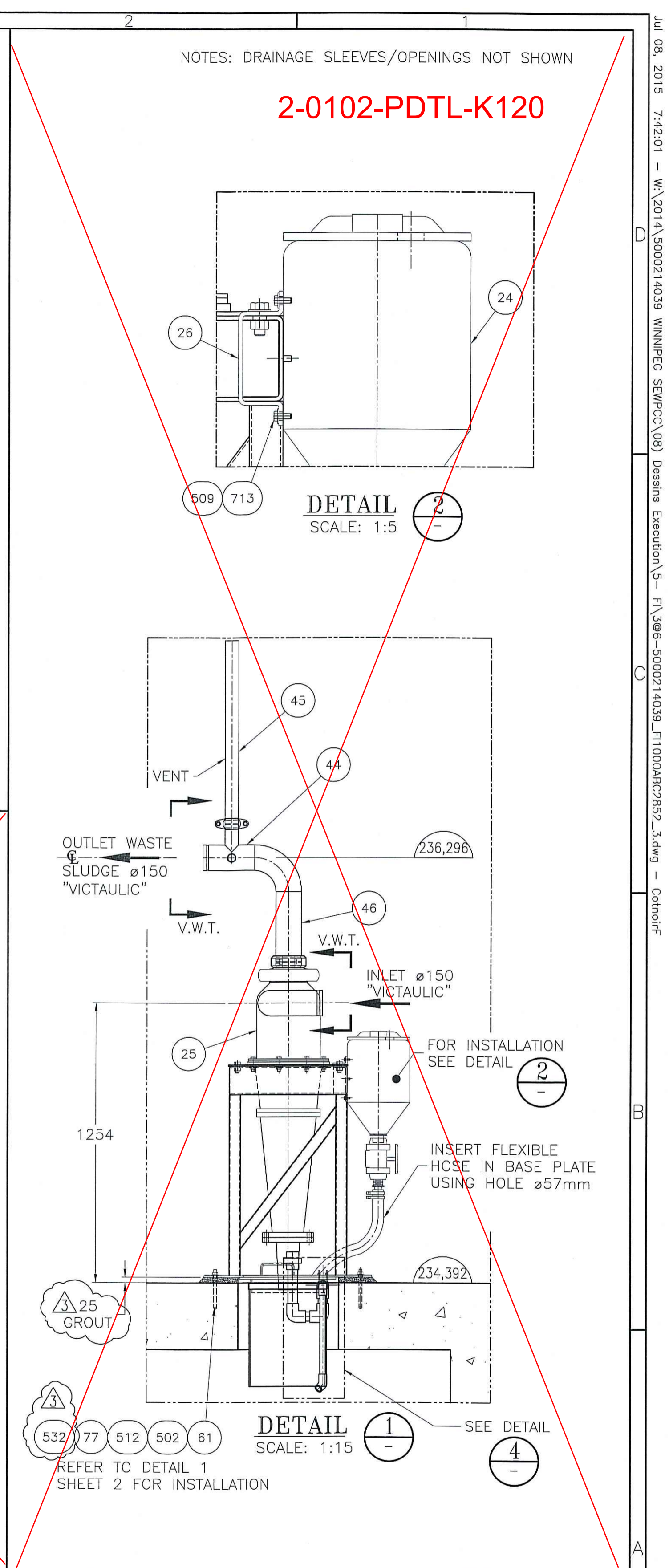
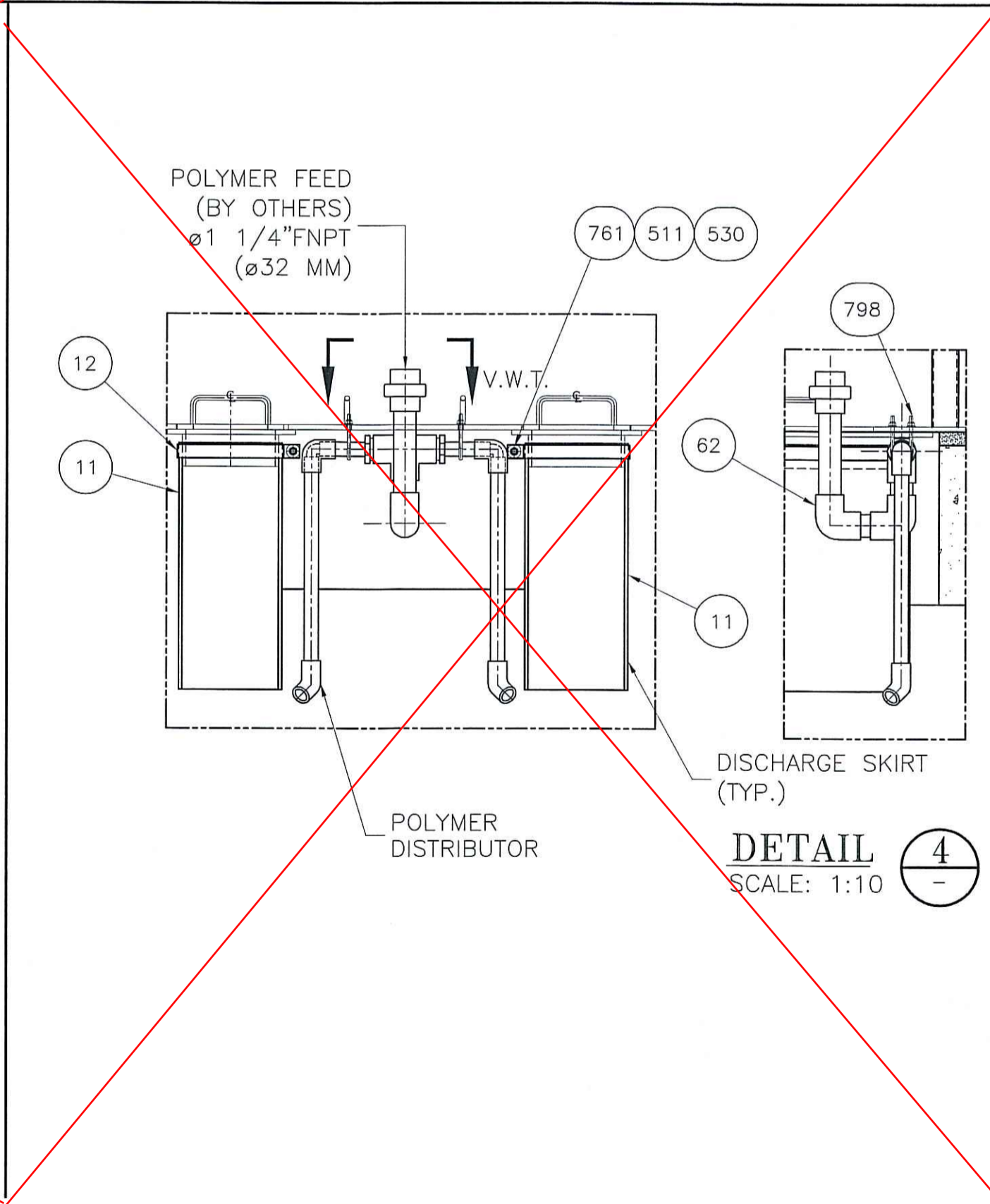
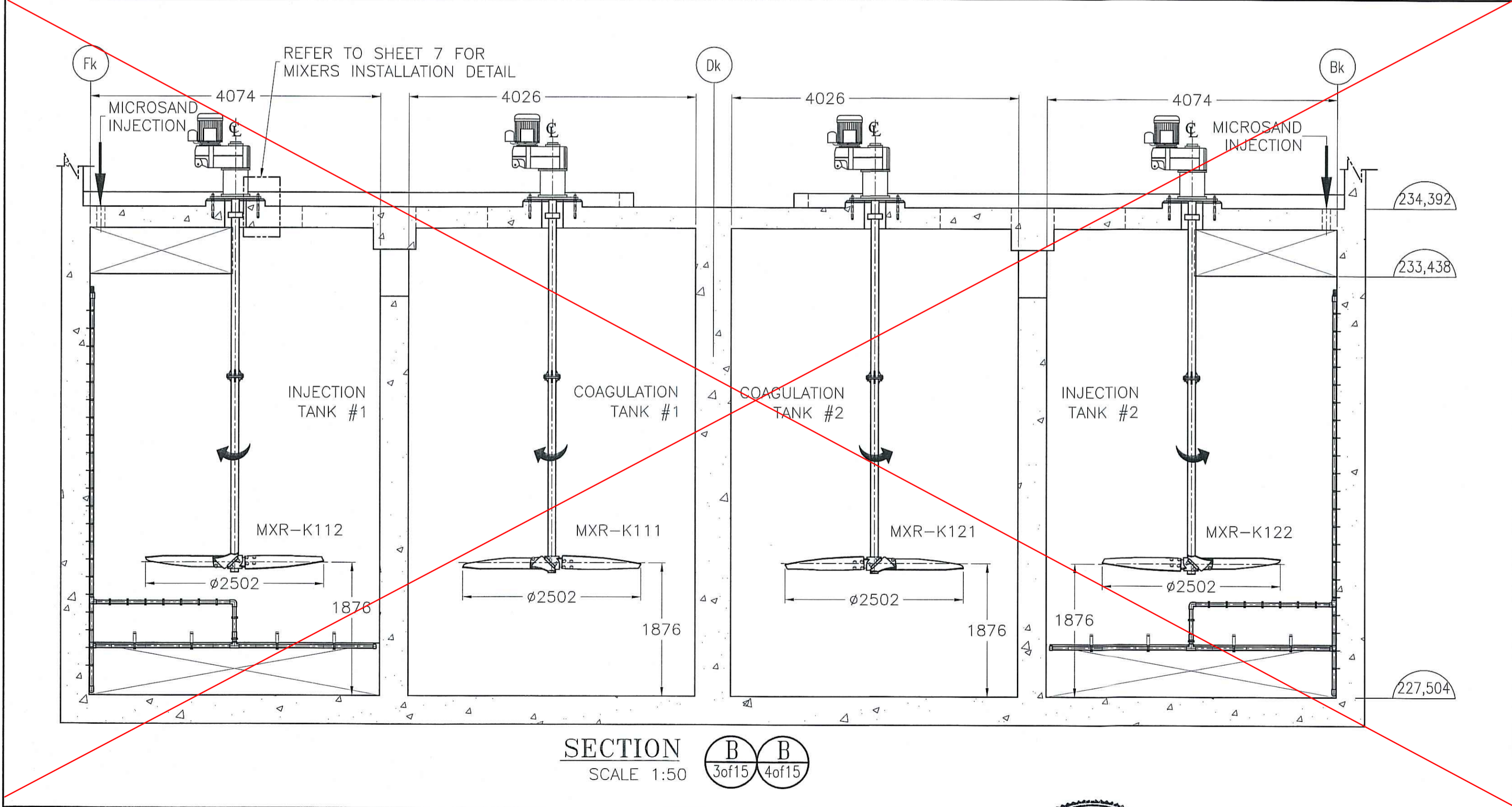
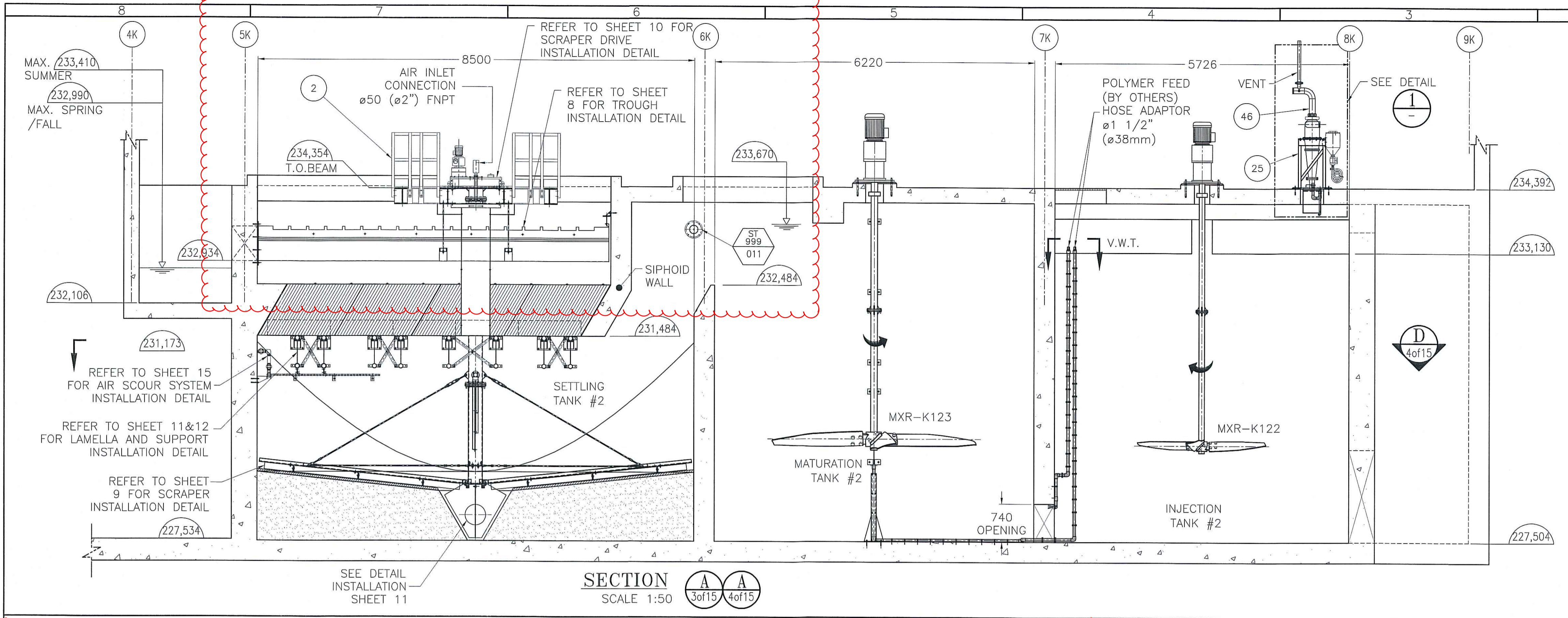
NOTES: DRAINAGE SLEEVES/OPENINGS NOT SHOWN

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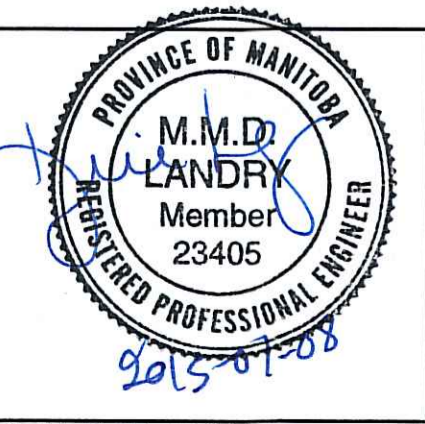


NOTE (TYPICAL): LOCATION MAY BE ADJUSTED AT SITE (±75mm ONLY)

STD: "D" 22x34 REF:		BAR = 1" AT PLOT SCALE		CONFIDENTIALITY AND INTELLECTUAL PROPERTY NOTICE ALL INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF VEOLIA WATER TECHNOLOGIES CANADA INC. AND IS PROTECTED BY ALL APPLICABLE LAWS, INCLUDING BUT NOT LIMITED TO COPYRIGHT AND OTHER INTELLECTUAL PROPERTY LAWS. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO VEOLIA AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE. THEY MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED AND NO IMPLICIT LICENSE IS GRANTED OTHERWISE BY THE SUBMISSION OF THIS DOCUMENT. THEY ARE CONFIDENTIAL AND PRIVILEGED INFORMATION OF VEOLIA, AND THEY MUST NOT BE DISCLOSED, REPRODUCED, LOANED, REMITTED OR USED IN ANY OTHER MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF VEOLIA. VEOLIA ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANOTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN A MANNER DETRIMENTAL TO THE INTERESTS OF VEOLIA. ALL COPYRIGHT, PATENT AND OTHER INTELLECTUAL PROPERTY RIGHTS ARE RESERVED. ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.		DESIGNER F.C. CHECKER ENGINEER MANAGER N/A SCALE: 1:50	DATE 2014-08-28 DATE DATE DATE N/A	TITLE ACTIFLO GENERAL INSTALLATION DRAWING PLAN VIEW CLIENT WINNIPEG SEWPCC  VEOLIA WATER TECHNOLOGIES CANADA INC. 4195 Sarneton, Saint-Laurent, Qc, Canada. Tel. (514) 334-7230 PROJECT DRAWING 5000214039 - F11000 INTERNAL ACB2852 SHEET 3 OF 15 REV 3
3	FOR APPROVAL III	2015-06-08	F.C.	D.L.	D.L.	N/A		
2	FOR APPROVAL II	2015-04-13	F.C.					
1	FOR APPROVAL	2014-09-09	F.C.	D.L.	D.L.	N/A		
REV	DESCRIPTION	DATE	DWN	CHKD	APVD	ECN		



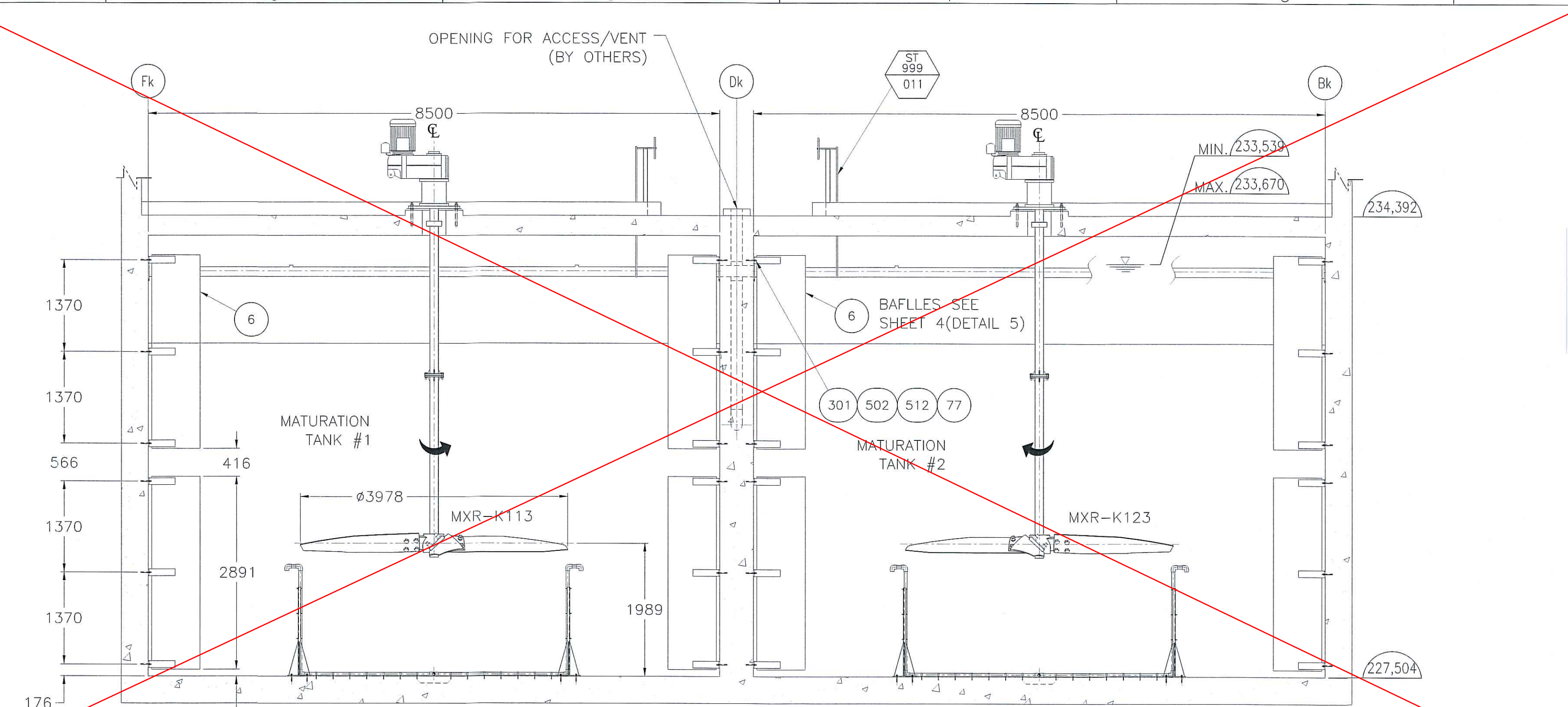
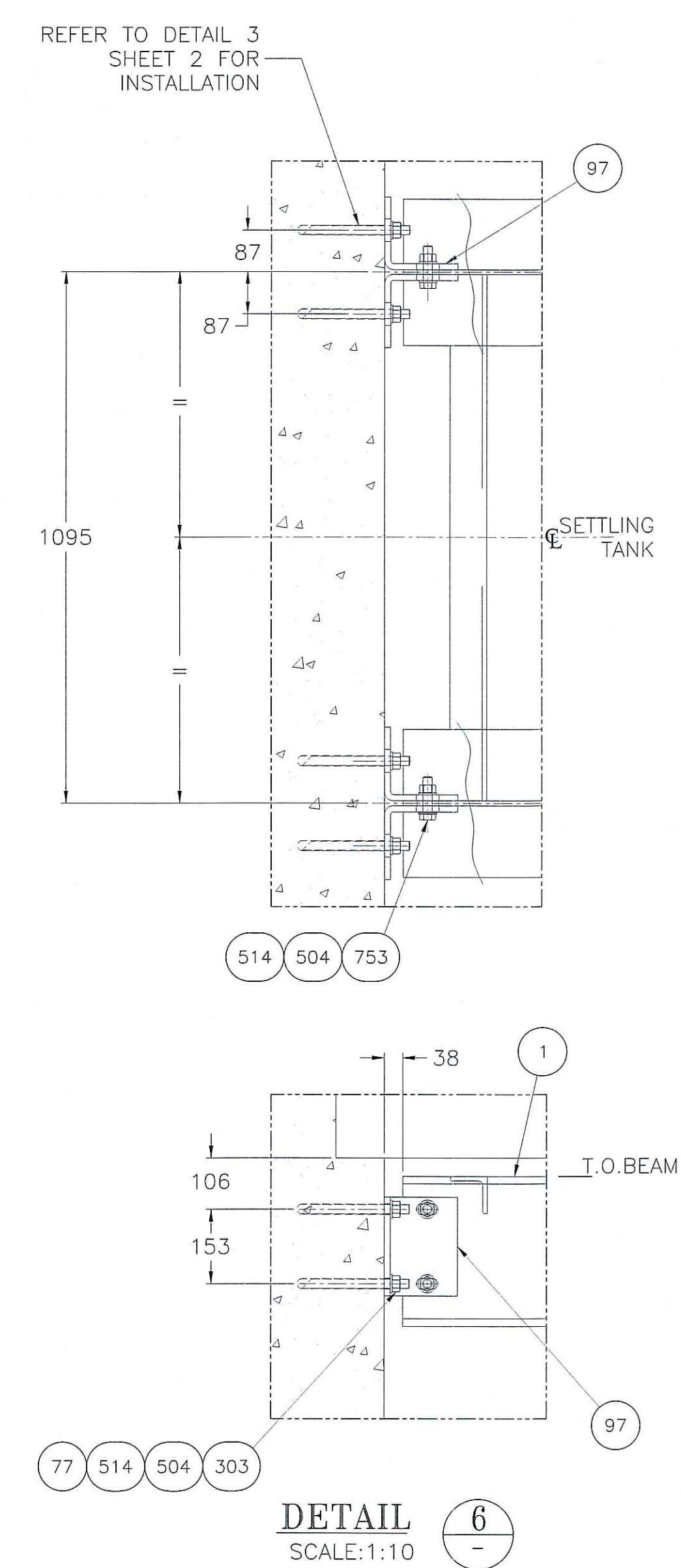
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<p>3 FOR APPROVAL III 2015-06-08 F.C. D.L. D.L. N/A</p> <p>2 FOR APPROVAL II 2015-04-13 F.C. S.M. D.L. N/A</p> <p>1 FOR APPROVAL 2014-09-09 F.C. S.M. D.L. N/A</p>	<p>DATE: 2015-06-08</p> <p>DWN: F.C.</p> <p>CHKD: D.L.</p> <p>APVD: D.L.</p> <p>ECN: N/A</p>	<p>REV: 3</p> <p>DESCRIPTION: FOR APPROVAL III</p>



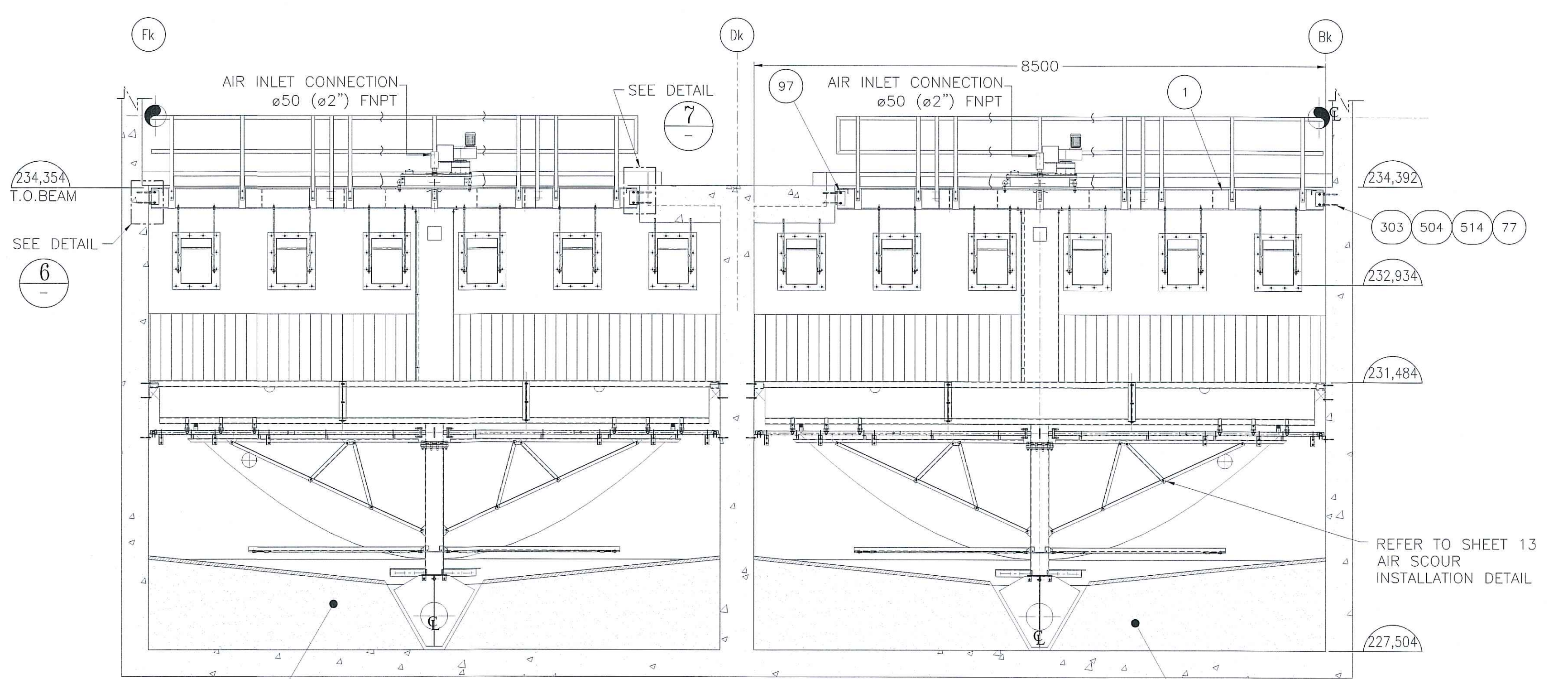
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NOTES: DRAINAGE SLEEVES/OPENINGS NOT SHOWN

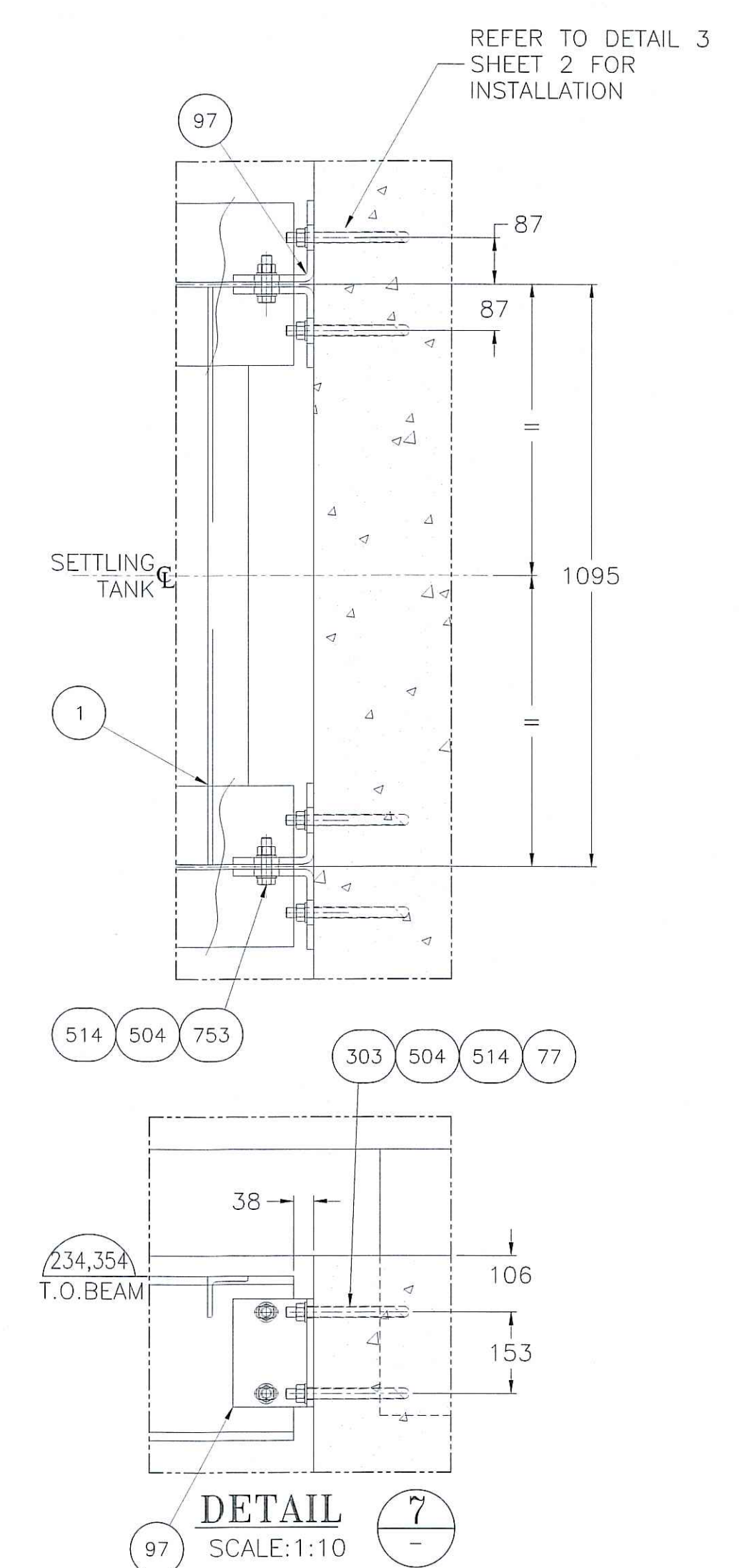
2-0102-PDTL-K120



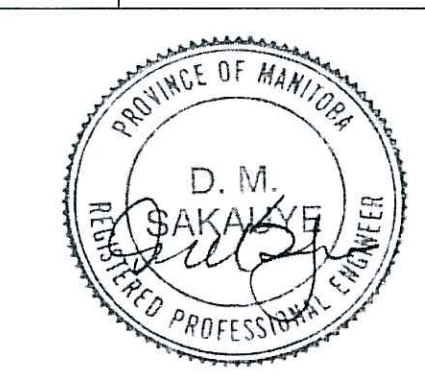
SECTION F F SCALE 1:50 3of15 4of15



SECTION E E SCALE 1:50 3of15 4of15



exp Services inc.  
 1: +1.905.695.3217 | F: +1.905.695.0167  
 220 Commerce Valley Drive West, suite 500  
 Markham, ON L3T 0A8  
 CANADA  
 www.exp.com



BAR = 1" AT PLOT SCALE

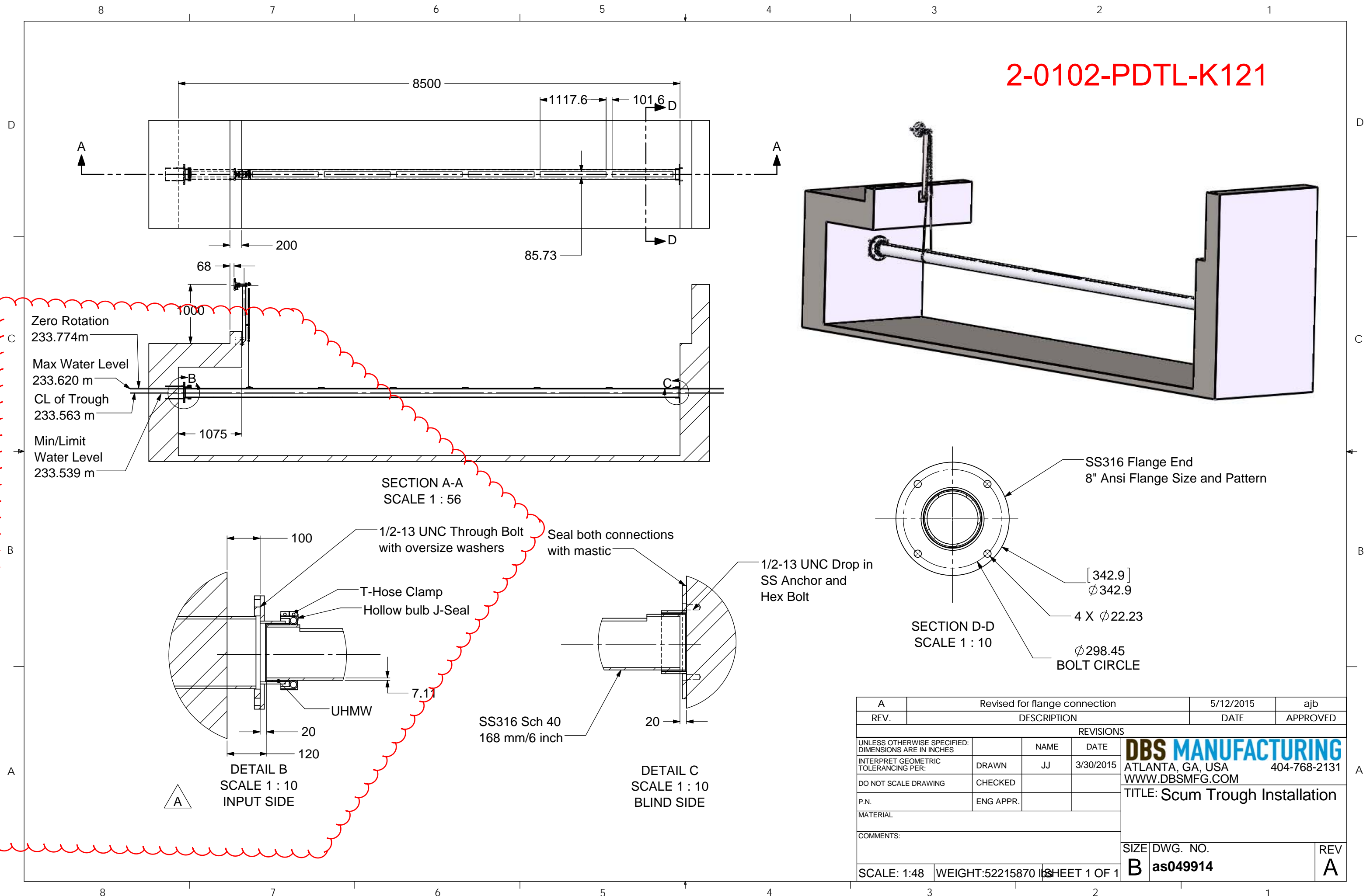
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2	FOR APPROVAL II	2015-04-13	F.C.			
1	FOR APPROVAL	2014-09-09	F.C.	S.M.	D.L.	N/A

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DESIGNER	DATE	TITLE
F.C.	2014-08-28	ACTIFLO GENERAL INSTALLATION DRAWING SECTIONS
CHECKER	DATE	
ENGINEER	DATE	
MANAGER	DATE	
N/A	N/A	
SCALE:	1:50	

PROJECT	DRAWING	INTERNAL	SHEET	REV
5000214039 - F11000	ACB2852	6 OF 15	3	

# 2-0102-PDTL-K121



REV.	DESCRIPTION	DATE	APPROVED
A	Revised for flange connection	5/12/2015	ajb
REVISIONS			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES		NAME	DATE
INTERPRET GEOMETRIC TOLERANCING PER:	DRAWN	JJ	3/30/2015
DO NOT SCALE DRAWING	CHECKED		
P.N.	ENG APPR.		
MATERIAL			
COMMENTS:			
SCALE: 1:48	WEIGHT: 52215870 lbs	SHEET 1 OF 1	REV A

**DBS MANUFACTURING**  
 ATLANTA, GA, USA 404-768-2131  
 WWW.DBSMFG.COM

TITLE: Scum Trough Installation

SIZE DWG. NO. REV  
**B** as049914 **A**

FOR DETAILS SEE:  
DWG. FG-01 (2 of 2)

BILL OF MATERIALS					
ITEM	PART NUMBER	ITEM QTY	TOTAL QTY	DESCRIPTION	MASS
1	264606-P-01	3	6	1-1/2" THK. MOLDED GRATING	20.2 kg
2	264606-P-02	2	4	1-1/2" THK. MOLDED GRATING	18.7 kg
3	264606-P-03	1	2	1-1/2" THK. MOLDED GRATING	16.3 kg
4	264606-P-04	2	4	1-1/2" THK. MOLDED GRATING	18.7 kg
5	264606-P-05	1	2	1-1/2" THK. MOLDED GRATING	16.0 kg
7	5101000-K1	8	16	2 1/8 SQ x3/16 TUBE	.1 kg
8	5102000-08	16	16	SQ TUBE 1 3/4x1/8	.1 kg
9	734250	44	88	M-Clip HDC 316 SS	.0 kg
10	754210-AS	32	64	SS HEX BOLT 1/4-20 UNC - 0.75	.0 kg
11	754260-AS	44	88	SS HEX BOLT 1/4-20 UNC - 2	.0 kg
12	784550-AS	32	64	SS NYLOCK NUT 1/4-20	.0 kg
13	785150-AS	64	128	SS FLAT WASHER 1/4	.0 kg
14	790585-AS	64	64	SS Regular Blind Rivet -In	.0 kg
15	HR-01	1	2	FRP GUARDRAIL	17.8 kg
16	HR-02	2	4	FRP GUARDRAIL	19.8 kg
17	HR-03	2	4	FRP GUARDRAIL	10.1 kg
18	HR-04	1	2	FRP GUARDRAIL	12.2 kg
19	HR-05	2	4	FRP GUARDRAIL	10.1 kg
20	HR-06	1	2	FRP GUARDRAIL	17.8 kg
21	HR-07	1	2	FRP GUARDRAIL	12.2 kg

**NOTES:**

DESIGN NOTES:

- Live Load:  
Uniform - 100 p.s.f. (4.8 kPa)  
Concentrated: N/A
- Minimum Structural Safety Factors - Live Loads:  
- Bending Stress: 3.0  
- Shear Stress: 3.0  
- Bearing Stress: 3.0
- Allowable Deflections:  
- Grating, L/D < 180 or 1/4" (6mm)  
- Structural Shapes, L/D = 180
- Loads on Guards as per The National Building Code of Canada 2010, Section 3.8.3.2:  
- 1.0 kN horizontal load applied inward or outward at any point at the minimum required height of the guard  
- 0.5 kN horizontal load applied inward or outward on elements within the guard, including solid panels and pickets  
- 1.5 kN/m evenly distributed vertical load applied at the top of the guard  
- the above noted loads on guards are not considered to act simultaneously.



**GENERAL NOTES:**

All M-2 Grating Hold Down Clips to be 316 S.S., 4-6 H.D.C.'s per grating piece. All cut edges to be Beze Sealed prior to shipping.

Some field fabrication may be required, all field cut edges to be Sealed using supplied seal kits. Cut Grating may have open stub bars.

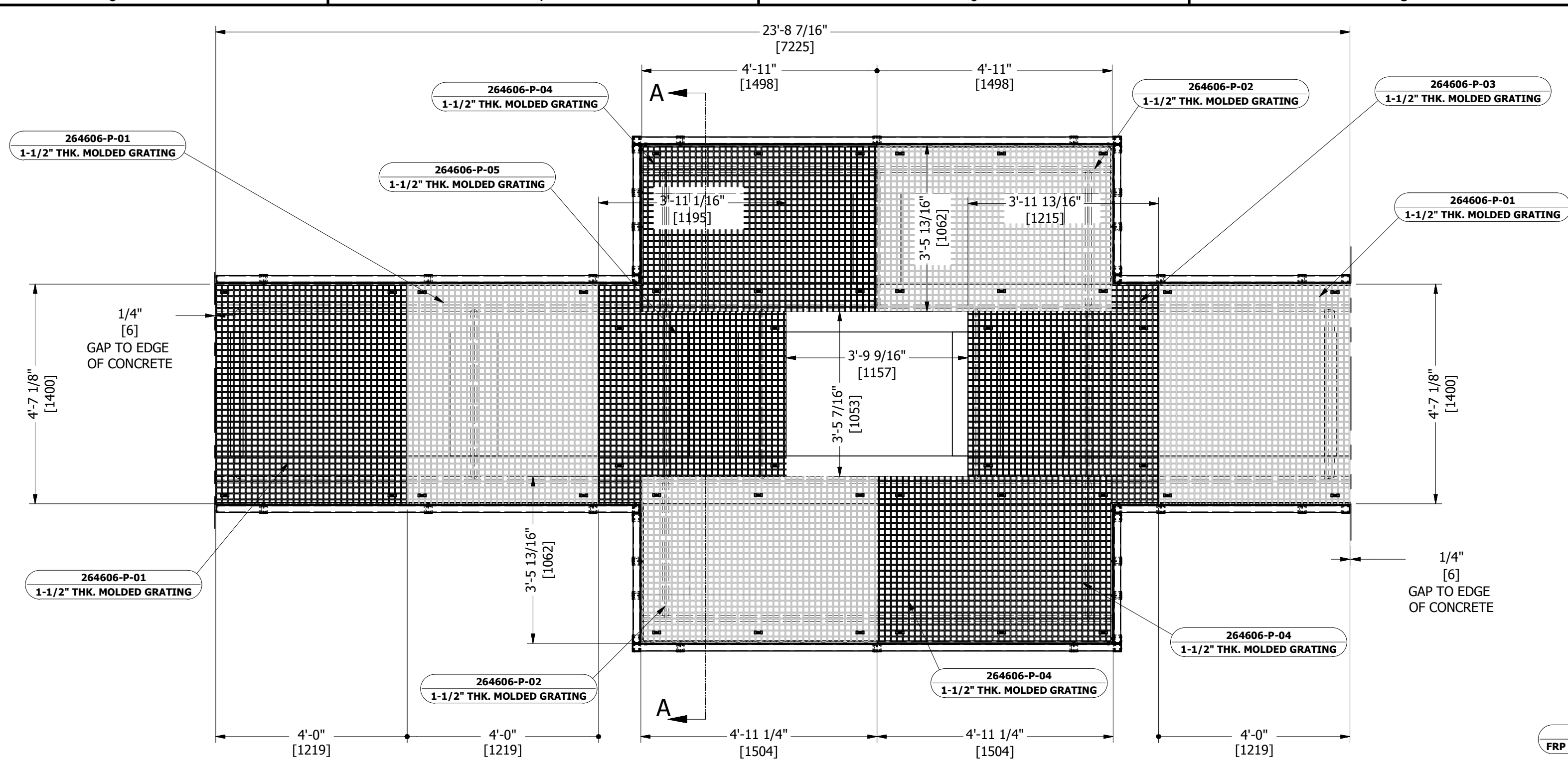
Span for 1 1/2" Sq Mesh Grating is Bi-Directional.

All F.R.P. members shall be fabricated by FIBERGRATE into subassemblies to facilitate field erection. The F.R.P. walkways, handrails, stringers shall be shop fabricated and shop assembled into the largest practical size suitable for transportation as determined by FIBERGRATE.

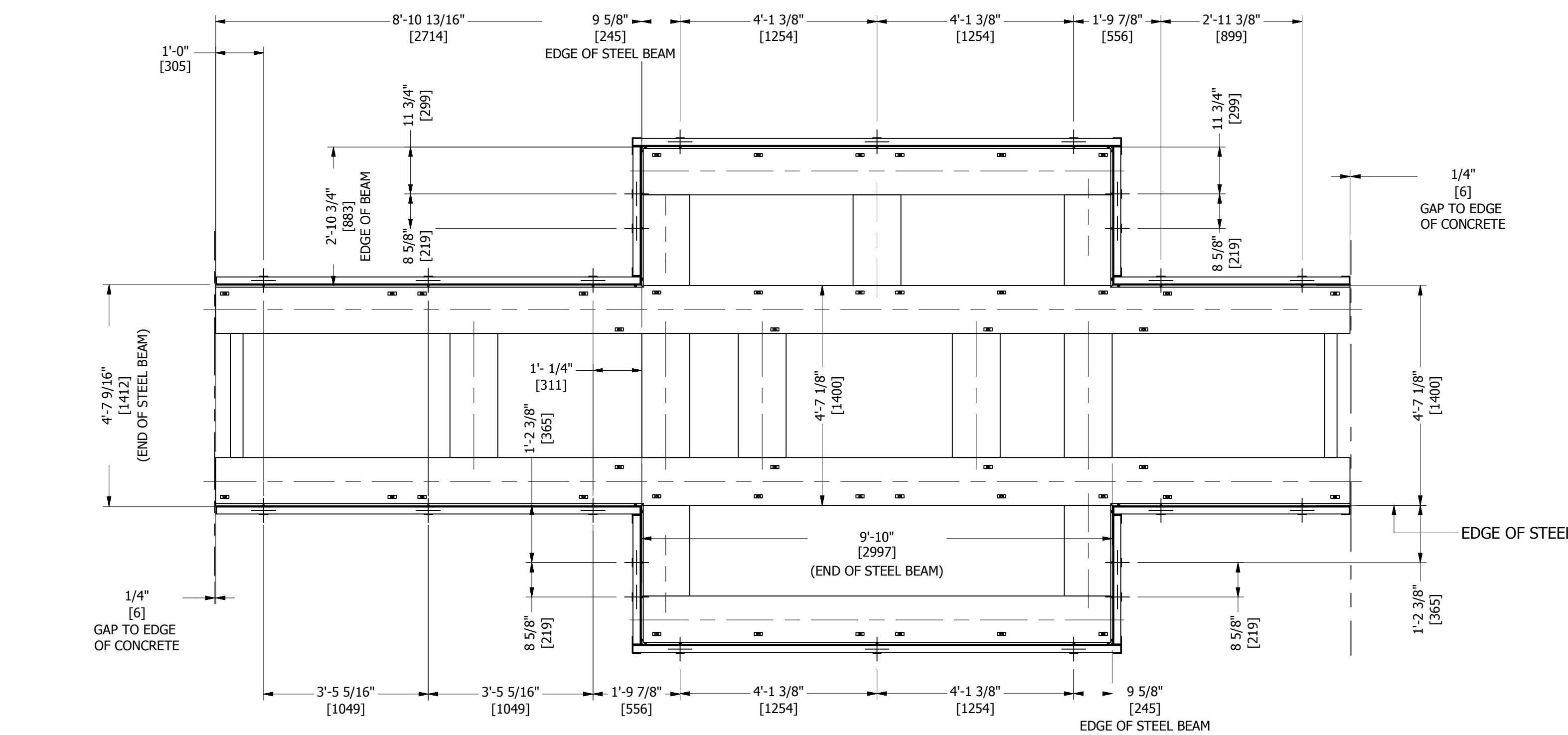
It shall be the customer's responsibility to ensure proper fit-up of F.R.P. assemblies. This includes VERIFICATION OF AS-BUILT CONDITIONS. In case of concrete misalignment, incorrectly placed or missing embeds, the customer shall modify the F.R.P. subassemblies and/or provide the required anchorages.

Cutting, fitting, and placement: perform cutting, drilling, and fitting required for installation of F.R.P. fabrications. Set F.R.P. fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

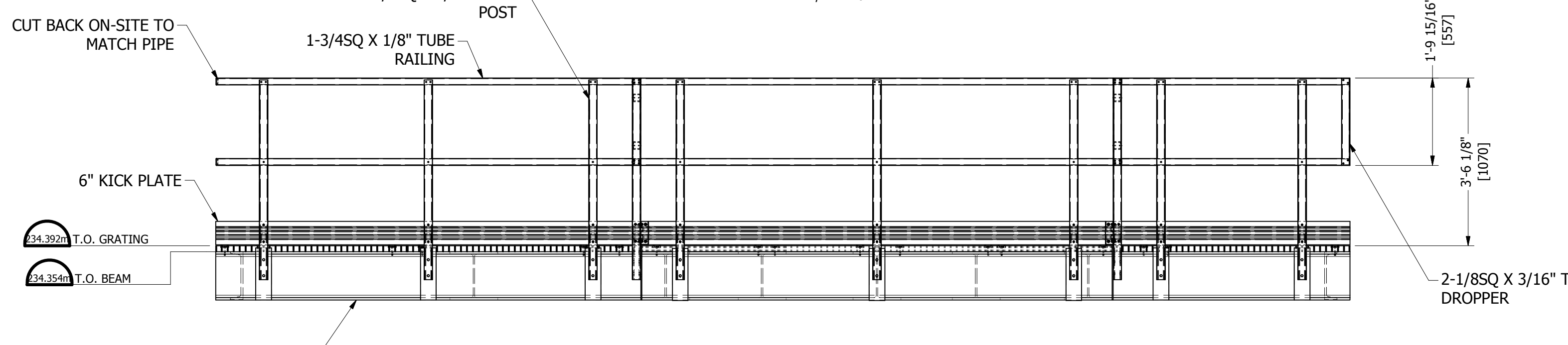
All dimensions to be VERIFIED BY CUSTOMER.



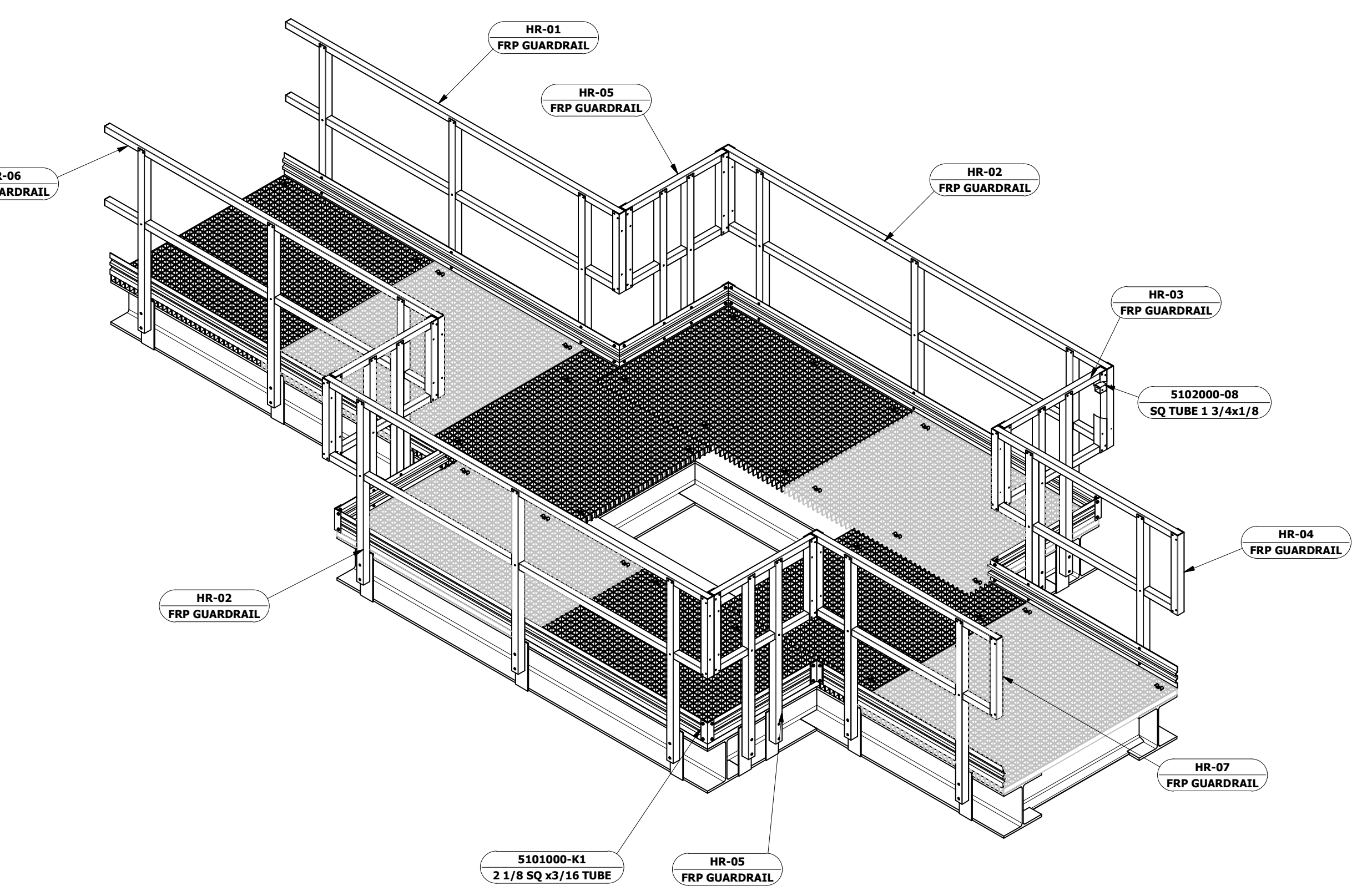
PLAN VIEW  
(SUPPLY QUANTITY OF 2)  
1/2"=1'-0"



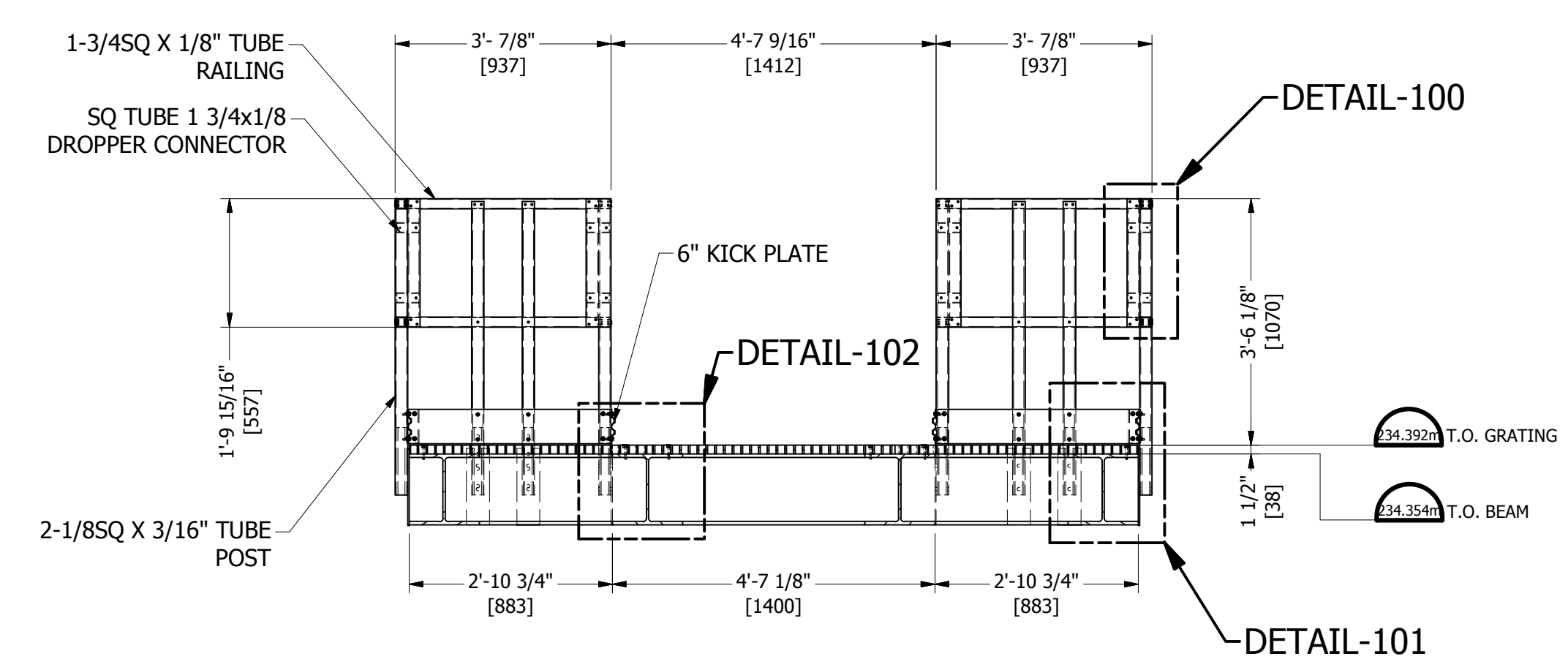
PLAN VIEW (RAILING LAYOUT)  
1/2"=1'-0"



ELEVATION VIEW  
(SUPPLY QUANTITY OF 2)  
1/2"=1'-0"



ISOMETRIC VIEW  
(SUPPLY QUANTITY OF 2)  
1/2"=1'-0"



SECTION A-A  
1/2"=1'-0"

**FOR APPROVAL ONLY**

REV	DESCRIPTION	DATE	DRAWN	CSG	CHK
3	ISSUED FOR APPROVAL	25/02/2015	JV	MV	
2	ISSUED FOR APPROVAL	18/06/2015	JV	MV	
1	ISSUED FOR APPROVAL	14/05/2015	JV	MV	
0	ISSUED FOR APPROVAL	28/04/2015	JV	MV	

**SCALE VERIFICATION:**

BAR ON ORIGINAL SIZE DRAWING IS 1" LONG, IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

**SCALE:** 1/2" = 1'-0"

**DATE:** 28/04/2015

**PROJECT NAME & ADDRESS:** VEOLIA WATER TECHNOLOGIES CANADA INC. 4105 RUE GARTELON SAINT-LAURENT QC H4S2B3

**CUSTOMER:** VEOLIA WATER TECHNOLOGIES CANADA INC. 5000570 HD 05000

**QUANTITY:** 28/04/2015

**SCALE:** AS NOTED

**PROJECT COORDINATOR:** MV

**DATE:** 28/04/2015

**STRUCTURAL DESIGNER:** JV

**PROJECT COORDINATOR:** MV

**NO.:** 403811

**SCALE:** AS NOTED

**NO.:** FG-01

**REV.:** 1 OF 2



NOTES:

- DESIGN NOTES:
1. Live Load:  
Uniform - 100 p.s.f. (4.8 kPa)  
Concentrated: N/A
  2. Minimum Structural Safety Factors - Live Loads  
- Bending Stress: 3.0  
- Shear Stress: 3.0  
- Bearing Stress: 3.0
  3. Allowable Deflections:  
- Grating, L/D < 180 or 1/4" (6mm)  
- Structural Shapes, L/D = 180
  4. Loads on Guards as per The National Building Code of Canada 2010, Section 3.8.3.2:  
- 1.0 kN horizontal load applied inward or outward at any point at the minimum required height of the guard  
- 0.5 kN horizontal load applied inward or outward on elements within the guard, including solid panels and pickets  
- 1.5 kN/m evenly distributed vertical load applied at the top of the guard  
- the above noted loads on guards are not considered to act simultaneously.



GENERAL NOTES:

All M-2 Grating Hold Down Clips to be 316 S.S., 4-6 H.D.C.'s per grating piece. All cut edges to be Beze Sealed prior to shipping.

Some field fabrication may be required, all field cut edges to be Sealed using supplied seal kits. Cut Grating may have open stud bars.

Span for 1 1/2" Sq. Mesh Grating is Bi-Directional.

All F.R.P. members shall be fabricated by FIBERGRATE into subassemblies to facilitate field erection. The F.R.P. walkways, handrails, stanchions shall be shop fabricated and shop assembled into the largest practical size suitable for transportation as determined by FIBERGRATE.

It shall be the customer's responsibility to ensure proper fit-up of F.R.P. assemblies. This includes VERIFICATION OF AS-BUILT CONDITIONS. In case of concrete misalignment, incorrectly placed or missing embeds, the customer shall modify the F.R.P. subassemblies and/or provide the required anchorages.

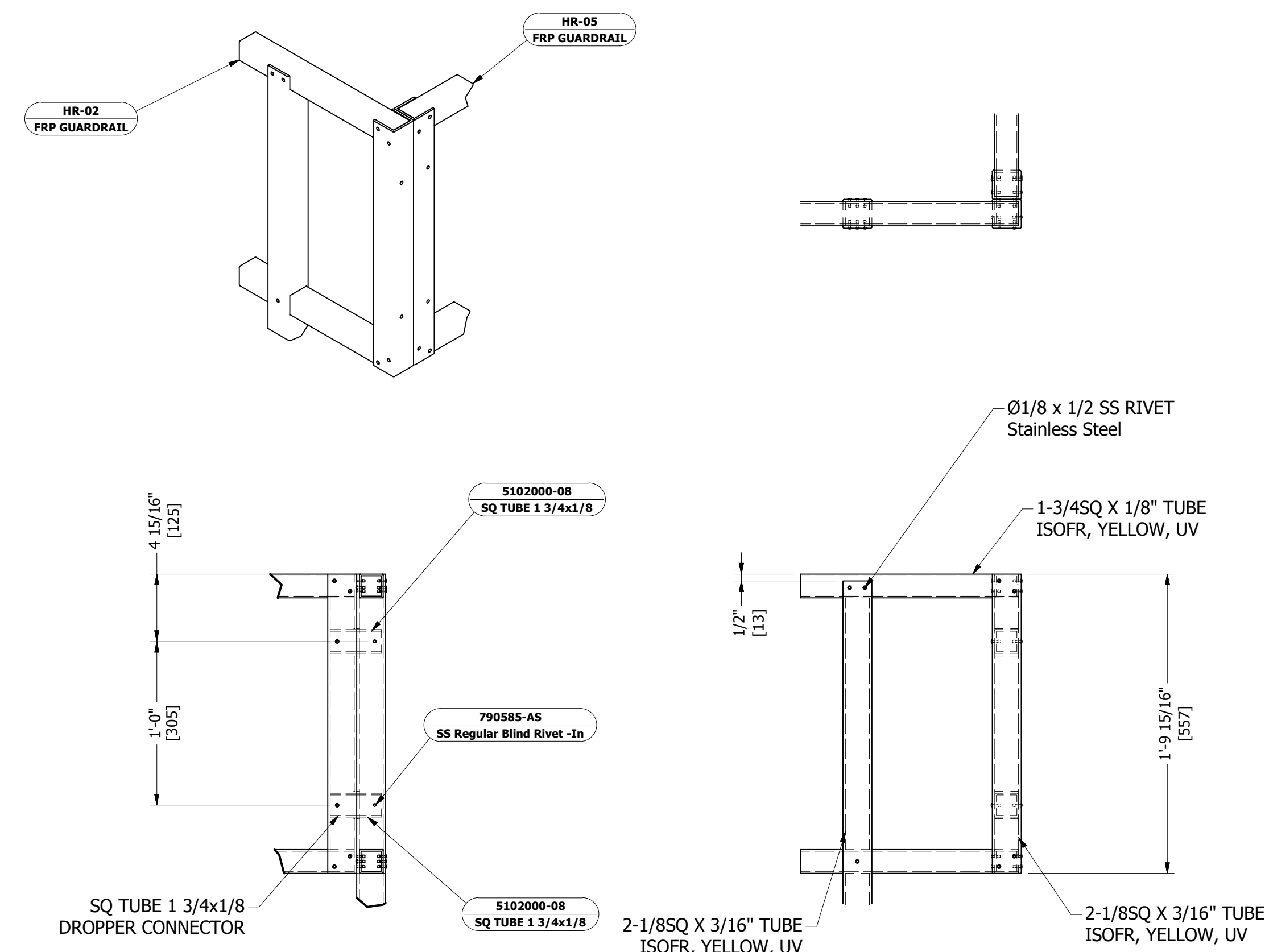
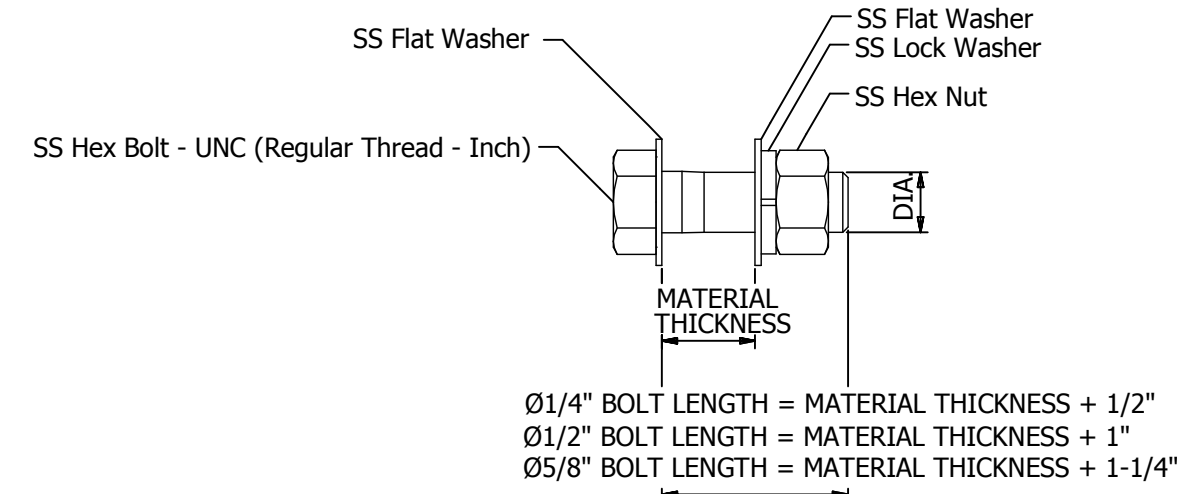
Cutting, fitting, and placement: perform cutting, drilling, and fitting required for installation of F.R.P. fabrications. Set F.R.P. fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

All dimensions to be VERIFIED BY CUSTOMER.

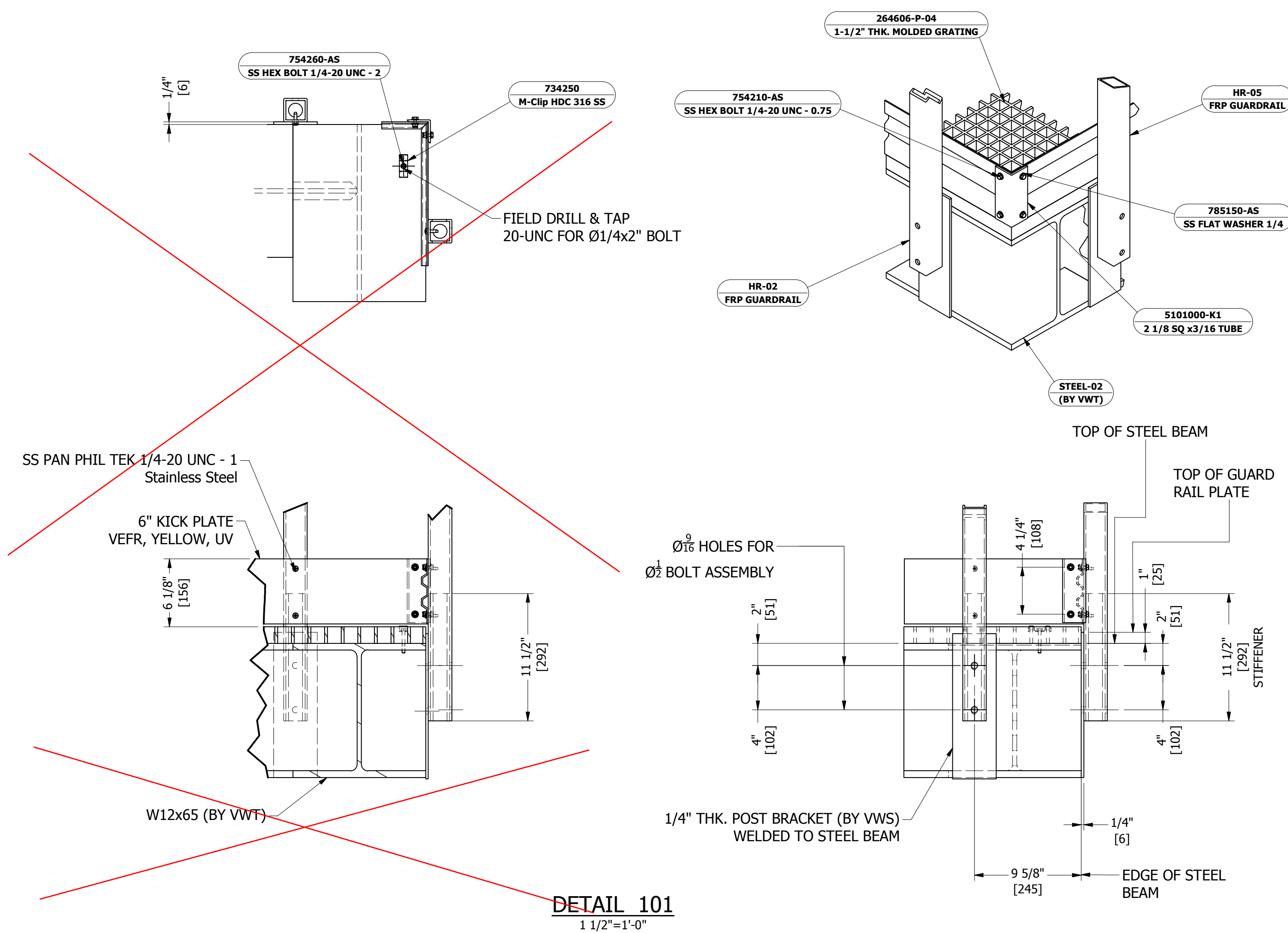
BOLT SIZES FOR COMMON CONNECTIONS			
1/2" BOLTS		STAINLESS STEEL (FOOT-LBS)	
FOR ALL 1/2" BOLTS ADD 1" TO THE THICKNESS OF THE MATERIAL BEING BOLTED FOR THE ACTUAL BOLT LENGTH			
CONNECTION	BOLT LING	TORQUE	VALUES
		316SS	18.8SS
3/8" TO 1/4"	1-1/2"	45 ft-lbs	43 ft-lbs
3/8"- 2 PLY CONNECTION	1-3/4"	45 ft-lbs	43 ft-lbs
3/8" - 3 PLY CONNECTION	2"	45 ft-lbs	43 ft-lbs
3/8" - 2 PLY TO 1/4"	2"	45 ft-lbs	43 ft-lbs
LADDER WALL MOUNT 3/8" TO 1-3/4" RAIL	3"	45 ft-lbs	43 ft-lbs
LADDER WALL MOUNT 1/2" TO 1-3/4" RAIL	3-1/4"	45 ft-lbs	43 ft-lbs
STANCHION BASE	3-1/4"	45 ft-lbs	43 ft-lbs
REMOVABLE HANDRAIL BRACKET 3/8" + 3/8" + 2-1/8"	3-3/4"	45 ft-lbs	43 ft-lbs
2-1/8" POST TO C8	5-1/2"	45 ft-lbs	43 ft-lbs
2-1/8" POST TO C10	6"	45 ft-lbs	43 ft-lbs
WALK THRU 1-3/4" X 3	6"	45 ft-lbs	43 ft-lbs
2-1/8" POST TO 12" I - BEAM	6-1/2"	45 ft-lbs	43 ft-lbs
WALK THRU WITH 3/8" WALL MOUNT	6-1/2"	45 ft-lbs	43 ft-lbs
WALK THRU WITH 1/2" WALL MOUNT	7"	45 ft-lbs	43 ft-lbs

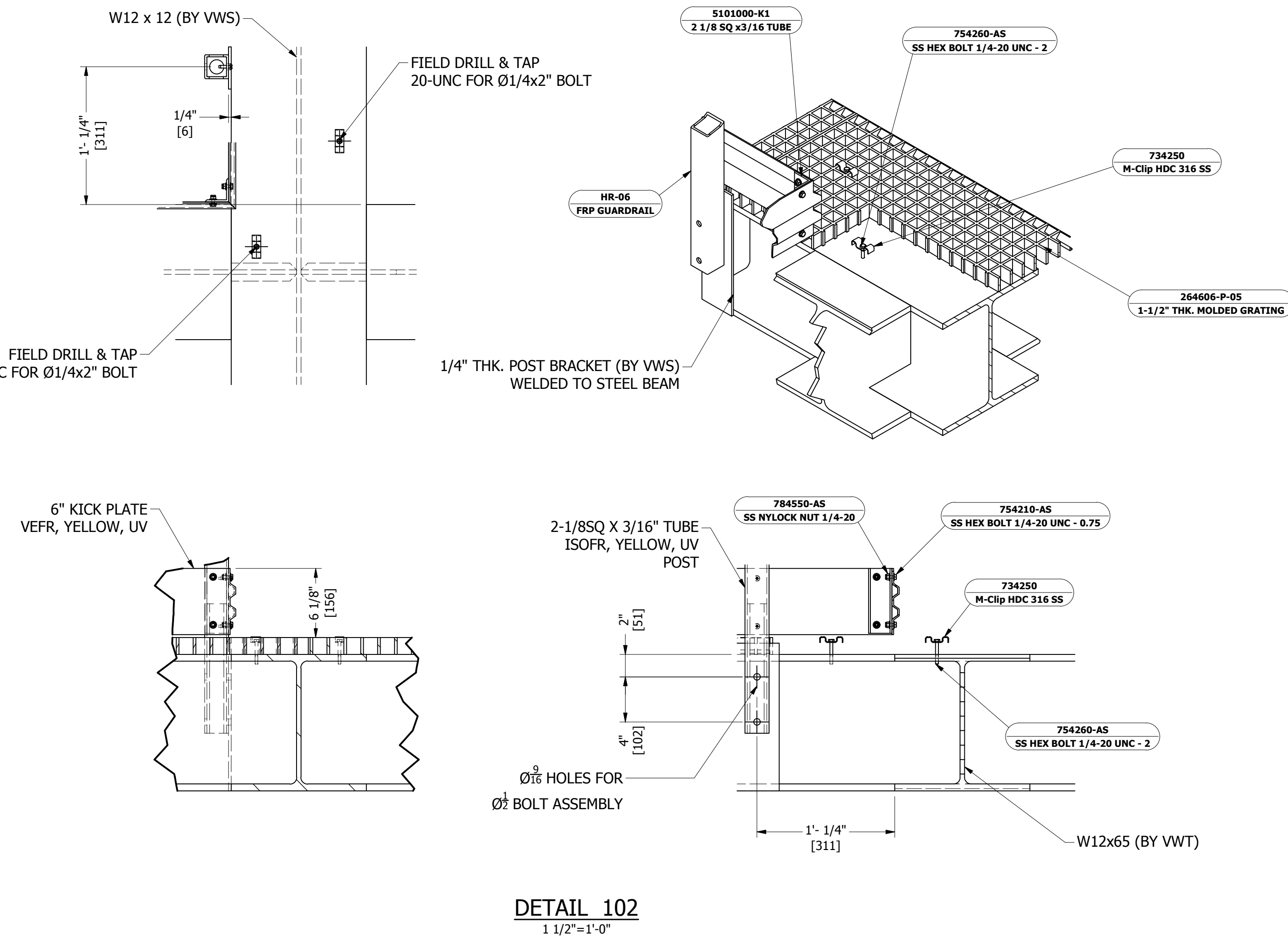
1/4" BOLTS			
STAINLESS		TORQUE	
FOR ALL 1/4" BOLTS ADD 1/2" TO THE THICKNESS OF THE MATERIAL BEING BOLTED FOR THE ACTUAL BOLT LENGTH.			
CONNECTION	STAINLESS	TORQUE	VALUES
		316 SS	18.8 SS
1/4" STAIR CLIPS TO C8	1-1/4"	6.5 ft-lbs	6.25 ft-lbs
1/4" STAIR CLIPS C10	1-1/4"	6.5 ft-lbs	6.25 ft-lbs
HOOP TO MOUNTING BRACKET	1-1/4"	6.5 ft-lbs	6.25 ft-lbs
VERTICAL BAR TO HOOP	1-1/4"	6.5 ft-lbs	6.25 ft-lbs
HOOP TO WALK THRU (1-3/4")	3"	6.5 ft-lbs	6.25 ft-lbs
LADDER CAGE HOOP MNT TO 1-3/4" LADDER RAIL	3"	6.5 ft-lbs	6.25 ft-lbs
KICK PLATE SPLICE CONNECTION	3/4"	6.5 ft-lbs	6.25 ft-lbs
M-2 HOLD DOWN CLIP		5 ft-lbs	5 ft-lbs



DETAIL 100  
1 1/2"=1'-0"



DETAIL 101  
1 1/2"=1'-0"



DETAIL 102  
1 1/2"=1'-0"

**FOR APPROVAL ONLY**

REV	DESCRIPTION	DATE	DRAWN	CHECK
3	ISSUED FOR APPROVAL	25/02/2015	JV	MV
2	ISSUED FOR APPROVAL	18/06/2015	JV	MV
1	ISSUED FOR APPROVAL	14/05/2015	JV	MV
0	ISSUED FOR APPROVAL	28/04/2015	JV	MV

SCALE VERIFICATION:  
 BAR ON ORIGINAL SIZE DRAWING IS 1" LONG, IF NOT 1" LONG ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

PROPERTY	VALUE	PROPERTY	VALUE
GRATING	1 1/2" MOLDED 1-1/2" SQ MESH, GRIT CORVEX, DK GRAY	STANCHION SHAPES:	STANCHION HEADRAIL: VEFR, YELLOW, UV
WALKWAY SHAPES:	316 SS	STANCHION BODY: 316 SS	
DATE:	9/16		

THIS DRAWING AND ALL DESIGN INFORMATION IS THE SOLE PROPERTY OF STONCOR GROUP, FIBERGRATE DIVISION. DRAWING IS NOT TO BE DISCLOSED OR COPIED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF STONCOR GROUP, FIBERGRATE DIVISION.

CUSTOMER: VEOLIA WATER TECHNOLOGIES CANADA INC. 4105 RUE SARTELON SAINT-LAURENT QC H4S2B3

DATE	DESIGNER	COORDINATOR	SCALE
28/04/2015	JV	MV	403811
			AS NOTED
			FG-01
			2 OF 2

# Installation Manual

*Actiflo<sup>®</sup> Equipment*

*Project : WINNIPEG SEWPCC*

*Reference number: 5000214039*

Rev. 2

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## 1.0 Storage

### 1.1 Scope

The following instructions outline the duties and responsibilities of the responsible party for equipment storage. The responsible party shall assume responsibility for the equipment upon arrival at the project site. These instructions shall define the minimum expectations for storage of all equipment.

While this storage specification taken into account common environmental issues that may affect the system during storage, common sense should be the overriding factor in determining the best method to ensure the integrity and proper storage of the *Veolia Water Technologies Canada* equipment.

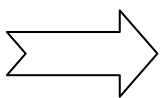
### 1.2 Missing equipment/shipping damage notification

#### General

The condition of all delivered equipment must be verified by the responsible party upon arrival at site. Verification that all equipment has been delivered as per contract must also be done upon arrival at site. Notification of missing or damaged items must be sent to *Veolia Water Technologies Canada* within 10 days of receipt of equipment. If there is no documented notification of missing or damaged parts within 10 days, *Veolia Water Technologies Canada* is not responsible for replacement of any items found to be missing or damaged at the time of installation and start-up of the supplied equipment. It is the responsibility of the party receiving the equipment to ensure all packaging is opened at the time of receipt to uncover and document any and all damages to the Freight Company and *Veolia Water Technologies Canada*.

Photographs and written documentation should be provided on all damaged equipment.

#### Specific to project



**For the current project, VWT will participate in inspection of the equipment upon delivery and jointly complete and sign Form 100 (provided with specs documents) along with Installation Contractor and Contract Administrator.**

## 1.2.1 Storage

Should it be necessary to delay installation and subsequent operation of a unit for more than one month from date of receipt at Site, special precautions must be taken.

Although some equipment can be stored outdoors, indoor storage is preferred for most equipment (refer to list in Appendix B) .

The storage environment into which a system is placed can have a severe effect on the long-term usefulness of some spare parts. Key environmental factors are:

1. temperature
2. relative humidity
3. pollutants

Air may contain excessive moisture, pollutants, microorganisms, and other particulates that accelerate the deterioration of some materials. Humidity and pollutants can produce an aggressive atmosphere.

### 1.2.1.1 Indoor storage

Indoor storage refers to storage in a climate controlled environment under a clean non-aggressive, in a dry (non-condensing) and sheltered environment having a relatively constant temperature (especially for gear reducers, motors, bearings, etc.).

The environmental indoor conditions should not exceed the following ranges.

Min/Max Temperature Range between:	5°- 40° C
Relative Humidity Range between:	35% - 70% (RH)

1. Equipments should be stored in a manner to be kept free from allowing insects/rodents etc. from entering the equipment.
2. Cover the equipment with a tarp or similar protective shield to prevent direct exposure to dust or any other contamination. However, never enclose the unit or components totally in plastic covers; always leave adequate ventilation of air to prevent condensation.
3. Storage volume depends on the size of the project.
4. Equipment must be checked on a weekly basis for tarp/wrap integrity and accumulation.
5. To avoid damage, do NOT stack crates.
6. To avoid damage, do NOT stack enclosures.

7. Do not store spares in barns, equipment sheds, or any other building without the capacity for heating and cooling as needed.

### 1.2.1.2 Outdoor storage

Some equipment such as water troughs, stainless steel pipes, ... (refer to list in Appendix B) may be stored outdoors, but the following instructions should be applied:

1. Equipment should be shielded from the sun, humidity and moisture, using tents or tarpaulins;
2. Provide adequate ventilation when using tents or tarpaulins;
3. Equipment must be stored with adequate support and anchoring, to prevent distortion and to raise equipment above any undesirable ground or floor conditions. It will also prevent flooding damages.
4. Remove all snow, dust and water accumulation from the top of the units.
- 5.
6. Where applicable:
7. Drain water completely with special attention for sections without drain on lowest point.
8. Remove all motored, electronic equipment and instruments and store them indoor (heated and ventilated area).

### 1.2.1.3 Special maintenance requirements during storage

~~**Mixers, scraper drive, recirculation pumps and other equipment with motors and moving parts (such as blowers,...)**~~

~~After three (3) months of storage, long term storage methods must be applied to the unit including complete fill with lubricant. Protect machined surfaces and rotate shafts periodically (every month). Five (5) complete rotations of the output shafts are recommended each time.~~

~~Periodic checks should be made to ensure that no rusting or other damage has occurred. Should such be noted, corrective action should be quickly initiated. Prior to putting unit into service, drain lubricant and refill to proper level as determined by the mounting position. Refer to manufacturer documentation.~~

~~All motors must be removed and store indoor (in a heated and ventilated area). All motors must be run every 3 month as a preventive measure against the formation of corrosion.~~

Also refer to each manufacturer documentation in O&M Manual.

## **Microsand dosage system**

*Excerpt from Installation, Operation and Maintenance Manual in Appendix C*

(...) Avoid a humid or salty environment. If this is not possible, protect the equipment using insulating foil. Prior to installation, check to insure that all the electrical and pneumatic components are intact. To store the equipment for a period of inactivity, clean all parts thoroughly and grease the elastic parts. Store the equipment on a wooden platform, in a place that is protected from inclement weather conditions.

## **Microsand**

Refer to MSDS sheet in Appendix C.

## **Instrumentation**

All instruments must be stored indoors. Refer to manufacturer documentation in O&M Manual.

## **Equipment Cleaning**

**Veolia Water Technologies Canada** is not responsible for cleaning of any equipment prior to installation and start-up due to the storage of the equipment. This is the complete responsibility of others.

## **Proper storage until installed**

For contractual purposes, VWT demands the Client to send pictures of major equipment once it is placed in storage, any time it gets moved during storage and again prior to removing from storage. For outside storage, pictures must be sent every month. Alternatively, a written document (check list, etc.) confirming that proper storage conditions are maintained will suffice. Failing to do so would cancel the proposed warranty.

## Handling

Equipment will arrive at the project site in several different shipments, from various freight companies and in several different packaging containers. Typically a flat bed truck is used which requires a fork lift or a crane to remove the various items.

The General Contractor is responsible for the equipment unloading and handling.



## 2.0 General Installation

The installation of Actiflo equipment must be completed on site by the Installation contractor. Please find below the list of tasks that need to be performed by the contractor at job site:

- Installation should be performed by millwrights.
- The installation contractor must ensure that the necessary lifting equipment is available on site to carry out the installation.
- All nuts & bolts need to be verified, accounted for and tightened.
- Refer to all field installation drawings for the installation of each Actiflo<sup>®</sup> unit.
- After installation completion and termination of all trades activities in the area, clean the tank sections of all debris (rags, tie-wraps, coffee cups, bolts, nuts, etc. ) & objects that could damage the rotating mechanisms, damage pumps or clog the recirculation line. In most cases, a thorough sweeping of the area followed by a visual inspection will suffice.

- Installation of lamella packs
- Installation of tie-down cables
- Complete installation of collection troughs

Please note that sequence of works above is only provided as a suggestion. The installation Contractor is responsible of using the installation methods and sequence that is judged better to him.

### 3.6 Scraper bridge

Refer to the field installation drawings for proper installation of the scraper bridge.

### 3.7 Grating and handrail

Refer to the field installation drawings and documentation from manufacturer for proper installation of the grating and handrailing sections on the scraper bridge.

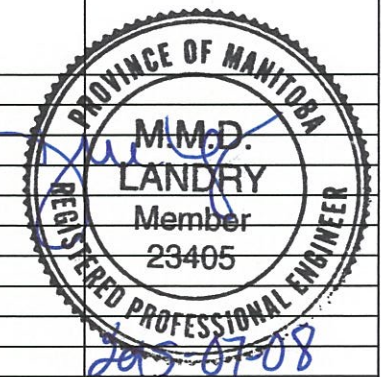
### 3.8 Scraper drive installation

#### Scraper drive and assembly

- Remove the transportation plate from the rake assembly;
- Lower the shaft of the rake using the eyebolt;
- Connect the rake drive to the shaft;
- Remove the eyebolt from the rake shaft;
- APPLICABLE TO VWT PROPRIETARY DRIVE UNITS: Add the lubricant in the planetary gear housing. Use Chevron lubricating oils FM Grade ISO 460 or equivalent FDA approved. Please be careful about the amount of oil that is put in the scraper drive assembly as too much oil may overflow into the tank. The oil level should correspond to about ½ of the height of the gear;
- ➔ APPLICABLE TO DBS DRIVE UNITS: Refer to manufacturer documentation in O&M Manual.
- Rectify alignment if necessary;
- All electrical connections must be completed;
- Rotation of the rake must be CLOCKWISE;
- Ensure that there is no contact between the rake arm and the bottom of the hopper;
- Clean the tank sections of all debris & objects that could damage the rotating mechanisms
- Inspect the embedded recirculation pipe. It should be free of any debris.

NOMENCLATURE/BILL OF MATERIALS

TITRE/ TITLE		Rev.	DESCRIPTION		PAR/ BY:	APPR:	DATE:	Affaire / Contract	WINNIPEG SEWPCC			
<b>ACTIFLO GENERAL INSTALLATION DETAIL</b>		1	FOR APPROVAL		F.C.		2014-09-09	Contract				
		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>mg</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		F11000		5				Date:	2015-02-16			
REV.	ITEM	QTE/QTY.		DESCRIPTION	P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N			
		Unit.	Total									
				<b><u>ITEMS REPRESENTED WITH A HEXAGON</u></b>								
	5000214039-ST-999-001	1	1	MIXER-COAGULATION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX8-20,0 CLOCKWISE DOWN (ACTIFLO #1)	MXR-K111							
	5000214039-ST-999-002	1	1	MIXER-COAGULATION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX8-20,0 COUNTER-CLOCKWISE DOWN (ACTIFLO #2)	MXR-K121							
	5000214039-ST-999-003	1	1	MIXER-INJECTION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX8-20,0 CLOCKWISE UP (ACTIFLO #1)	MXR-K112							
	5000214039-ST-999-004	1	1	MIXER-INJECTION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX8-20,0 COUNTER-CLOCKWISE UP (ACTIFLO #2)	MXR-K122							
	5000214039-ST-999-005	1	1	MIXER-MATURATION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX9-20,0 COUNTER-CLOCKWISE DOWN (ACTIFLO #1)	MXR-K113							
	5000214039-ST-999-006	1	1	MIXER-MATURATION TANK MANUFACTURER: ENVIREQUIP MODEL: EVGX9-20,0 CLOCKWISE DOWN (ACTIFLO #2)	MXR-K123							



NOMENCLATURE/BILL OF MATERIALS

TITRE/ TITLE		Rev.	DESCRIPTION		PAR/ BY:	APPR:	DATE:	Affaire / Contract	WINNIPEG SEWPCC		
ACTIFLO GENERAL INSTALLATION DETAIL		1	FOR APPROVAL		F.C.		2014-09-09	Contract			
		2	FOR APPROVAL II		F.C.		2015-02-23				
		3	FOR APPROVAL III		F.C.	<i>mg</i>	2015-06-08	REF. No.	5000214039	Rev.	3
		4									
DESSIN /DWG #	FI1000	5						Date:	2015-02-16		
REV.	ITEM	QTE/QTY.		DESCRIPTION	P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
		Unit.	Total								
	5000214039-ST-999-	009	1	1	<b>SETTLING MODULES, (STANDARD)</b>	LAM-100					
		009A	30	60	MODULE MODEL:DH85, DIM: 736 Width x 1500 Length X 1000 Height	LAM-200					
		009B	10	20	MODULE MODEL:DH85, DIM: 736 Width x 1800 Length X 1000 Height						
		009C	3	6	MODULE MODEL:DH85, DIM: 560 Width x 1500 Length X 1000 Height						
		009D	1	2	MODULE MODEL:DH85, DIM: 560 Width x 970 Length X 1000 Height-Special cut						
		009E	1	2	MODULE MODEL:DH85, DIM: 560 Width x 847 Length X 1000 Height-Special cut						
		009F	6	12	MODULE MODEL:DH85, DIM: 252 Width x 1500 Length X 1000 Height						
		009G	2	4	MODULE MODEL:DH85, DIM: 252 Width x 1800 Length X 1000 Height						
	5000214039-ST-999-	010	1	2	<b>SCRAPER DRIVE</b>	CM-K114					
					MANUFACTURER: DBS MANUFACTURING ING.	CM-K124					
					MODEL: S34-AE						
					CONNECTION: 10 IN ANSI 150#						
	5000214039-ST-999-	11	1	2	<b>SCUM TROUGH AND OPERATOR</b>						
					MANUFACTURER: DBS MANUFACTURING ING.						
<b><u>ITEMS REPRESENTED WITH A CIRCLE</u></b>											
	5000214039FI1000-	1	1	2	SCRAPER DRIVE BRIDGE (EPOXY COATED CARBON STEEL) C/W GRATING (REF.: ST-999-026)				SA200		

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ACTIFLO GENERAL INSTALLATION DETAIL		1	FOR APPROVAL		F.C.		2014-09-09				
		2	FOR APPROVAL II		F.C.		2015-02-23				
		3	FOR APPROVAL III		F.C.	<i>m</i>	2015-06-08	REF. No.	5000214039	Rev.	3
		4									
DESSIN /DWG #	FI1000	5						Date:	2015-02-16		
REV.	ITEM	QTE/QTY.	DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
		Unit. Total									
	5000214039FI1000-	2	LOT	HANDRAIL C/W HARDWARE MANUFACTURER: FIBERGRATE COMPOSITE STRUCTURES (REF.:ST-999-026)							
	5000214039FI1000-	6	4	8	BAFFLE FOR MATURATION TANK STAINLESS STEEL 316L			FA010			
	5000214039FI1000-	7	4	8	Ø1" X 14" LG. COAGULATION MIXER ANCHOR THREADED ROD (CONCRETE BASE MOUNTING) STAINLESS STEEL 316				FXTSZD308211		
	5000214039FI1000-	8	4	8	Ø1" X 14" LG. INJECTION MIXER ANCHOR THREADED ROD (CONCRETE BASE MOUNTING) STAINLESS STEEL 316				FXTSZD308211		
	5000214039FI1000-	9	4	8	Ø1" X 14" LG. MATURATION MIXER ANCHOR THREADED ROD (CONCRETE BASE MOUNTING) STAINLESS STEEL 316				FXTSZD308211		
	5000214039FI1000-	10	1	2	SUPPORT AND FIBERGRATE ASSEMBLY			SA100			
3	5000214039FI1000-	11	6	12	FLEXIBLE SKIRT (LINATEX WHITE 1/4")			FA024			
	5000214039FI1000-	12	6	12	COLLAR STAINLESS STEEL 316			FA025			
	5000214039FI1000-	15	1	2	DRIVE SHAFT ASSEMBLY (LOWER PART) STAINLESS STEEL 316L			SA1600			
	5000214039FI1000-	16	2	4	SCRAPER SUPPORT ASSEMBLY STAINLESS STEEL 316L			SA1601			
	5000214039FI1000-	17	6	12	TURNBUCKLE Ø3/4"-10UNC C/W JAWS McMASTER-CARR #30315T617 STAINLESS STEEL 316				FXTBZC301245		

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		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>mf</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		FI1000	5					Date:	2015-02-16			
REV.	ITEM	QTE/ QTY.		DESCRIPTION	P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N			
		Unit.	Total									
	5000214039FI1000-	18	6	12	THREADED ROD Ø3/4"-10UNC X 12' LG. STAINLESS STEEL 316					FXSDZD200578		
	5000214039FI1000-	19	6	12	COUPLING NUT Ø 3/4"-10UNC x 2-1/4" McMASTER-CARR #90104A025 STAINLESS STEEL 316					FXNUZC301902		
	5000214039FI1000-	20	1	2	DRIVE SHAFT (UPPER PART) STAINLESS STEEL 316L				FA1650			
	5000214039FI1000-	21	2	4	RADIAL ARM TIGHTENER STAINLESS STEEL 316L				FA1611			
	5000214039FI1000-	22	1	2	DRIVE TUBE CHIMNEY STAINLESS STEEL 316L				FA1609			
	5000214039FI1000-	23	2	4	DRIVE TUBE CHIMNEY SUPPORT STAINLESS STEEL 316L				FA1610			
	5000214039FI1000-	24	3	6	SAMPLING BIN (5 GALLONS) (ST-999-023 )C/W BALL VALVE & TUBING				SA1456			
	5000214039FI1000-	25	3	6	HYDROCYCLONE SUPPORT ASSEMBLY STAINLESS STEEL 316L				SA500			
	5000214039FI1000-	26	6	12	SUPPORT SAMPLING TANK (5 GALLONS)				FA1466			
	5000214039FI1000-	34	2	4	NIPPLES Ø2" MNPT x 3 1/2"LG STAINLESS STEEL 316 McMASTER-CARR #4548K163					FPNISS313249		
	5000214039FI1000-	35	2	4	NIPPLES Ø2" MNPT x 9"LG STAINLESS STEEL 316 McMASTER-CARR #4548K254					FPNISS313250		
	5000214039FI1000-	36	1	2	SEAL PLATE STAINLESS STEEL 316				FA058			
	5000214039FI1000-	37	1	2	SEAL GASKET 1/8" TH. MAT'L: RED RUBBER				FA059			

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		2	FOR APPROVAL II		F.C.		2015-02-23				
		3	FOR APPROVAL III		F.C.	<i>[Signature]</i>	2015-06-08	REF. No.	5000214039	Rev.	3
		4									
DESSIN /DWG #		FI1000	5					Date:	2015-02-16		
REV.	ITEM	QTE/QTY.	DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
		Unit. Total									
	5000214039FI1000-	38 2 4	ø2" FLANGE GASKET CLASS 150 LBS MAT'L: RED RUBBER						SEGAFP200120		
	5000214039FI1000-	39 2 4	CAP PIPE THREADED ø2" STAINLESS STEEL 316 McMASTER-CARR #4452K244						FPCPSS313089		
	5000214039FI1000-	40	CANCELLED								
	5000214039FI1000-	44 6 12	ø2" VICTAULIC COUPLING, STYLE-75 PROTECTION PAINTED						FPADSS200462		
	5000214039FI1000-	45 6 12	HYDROCYCLONE OUTLET VENT (PAINTED CARBON STEEL SCH40)					FA022			
	5000214039FI1000-	46 6 12	HYDROCYCLONE OUTLET (PAINTED CARBON STEEL SCH40)					FA022			
	5000214039FI1000-	47 4 8	SETTLING MODULE SUPPORT ANGLE ( 958mm LG ) STAINLESS STEEL 316L					FA1751			
	5000214039FI1000-	48 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE SCH80 ø1 1/2" (INJECTION TANK)					FA1801			
	5000214039FI1000-	49 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE SCH80 ø1 1/2"(MATURATION TANK)					FA1800			
	5000214039FI1000-	50 113 226	PLASTIC CLAMPS FOR PIPE ø1 1/2" McMASTER-CARR #3192T55						FPCLPP313208		
	5000214039FI1000-	51 2 4	POLYMER PIPE CLAMP MOUNTING PLATE STAINLESS STEEL 316L					FA1803			
	5000214039FI1000-	52 2 4	POLYMER DISTRIBUTION SUPPORT STAINLESS STEEL 316L					FA1852			

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ACTIFLO GENERAL INSTALLATION DETAIL		1	FOR APPROVAL		F.C.		2014-09-09	Contract				
		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>W</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		FI1000	5					Date:	2015-02-16			
REV.	ITEM	QTE/ QTY.		DESCRIPTION	P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N			
		Unit.	Total									
	5000214039FI1000-	53	8	16	SETTLING MODULE SUPPORT (8449mm LG) STAINLESS STEEL 316L				FA1750			
	5000214039FI1000-	54	12	24	SETTLING MODULE SUPPORT ANGLE ( 685mm LG ) STAINLESS STEEL 316L				FA1751			
	5000214039FI1000-	55	9	18	Ø1/4" x 25' LG. POLYURETHANE CORD, INCOLOR: BLACK, McMASTER-CARR #3961T2					FXTIYP200121		
	5000214039FI1000-	56	9	18	GLASS-REINFORCED NYLON ADJUSTABLE HOOK FOR POLYURETHANE CORD Ø1/4", McMASTER-CARR #3961T15					FXFAYP200076		
	5000214039FI1000-	57	9	18	GLASS-REINFORCED NYLON FIXED HOOK FOR POLYURETHANE CORD Ø1/4", McMASTER-CARR #3961T6					FXFAYP200077		
	5000214039FI1000-	58	18	36	Ø3/8"-16 UNC FULLY THREADED EYEBOLT ØNMAT'L: FIBERGLASS-FILLED POLYURETHANE\NMcMASTER-CARR #30295T34					FXBOYS200073		
	5000214039FI1000-	60	60	120	COROPLAST SHEET 6mm X 300mm X 1220mm LG					FASHAI314242		
	5000214039FI1000-	61	94	188	THREADED ROD Ø1/2" X 7" LG. STAINLESS STEEL 316					FXTSYV308807		
	5000214039FI1000-	62	3	6	POLYMER DISTRIBUTION ( HYDROCYCLONE UNDERFLOW)				FA021			
3	5000214039FI1000-	63	12	24	PIPE SUPPORT FOR ø1" AIR WASH SYSTEM STAINLESS STEEL 316L				FA053			
3	5000214039FI1000-	64	6	12	SUPPORT ANGLE FOR ø1" AIR WASH SYSTEM STAINLESS STEEL 316L				FA053			



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		2	FOR APPROVAL II			F.C.		2015-02-23					
		3	FOR APPROVAL III			F.C.	<i>mg</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4											
DESSIN /DWG #		FI1000	5						Date:	2015-02-16			
REV.	ITEM	QTE/QTY.	DESCRIPTION			P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N			
		Unit. Total											
3	5000214039FI1000-	65 6	12	WALL SUPPORT FOR AIR WASH SYSTEM (LENGTH) STAINLESS STEEL 316L					FA054				
3	5000214039FI1000-	66 6	12	WALL SUPPORT FOR AIR WASH SYSTEM (SHORT) STAINLESS STEEL 316L					FA054				
	5000214039FI1000-	67 2	4	PIPE Ø2" & 1" FOR AIR WASH SYSTEM STAINLESS STEEL 316L (CORNER NORTH)					FA050				
	5000214039FI1000-	68 2	4	PIPE Ø2" & 1" FOR AIR WASH SYSTEM STAINLESS STEEL 316L (CORNER SOUTH)					FA055				
	5000214039FI1000-	69 6	12	SETTLING TANK COLLECTING TROUGH STAINLESS STEEL 316L					FA120				
	5000214039FI1000-	71 6	12	SETTLING TANK COLLECTING TROUGH GASKET NEOPRENE 1/2" DURO 40-50 FDA					FA122				
	5000214039FI1000-	72 6	12	COLLECTING TROUGH SUPPORT (FOR CONCRETE SIPHOID WALL) STAINLESS STEEL 316L					FA121				
	5000214039FI1000-	73 12	24	SIPHOID WALL SUPPORT THREADED ROD Ø1/2" X 9" LG. (STAINLESS STEEL 316)						FXSDYV200576			
	5000214039FI1000-	74 20	40	INTERMEDIATE SUPPORT THREADED ROD Ø5/8 X 39 1/2" LG. (STAINLESS STEEL 316)						FXSDYY200577			
	5000214039FI1000-	75 16	32	SETTLING MODULE WALL SUPPORT STAINLESS STEEL 316L					FA1752				
	5000214039FI1000-	76 4	8	INTERMEDIATE SUPPORT THREADED ROD Ø5/8 X 32 1/4" LG.(819mm) (STAINLESS STEEL 316)						FXSDYY200577			

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		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>MS</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		FI1000	5					Date:	2015-02-16			
REV.	ITEM	QTE/QTY.	DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N			
		Unit. Total										
	5000214039FI1000-	77 13 26	ADHESIVE HILTI HIT HY200 (330ml) C/W 1 CARTRIDGE & 1 MIXING TUBE #HILTI No.00371957									
	5000214039FI1000-	78 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(MATURATION TANK) SCH.80					FA1804				
	5000214039FI1000-	79 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(INJECTION TANK) SCH.80					FA1805				
	5000214039FI1000-	80 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(INJECTION TANK) SCH.80					FA1806				
	5000214039FI1000-	81 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(INJECTION TANK) SCH.80					FA1807				
	5000214039FI1000-	82 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(INJECTION TANK) SCH.80					FA1808				
	5000214039FI1000-	83 1 2	PREFAB. POLYMER DISTRIBUTION PVC PIPE ø1 1/2"(INJECTION TANK) SCH.80					FA1809				
	5000214039FI1000-	85 1 2	AIR WASH SYSTEM COMPONENT STAINLESS STEEL 316L (NORTH)					FA051				
	5000214039FI1000-	86 1 2	AIR WASH SYSTEM COMPONENT STAINLESS STEEL 316L (SOUTH)					FA051				
	5000214039FI1000-	87 2 4	AIR WASH SYSTEM COMPONENT STAINLESS STEEL 316L (1050 LG)					FA051				
	5000214039FI1000-	88 2 4	AIR WASH SYSTEM COMPONENT STAINLESS STEEL 316L (840 LG)					FA051				

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		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>mf</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		FI1000	5					Date:	2015-02-16			
REV.	ITEM		QTE/QTY.	DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
			Unit. Total									
	5000214039FI1000-	89	2 4	AIR WASH SYSTEM COMPONENT STAINLESS STEEL 316L (CENTER)					FA051			
	5000214039FI1000-	90	2 4	PERFORATED PIPE FOR AIR WASH ASSEMBLY STAINLESS STEEL 316L					FA052			
	5000214039FI1000-	91	1 2	TYPE 300 STAINLESS STEEL ROTATING JOINT $\varnothing$ 2" - ONE-WAY FLOW " WITH LEFT-HAND ROTATING THREADS FOR CLOCKWISE ROTATION - McMASTER #9177K571 "						FPADSS313243		
	5000214039FI1000-	97	8 16	WALL SUPPORT STAINLESS STEEL 316					FA057			
	5000214039FI1000-	98	4 8	UNION $\varnothing$ 2" NPT STAINLESS STEEL 316 McMASTER-CARR #4452K231						FPUNSS312505		
	5000214039FI1000-	99	2 4	ELBOW $\varnothing$ 2" NPT STAINLESS STEEL 316 McMASTER-CARR #4452K419						FPELSS300283		
	5000214039FI1000-	193	4 8	$\varnothing$ 5/8" DROP-IN, POWERS FASTENERS #6230						FXACYV200153		
	5000214039FI1000-	195	18 36	$\varnothing$ 3/8" DROP-IN, POWERS FASTENERS #6226 STAINLESS STEEL 316						FXACYS200138		
	5000214039FI1000-	301	24 48	THREADED ROD $\varnothing$ 1/2" x 6" LG STAINLESS STEEL 316L						FXSDYV200576		
	5000214039FI1000-	303	12 24	THREADED ROD $\varnothing$ 3/4" x 9" LG STAINLESS STEEL 316L						FXTSZC308210		
	5000214039FI1000-	324	72 144	$\varnothing$ 1/2"x5-1/2" LG. MECHANICAL ANCHOR, POWERS FASTENERS, POWER-STUD #7624 (SS-316) C/W NUT AND WASHER						FXACYV200150		

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		2	FOR APPROVAL II		F.C.		2015-02-23					
		3	FOR APPROVAL III		F.C.	<i>mf</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4										
DESSIN /DWG #		FI1000	5					Date:	2015-02-16			
REV.	ITEM	QTE/QTY.		DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
		Unit.	Total									
	5000214039FI1000-334	12	24	Ø5/8"x6" LG. MECHANICAL ANCHOR, POWERS FASTENERS, POWER-STUD #7634 (SS-316) C/W NUT AND WASHER						FXACY200157		
	5000214039FI1000-502	206	412	NUT Ø1/2" STAINLESS STEEL 316						FXNUYV200218		
	5000214039FI1000-503	88	176	NUT Ø5/8" STAINLESS STEEL 316						FXNUYY200226		
	5000214039FI1000-504	32	64	NUT Ø3/4" STAINLESS STEEL 316						FXNUZD200237		
	5000214039FI1000-506	12	24	NUT Ø1" STAINLESS STEEL 316						FXNUZD200238		
	5000214039FI1000-509	12	24	WASHER ø5/16" STAINLESS STEEL 316						FXWAYD200653		
	5000214039FI1000-510	8	16	WASHER 8-32 STAINLESS STEEL 316						FXWAYE308309		
	5000214039FI1000-511	56	112	WASHER Ø3/8" STAINLESS STEEL 316						FXWAYS200668		
	5000214039FI1000-512	210	420	WASHER Ø1/2" STAINLESS STEEL 316						FXWAYV200672		
	5000214039FI1000-513	104	208	WASHER Ø5/8" STAINLESS STEEL 316						FXWAY200676		
	5000214039FI1000-514	48	96	WASHER Ø3/4" STAINLESS STEEL 316						FXWAZD200683		
	5000214039FI1000-515	48	96	WASHER Ø7/8" STAINLESS STEEL 316						FXWAYI200660		
	5000214039FI1000-516	48	96	WASHER Ø1" STAINLESS STEEL 316						FXWAZD200684		
	5000214039FI1000-521	8	16	LOCK WASHER Ø3/8" STAINLESS STEEL 316						FXWAYS200669		
	5000214039FI1000-522	40	80	LOCK WASHER Ø1/2" STAINLESS STEEL 316						FXWAYV200673		
3	5000214039FI1000-530	28	56	NYLON LOCK NUT Ø3/8" STAINLESS STEEL 316						FXNUYV200211		
	5000214039FI1000-531	8	16	NYLON LOCK NUT 8-32 STAINLESS STEEL 316						FXNUYB200181		



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ACTIFLO GENERAL INSTALLATION DETAIL		1	FOR APPROVAL			F.C.		2014-09-09	Contract				
		2	FOR APPROVAL II			F.C.		2015-02-23					
		3	FOR APPROVAL III			F.C.	<i>mg</i>	2015-06-08	REF. No.	5000214039	Rev.	3	
		4											
DESSIN /DWG #		FI1000	5						Date:	2015-02-16			
REV.	ITEM	QTE/QTY.		DESCRIPTION			P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N		
		Unit.	Total										
3	5000214039FI1000-	532	24	48	NYLON LOCK NUT Ø1/2" STAINLESS STEEL 316						FXNUYV200219		
	5000214039FI1000-	533	8	16	NYLON LOCK NUT Ø5/8" STAINLESS STEEL 316						FXNUYY200227		
	5000214039FI1000-	534	12	24	NYLON LOCK NUT Ø3/4" STAINLESS STEEL 316						FXNUZD200239		
	5000214039FI1000-	535	24	48	NYLON LOCK NUT Ø7/8" STAINLESS STEEL 316						FXNUYI200197		
	5000214039FI1000-	536	12	24	NYLON LOCK NUT Ø1" STAINLESS STEEL 316						FXNUZD200240		
	5000214039FI1000-	602	226	452	ANCHORS HILTI KWIK-CON II PLUS Ø3/16" x 1 1/4" LG. HEX.HEAD / 410 STAINLESS STEEL						FXACYP200135		
	5000214039FI1000-	622	8	16	Ø1/2"x3-3/4" LG. MECHANICAL ANCHOR, POWERS FASTENERS, POWER-STUD #7622 (S.S. 316)						FXACYV200148		
	5000214039FI1000-	713	12	24	HEX HEAD BOLT Ø5/16x3/4" STAINLESS STEEL 316						FXSCYD200296		
	5000214039FI1000-	714	8	16	HEX HEAD BOLT Ø3/4x2 1/2" STAINLESS STEEL 316						FXSCZC200560		
	5000214039FI1000-	715	12	24	HEX HEAD BOLT Ø7/8 X 4" STAINLESS STEEL 316						FXSCYI200327		
	5000214039FI1000-	721	4	8	HEX HEAD BOLT Ø3/8x1" STAINLESS STEEL 316						FXSCYS200405		
	5000214039FI1000-	742	44	88	HEX HEAD BOLT Ø1/2x2" STAINLESS STEEL 316						FXSCYV200472		
	5000214039FI1000-	743	8	16	HEX HEAD BOLT 8-32 x1" STAINLESS STEEL 316						FXSCYE308308		
	5000214039FI1000-	744	4	8	HEX HEAD BOLT Ø3/4"X3"1/2 STAINLESS STEEL 316						FXSCZC200563		
	5000214039FI1000-	751	12	24	HEX HEAD BOLT Ø3/8x1 3/4" STAINLESS STEEL 316						FXSCYS200408		
	5000214039FI1000-	753	8	16	HEX HEAD BOLT Ø3/4"x3" STAINLESS STEEL 316						FXSCZC200562		



2-0102-PDTL-K129

NOMENCLATURE/BILL OF MATERIALS

TITRE/ TITLE		Rev.	DESCRIPTION		PAR/ BY:	APPR:	DATE:	Affaire / Contract	WINNIPEG SEWPCC		
ACTIFLO GENERAL INSTALLATION DETAIL		1	FOR APPROVAL		F.C.		2014-09-09	Contract			
		2	FOR APPROVAL II		F.C.		2015-02-23				
		3	FOR APPROVAL III		F.C.	<i>m</i>	2015-06-08	REF. No.	5000214039	Rev.	3
		4									
DESSIN /DWG #		FI1000	5					Date:	2015-02-16		
REV.	ITEM	QTE/QTY.		DESCRIPTION		P&ID I.D./TAG	CAT. ACCPAC	SOURCE	FA/SA FI SITE	P / N	
	5000214039FI1000-	761	10	20	HEX HEAD BOLT Ø3/8x2" STAINLESS STEEL 316					FXSCYS200409	
	5000214039FI1000-	763	8	16	HEX HEAD BOLT Ø5/8x3" STAINLESS STEEL 316					FXSCYY200528	
	5000214039FI1000-	794	12	24	HEX HEAD BOLT ø7/8" x 4 1/2" LG STAINLESS STEEL 316					FXSCZD308209	
	5000214039FI1000-	796	12	24	HEX HEAD BOLT Ø1/2" x 2" LG STAINLESS STEEL 316					FXSCYV200472	
	5000214039FI1000-	797	14	28	U-BOLT ø3/8" ROD (PIPE ø2") C/A NUT AND WASHER STAINLESS STEEL 316					FXUBZG200622	
	5000214039FI1000-	798	6	12	U-BOLT ø1/4" ROD (PIPE ø3/4") C/A NUT AND WASHER STAINLESS STEEL 316					FXUBZC200611	
	5000214039FI1000-	799	12	24	U-BOLT ø1/4" ROD (PIPE ø1") C/A NUT AND WASHER STAINLESS STEEL 316					FXUBZD200613	
	5000214039FI1000-	800	6	12	U-BOLT ø1/4" ROD (PIPE ø1 1/2")C/A NUT AND WASHER STAINLESS STEEL 316					FXBOGU308349	
END OF LIST											