

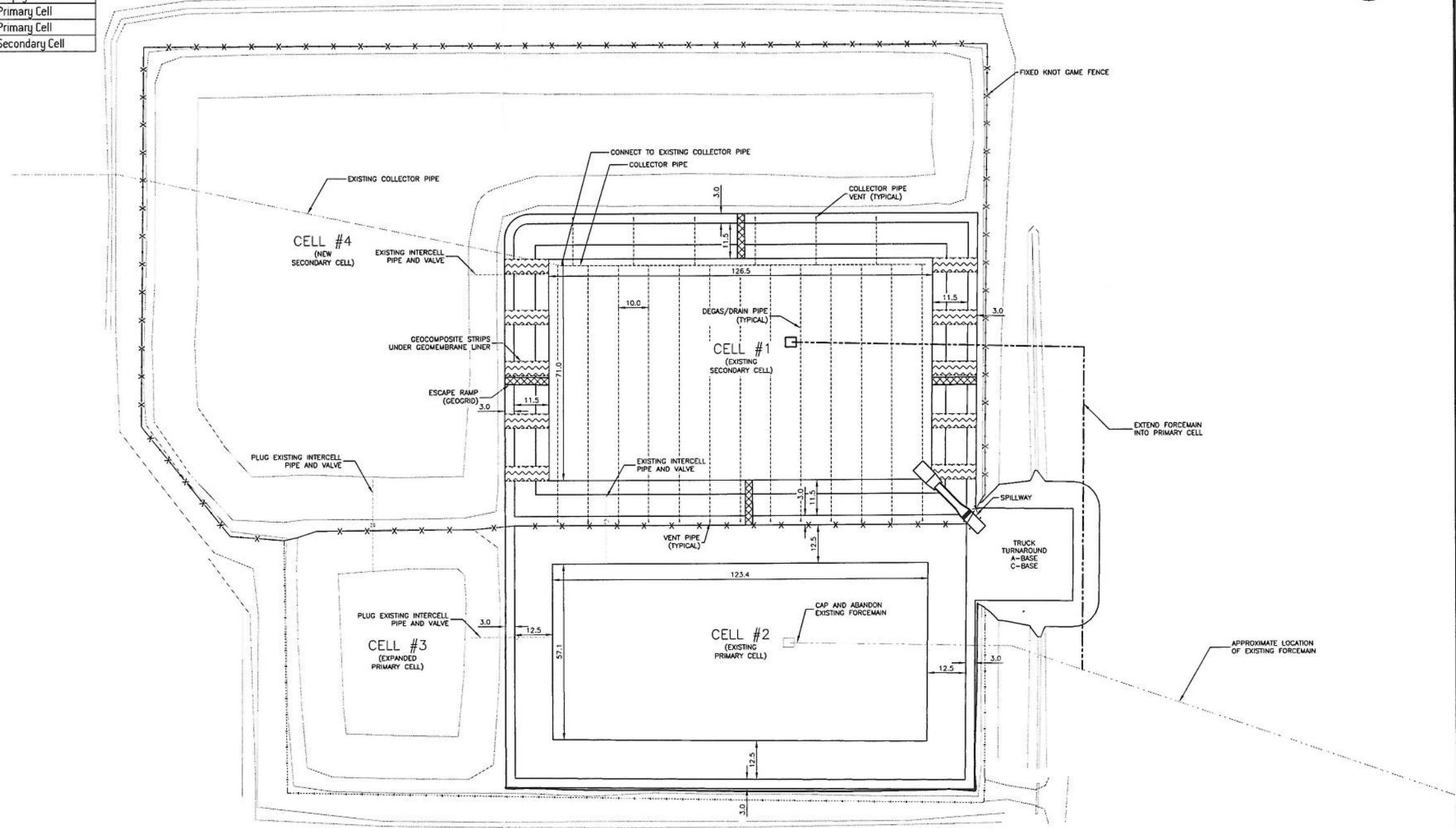
TABLE 1
MANTONAS LAGOON - POPULATION AND WASTEWATER LOADING PROJECTIONS

Calendar Year	Project Year	Inlet Population (0.528 gpm/cap/day)	Population		Total Population on Pipe System	Baril Bents D.528 gpm/cap/day	Inlet Flow Rate (gpm/cap/day)	Septic Tank at 0.5 Flow Rate	Dynamic Loading			Daily BOD ₅ Loading (lb/day)	Primary Clarifier BOD ₅ (lb/day)	Daily Flow Capacity (lb/day)	Hydraulic Loading		Total BOD ₅ Storage (lb)
			# of Homes	Equivalent Population					Flow Rate (gpm)	Flow Rate (gpm)	Flow Rate (gpm)				Flow Rate (gpm)	Flow Rate (gpm)	
2011	0	522	90	30	552	498	0.016	4.85	42.0	9.7	51.7	9,273	863	1296	481.2	476.4	109,566
2012	0	525	90	30	555	500	0.016	4.85	42.2	9.7	51.8	9,259	863	1296	483.4	478.6	110,085
2013	0	527	90	30	557	503	0.016	4.85	42.3	9.7	52.0	9,244	863	1296	485.7	480.9	110,605
2014	0	530	90	30	560	506	0.016	4.85	42.6	9.7	52.2	9,330	863	1296	488.0	483.2	111,128
2015	0	533	90	30	563	508	0.016	4.85	42.8	9.7	52.5	9,365	863	1296	490.3	485.5	111,654
2016	1	536	90	30	565	511	0.016	4.85	43.0	9.7	52.7	9,402	863	1296	492.7	487.8	112,183
2017	2	538	90	30	568	513	0.016	4.85	43.2	9.7	52.9	9,439	863	1296	495.0	490.1	112,714
2018	3	541	90	30	571	516	0.016	4.85	43.4	9.7	53.1	9,475	863	1296	497.3	492.4	113,248
2019	4	543	90	30	573	518	0.016	4.85	43.6	9.7	53.3	9,512	863	1296	499.7	494.7	113,784
2020	5	546	90	30	576	521	0.016	4.85	43.8	9.7	53.5	9,549	863	1296	502.1	497.1	114,323
2021	6	549	90	30	579	523	0.016	4.85	44.0	9.7	53.7	9,586	863	1296	504.4	499.4	114,865
2022	7	551	90	30	581	526	0.016	4.85	44.2	9.7	53.9	9,623	863	1296	506.8	501.8	115,410
2023	8	554	90	30	584	529	0.016	4.85	44.4	9.7	54.1	9,660	863	1296	509.2	504.2	115,957
2024	9	557	90	30	587	531	0.016	4.85	44.6	9.7	54.3	9,698	863	1296	511.7	506.6	116,507
2025	10	560	90	30	590	534	0.016	4.85	44.8	9.7	54.5	9,736	863	1296	514.1	509.0	117,060
2026	11	563	90	30	593	537	0.016	4.85	45.0	9.7	54.7	9,774	863	1296	516.5	511.4	117,615
2027	12	565	90	30	595	539	0.016	4.85	45.2	9.7	54.9	9,812	863	1296	519.0	513.8	118,174
2028	13	568	90	30	598	542	0.016	4.85	45.5	9.7	55.2	9,850	863	1296	521.4	516.2	118,735
2029	14	571	90	30	601	545	0.016	4.85	45.7	9.7	55.4	9,889	863	1296	523.9	518.7	119,299
2030	15	574	90	30	604	548	0.016	4.85	45.9	9.7	55.6	9,928	863	1296	526.4	521.2	119,865
2031	16	577	90	30	607	550	0.016	4.85	46.1	9.7	55.8	9,966	863	1296	528.9	523.6	120,435
2032	17	580	90	30	610	553	0.016	4.85	46.3	9.7	56.0	10,006	863	1296	531.4	526.1	121,007
2033	18	583	90	30	613	556	0.016	4.85	46.6	9.7	56.3	10,045	863	1296	534.0	528.6	121,583
2034	19	585	90	30	615	559	0.016	4.85	46.8	9.7	56.5	10,084	863	1296	536.5	531.1	122,161
2035	20	588	90	30	618	561	0.016	4.85	47.0	9.7	56.7	10,124	863	1296	539.0	533.7	122,742

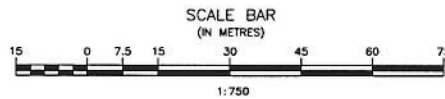
1. All flow rates are based on a 24-hour average flow rate.



New Labelling	Proposed Use	Current (2016) Labelling	Current (2016) Use
Cell #1	Primary Cell (after desludging and lining)	Existing Secondary Cell	Empty Cell
Cell #2	Drain and leave unused	Existing Primary Cell	Primary Cell
Cell #3	Storage of sludge from Cell #1	Expanded Primary Cell	Primary Cell
Cell #4	Secondary Cell (unchanged)	New Secondary Cell	Secondary Cell



**PRELIMINARY
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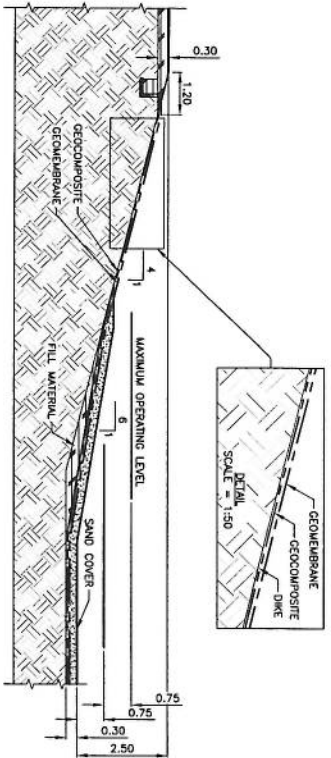
No.	REVISIONS	DATE	INITIALS

B.M. EL.
LOCATIONS OF UNDERGROUND STRUCTURES/UTILITIES AS SHOWN ARE BASED ON AVAILABLE INFORMATION BUT NO GUARANTEE IS GIVEN OR IMPLIED THAT ALL EXISTING UNDERGROUND STRUCTURES/UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL UNDERGROUND STRUCTURES/UTILITIES MUST BE OBTAINED FROM THE APPROPRIATE AUTHORITY/OWNER, BY THE CONTRACTOR, BEFORE PROCEEDING WITH CONSTRUCTION.

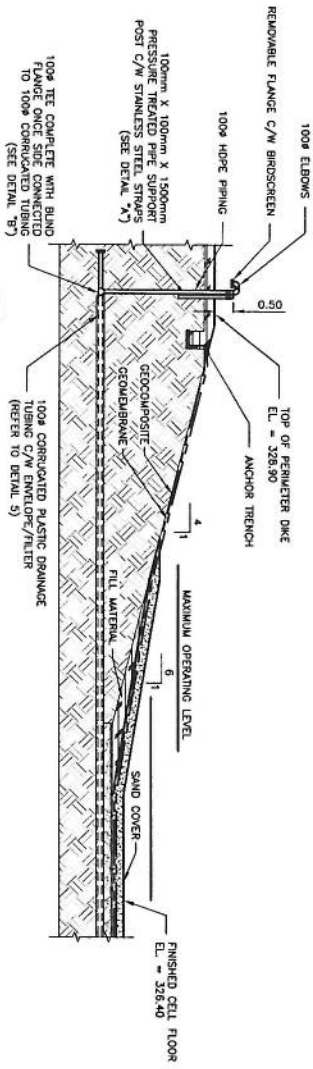
ENGINEER'S SEAL
PRELIMINARY

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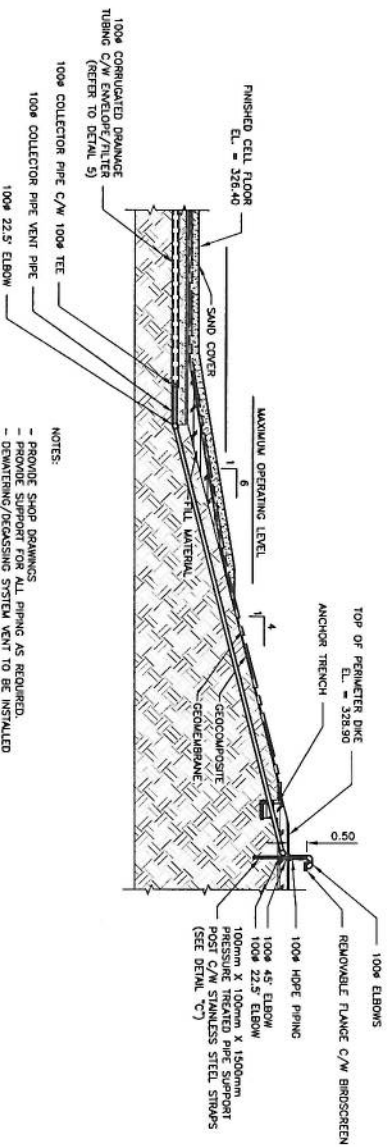
CODE: M-706.01	PROJECT: MUNICIPALITY OF MINOTONAS-BOWSMAN WASTEWATER LAGOON UPGRADE
DESIGNED BY: OW	TITLE: NOTICE OF ALTERATION UPGRADED LAGOON LAYOUT PLAN
DRAWN BY: RH	SCALE: 1:750
REVIEWED BY: JD	DATE: 16/03/18
	PLAN: 1
	SHEET: 1 of 3



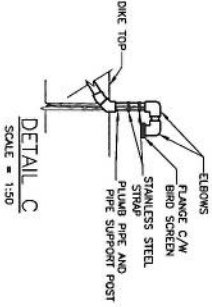
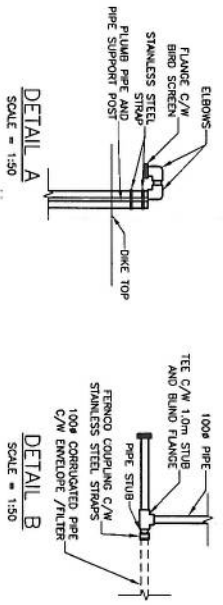
NORTH, EAST, WEST CELL #1 PERIMETER DIKE
SCALE = 1:100



TILE DEWATERING/DEGASSING SYSTEM VENT DETAIL
SCALE = 1:100



COLLECTOR PIPE VENT PIPE DETAIL
SCALE = 1:100

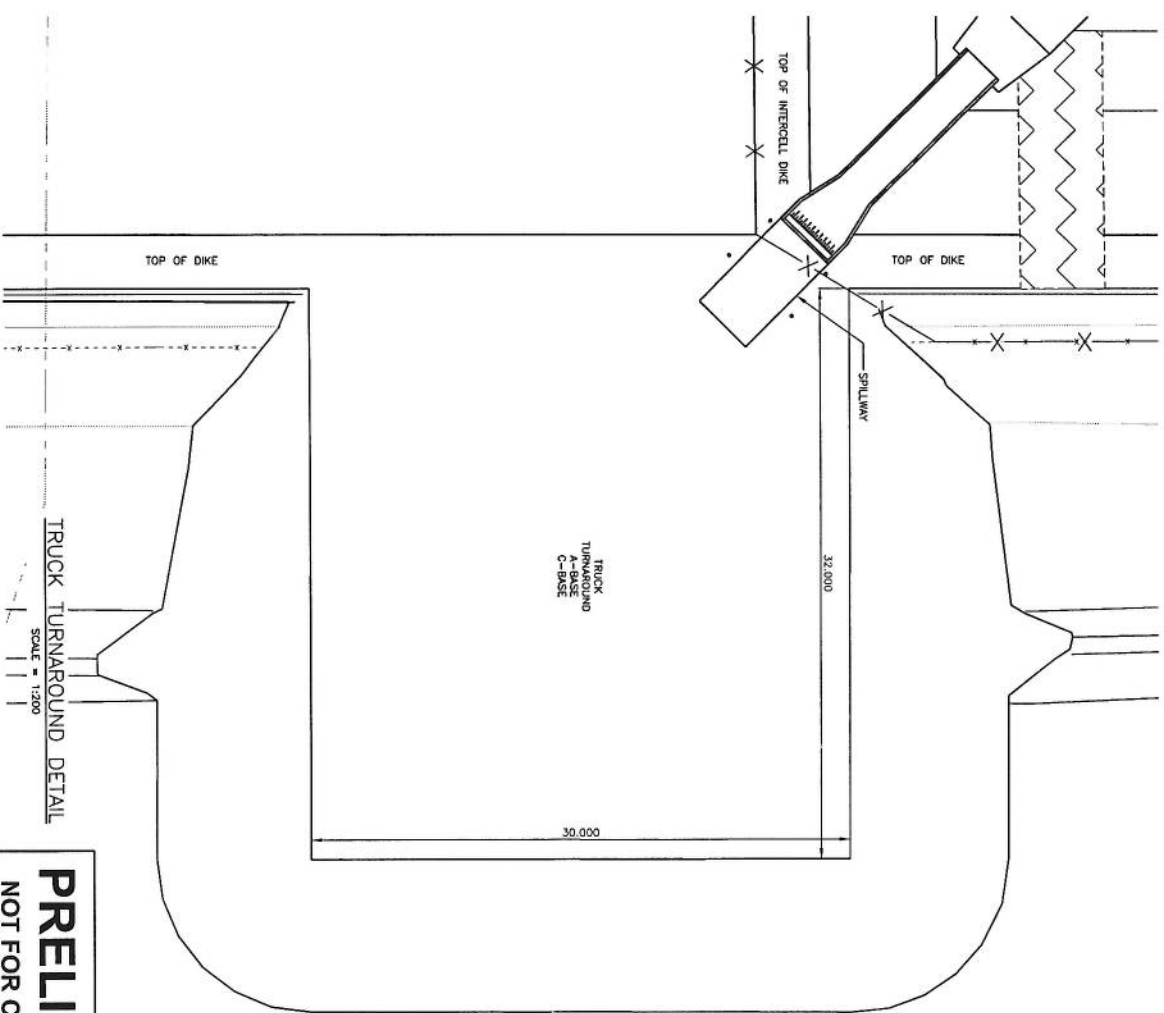


LEGEND:

(Symbol)	INSITU MATERIAL SUITABLE FOR LINER BEDDING. IF MATERIAL IS NOT SUITABLE, REMOVE 200mm DIRECTED BY ENGINEER.
(Symbol)	PLACE SUITABLE COVER MATERIAL FOR LINER
(Symbol)	EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION
(Symbol)	INSITU SOIL
(Symbol)	CONCRETE
(Symbol)	TRENCH STONE
(Symbol)	TOPSOIL
(Symbol)	SEDED GROUND

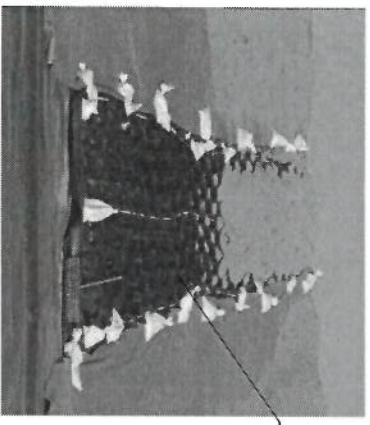
LEVELS:

LEVEL 1	PRE-CONSTRUCTION EXISTING FINISH ELEVATION
LEVEL 2	FINISHED CELL BOTTOM ELEVATION
LEVEL 3	FINISHED CELL BOTTOM ELEVATION
LEVEL 4	FINISHED CELL BOTTOM ELEVATION
LEVEL 5	LEVEL OF FINISHWORK PRIOR TO BEDDING



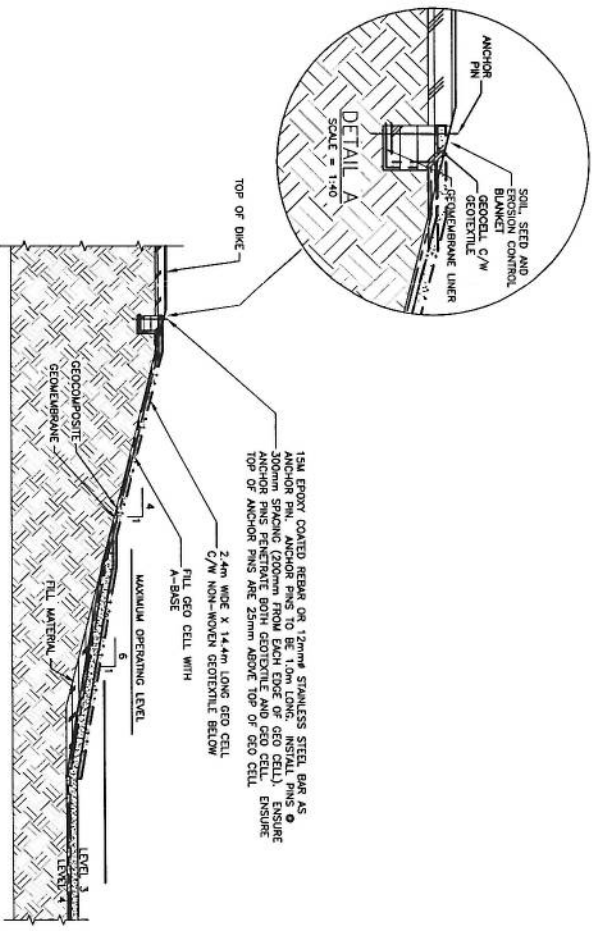
PRELIMINARY
NOT FOR CONSTRUCTION

B.M. E.L.		ENGINEER'S SEAL		PRELIMINARY	<p>JR Cousin Consultants Ltd. 91A Scurlfield Blvd, Winnipeg MB R3V 1G4 P: (204) 489-0474 F: (204) 489-0487 www.jrc.ca</p>	CODE: M-706.01	PROJECT: MUNICIPALITY OF WINTONONGS-BOONVILLE WASTEWATER LAGOON UPGRADE
REVISIONS		DATE	INITIALS			TITLE: NOTICE OF ALTERATION LINER, TRUCK TURNAROUND AND DEGASSING/DEWATERING PIPE DETAILS	DESIGNED BY: OW
					<p>LOCATIONS OF UNDERGROUND STRUCTURES/VENTURES AS SHOWN ARE BASED ON AVAILABLE INFORMATION BUT NO UNDERGROUND STRUCTURES/VENTURES ARE SHOWN OR THAT THE OWN LOCATIONS ARE EXACT. CONFIRMATION OF UNDERGROUND STRUCTURES/VENTURES MUST BE OBTAINED FROM THE APPROPRIATE AUTHORITY/OWNER BY THE CONTRACTOR, BEFORE PROCEEDING WITH CONSTRUCTION.</p>	<p>DRAWN BY: RH</p>	SCALE: AS NOTED
					<p>REVIEWED BY: JD</p>	SCALE: AS NOTED	
					<p>DATE: 16/03/18</p>	SHEET: 2	2 of 3



PICTURE OF TYPICAL ESCAPE RAMP DURING CONSTRUCTION
SCALE = NTS

GEOCELL TO BE FILLED TOP TO BOTTOM WITH GRANULAR MATERIAL



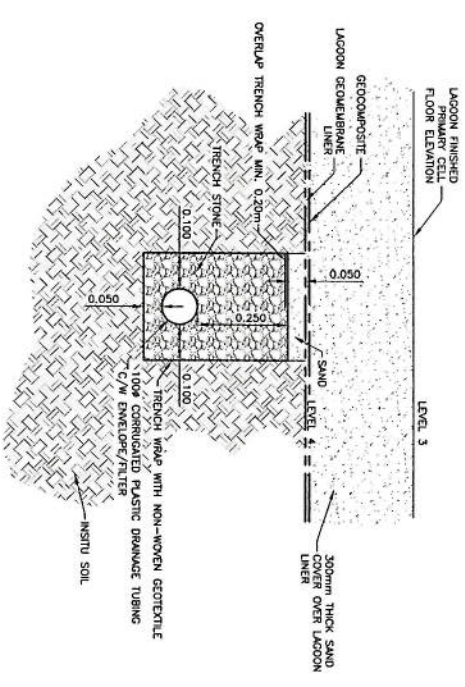
TYPICAL ESCAPE RAMP DETAIL
SCALE = 1:100

LEGEND

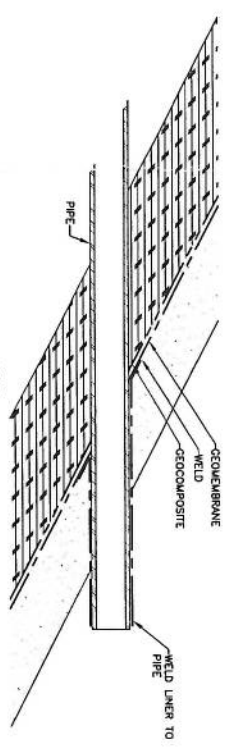
	INSITU MATERIAL SUITABLE FOR LINER BEDDING		CONCRETE
	IF MATERIAL IS NOT SUITABLE, REMOVE 200mm DIRECTED BY ENGINEER		TRENCH STONE
	PLACE SUITABLE COVER MATERIAL FOR LINER		TOPSOIL
	EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION		SEEDED GROUND
	INSITU SOIL		

LEVELS

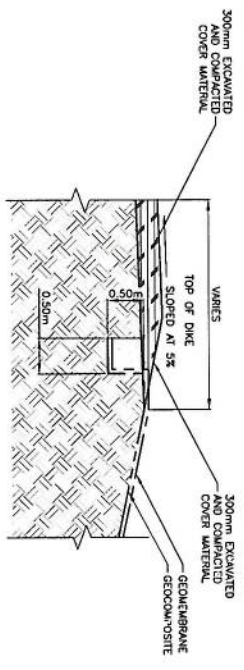
LEVEL 1	PRE-CONSTRUCTION EXISTING PREGRADE ELEVATION
LEVEL 2	ELEVATION FOLLOWING TOPSOIL REMOVAL
LEVEL 3	FINISHED CELL BOTTOM ELEVATION
LEVEL 5	LEVEL OF EARTHWORK PRIOR TO BEDDING



TILE DEWATERING/DEGASSING SYSTEM DETAIL
SCALE = 1:10



TYPICAL PIPE BOOT CONNECTION DETAIL
SCALE = NTS



TYPICAL PERIMETER DIKE LINER ANCHORING DETAIL
SCALE = 1:50

No.	REVISIONS	DATE	INITIALS

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ENGINEER'S SEAL
PRELIMINARY



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CODE: M-706.01	PROJECT: MUNICIPALITY OF WINTONOKS-BOWSMAN WASTEWATER LAGOON UPGRADE
DRAWN BY: OW	TITLE: NOTICE OF ALTERATION LINER, ESCAPE RAMP AND DEGASSING/DEWATERING PIPE DETAILS
CHECKED BY: RH	SCALE: AS NOTED
DATE: 16/03/18	DATE: 16/03/18
PLN: 3	SHEET: 3 of 3

PRELIMINARY
NOT FOR CONSTRUCTION