

Mar 16, 2018 - 1:23pm P:\1001\WB La Broquerie\La Broquerie\WasteWater Treatment\Design\Pre-Design and Design\04_Design\WorkSpace\Drawings\Layout\L2.dwg

No.	REVISIONS	DATE	INITIALS	B.M. EL.
3	AS BUILT DRAWING	2018/03	RH	REFER TO PLAN G12 FOR BENCHMARK LOCATION
2	ADDED PRE-TENDER TEST HOLES	2016/08/31	BM	
1	ISSUED FOR TENDER	2016/08	OT	

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.

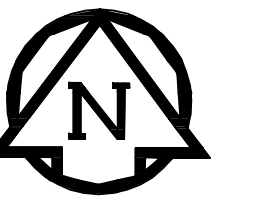
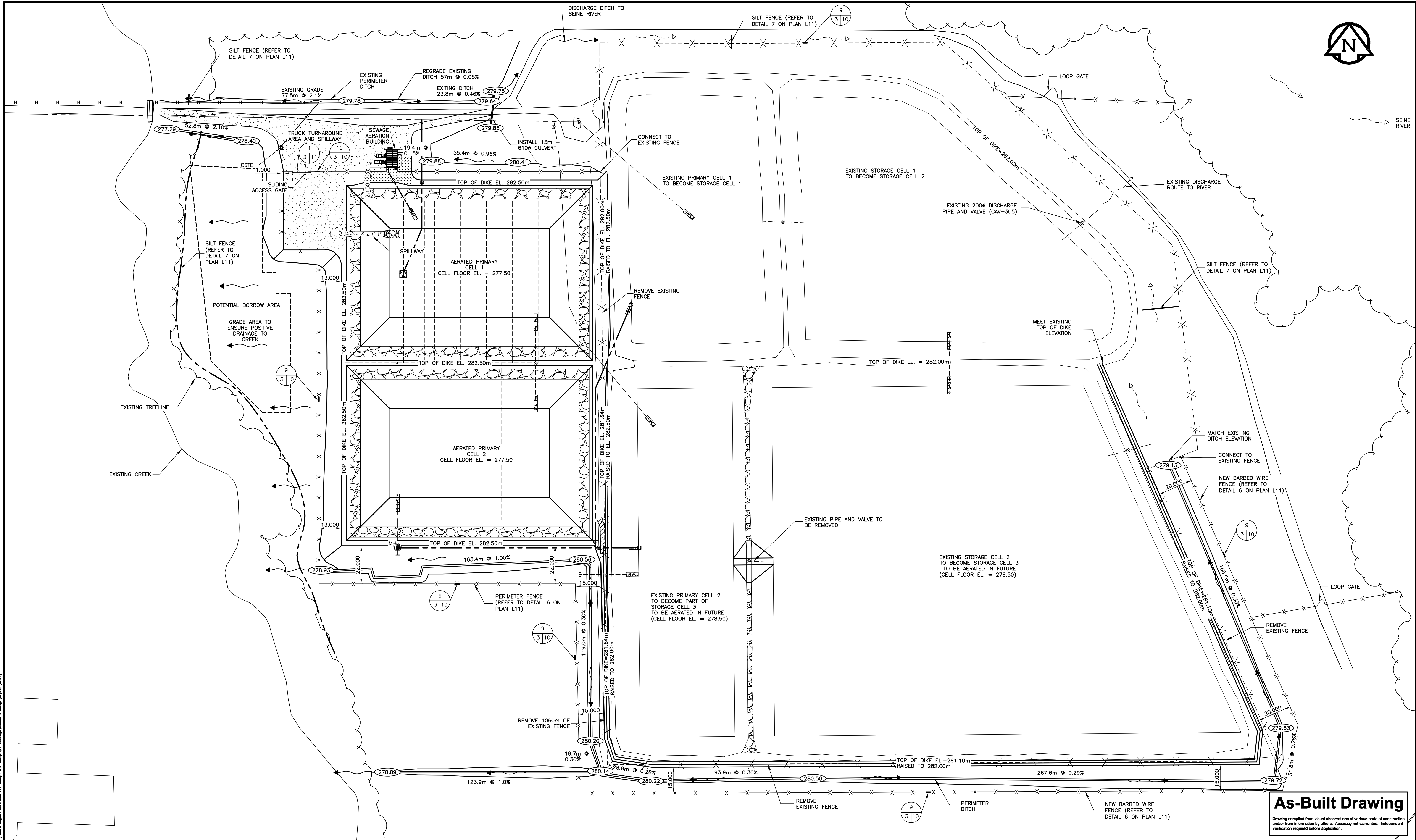
Certificate of Authorization
J.R. Cousin Consultants Ltd.
No. 234 Date: 16/08/18

ENGINEER'S SEAL
ORIGINAL DRAWING
SIGNED AND SEALED
BY
B.J.D. MCCORMAC
16/08/18

JR Cousin Consultants Ltd.
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ENGINEERING EXCELLENCE SINCE 1981

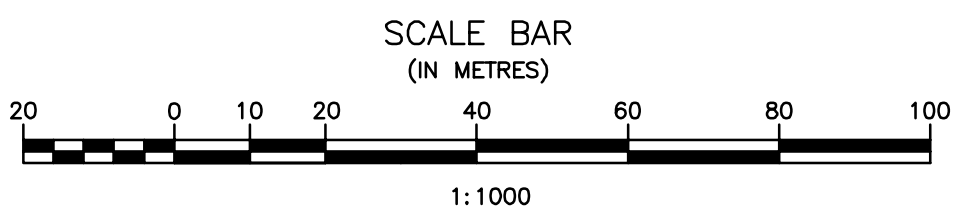
CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: AERATED LAGOON LAYOUT PLAN
DRAWN BY: OT	
REVIEWED BY: JC	
SCALE: 1:1000	DATE: 15/05/26
PLAN: L2	SHEET: 4 of 34

As-Built Drawing
Drawing compiled from visual observations of various parts of construction and/or from information by others. Accuracy not warranted. Independent verification required before application.



As-Built Drawing

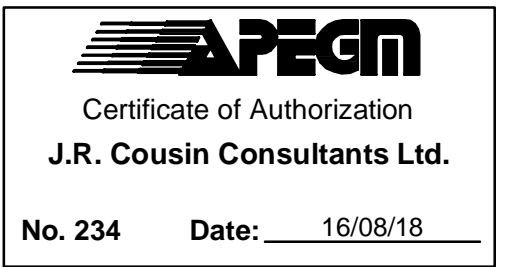
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No.	REVISIONS	DATE	INITIALS
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1	ISSUED FOR TENDER	2016/08	OT

B.M. EL.
REFER TO PLAN G12 FOR BENCHMARK LOCATION

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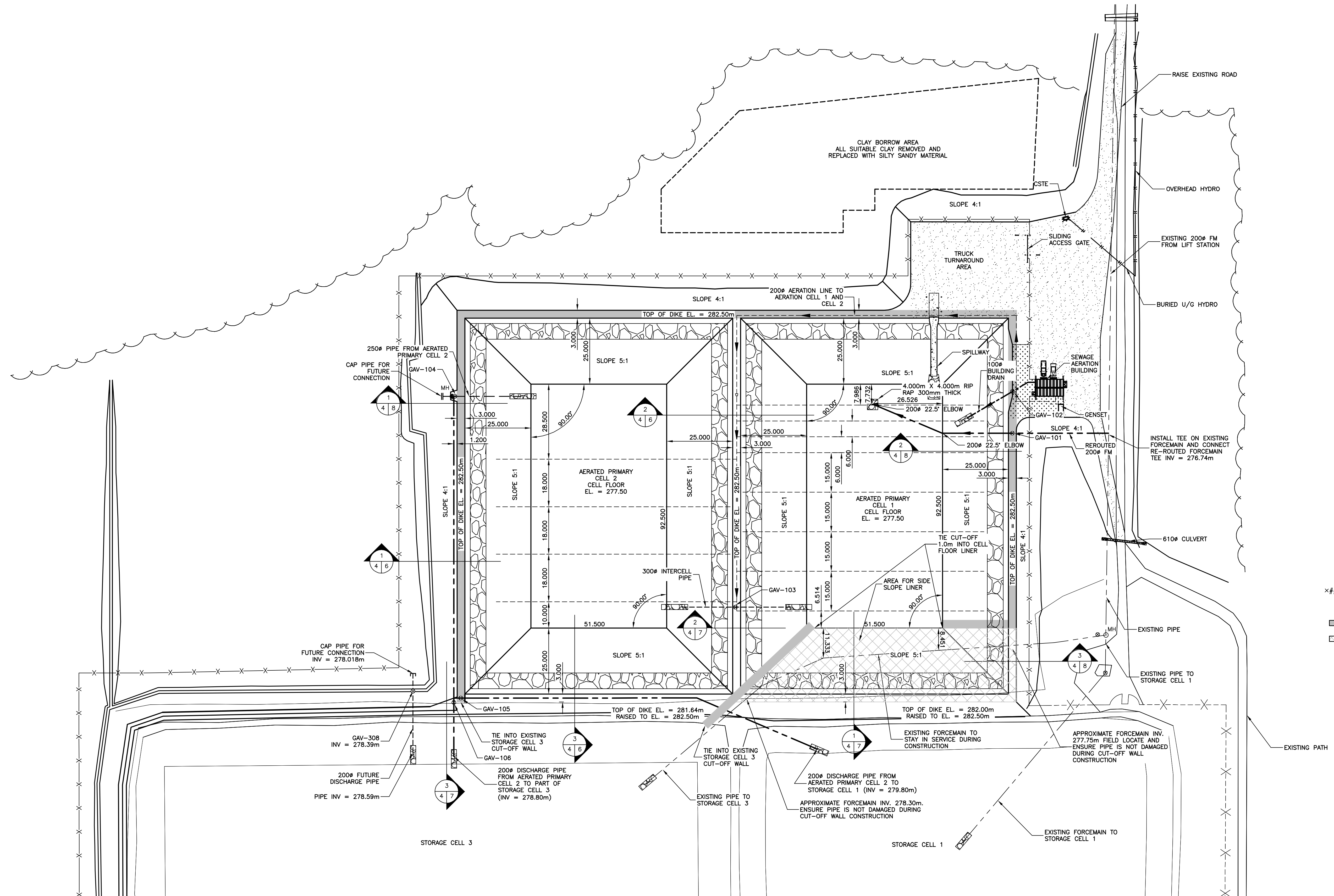
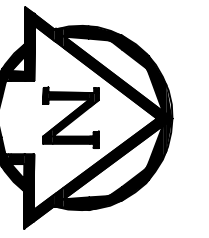


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CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: AERATED LAGOON SITE DRAINAGE AND PERIMETER FENCING PLAN
DRAWN BY: OT	
REVIEWED BY: JC	
SCALE: 1:1000	DATE: 15/05/26
PLAN: L3	SHEET: 5 of 34

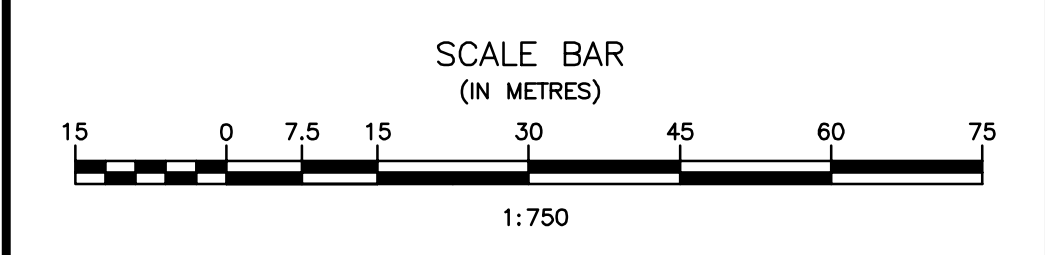


- NOTES:
- ×××××× = EXISTING GROUND
 - = FLOW DIRECTION
 - - - - - = VERTICAL CUT-OFF WALL
 - ▨ = SIDE SLOPE LINER

AERATED PRIMARY CELL 1 AND CELL 2 LAYOUT

SCALE = 1:750

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No.	REVISIONS	DATE	INITIALS
3	AS BUILT DRAWING	2018/03	RH
2	REVISED FOR SIDE SLOPE LINER	17/07/19	BM
1	ISSUED FOR TENDER	2016/08	OT

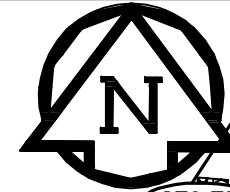
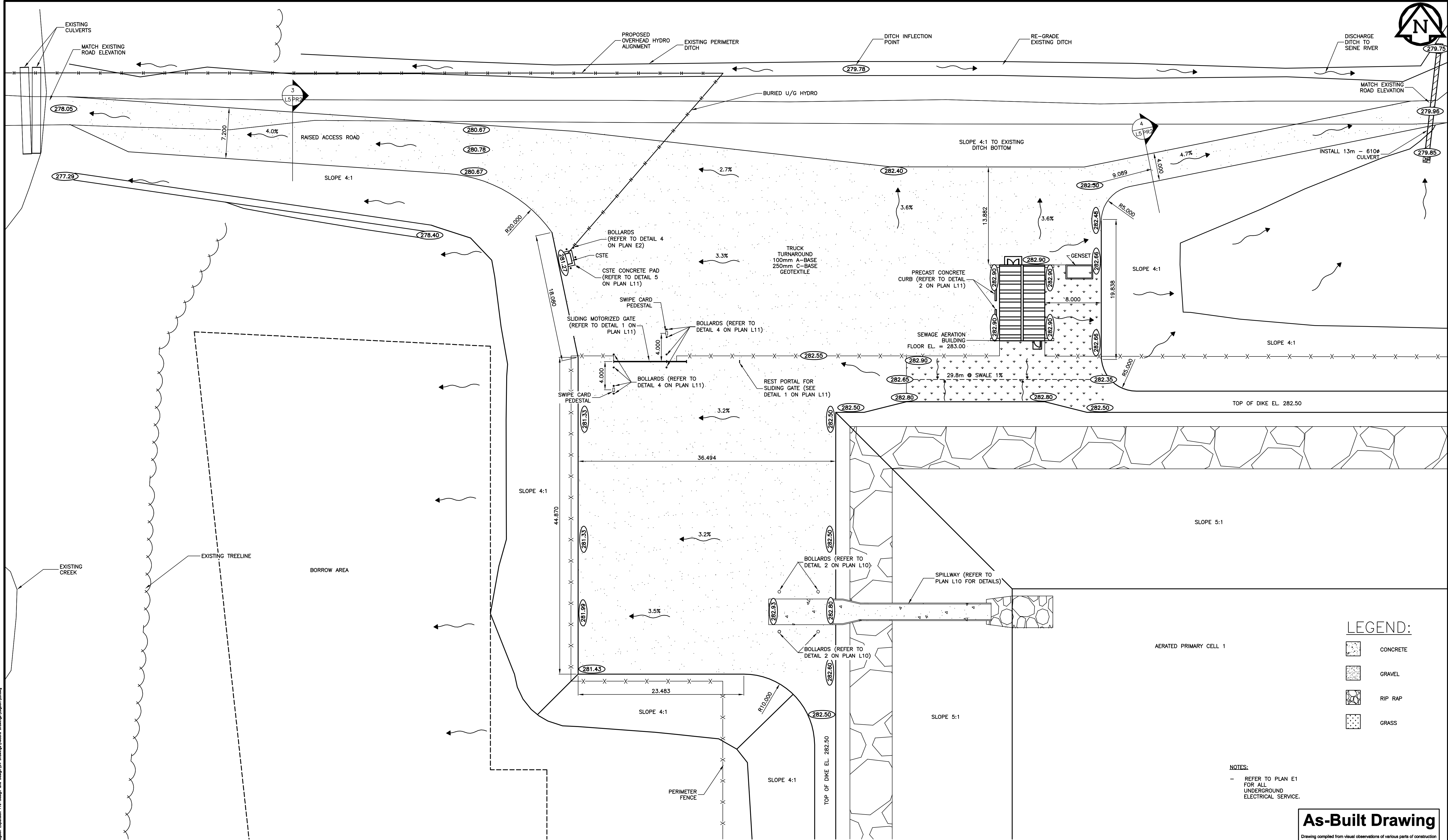
B.M. EL.		
REFER TO PLAN G12 FOR BENCHMARK LOCATION		
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ENGINEERING EXCELLENCE SINCE 1981

CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: PROPOSED LAGOON EXPANSION WITH AERATED PRIMARY CELL 1 AND CELL 2
DRAWN BY: OT	
REVIEWED BY: JC	
SCALE: 1:750	DATE: 16/07/20
PLAN: L4	SHEET: 6 of 34



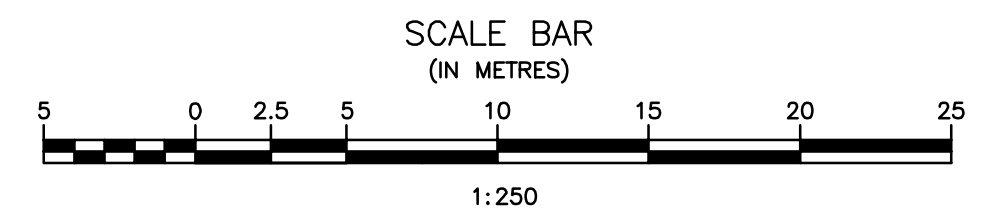
LEGEND:

- CONCRETE
- GRAVEL
- RIP RAP
- GRASS

NOTES:
 - REFER TO PLAN E1 FOR ALL UNDERGROUND ELECTRICAL SERVICE.

As-Built Drawing

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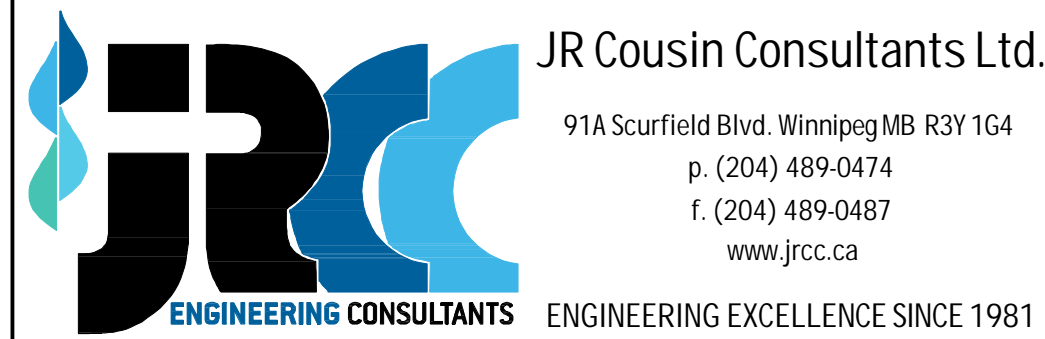
No.	REVISIONS	DATE	INITIALS
2	AS BUILT DRAWING	2018/03	RH
1	ISSUED FOR TENDER	2016/08	OT

B.M. EL.
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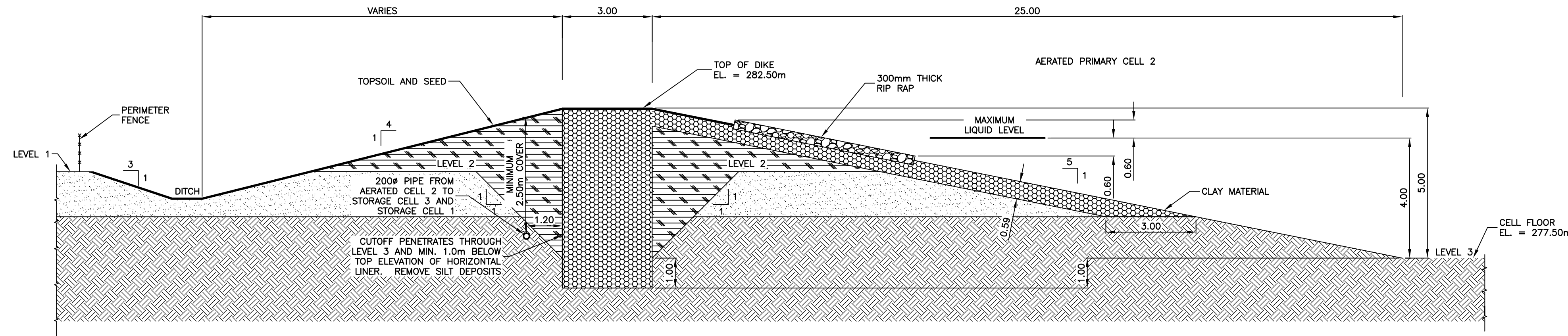
CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: AERATED LAGOON TRUCK TURNAROUND, BUILDING LOCATION AND GRADING PLAN
DRAWN BY: OT	SCALE: 1:250
REVIEWED BY: JC	DATE: 15/05/26
	PLAN: L5
	SHEET: 7 of 34

Mar. 16, 2018 - 2:33pm F:\100\100198 La Broquerie\A\169.75 Lagoon Expansion Pre-Design and Design\04 Drawings\0001 Lagoon\LA.dwg

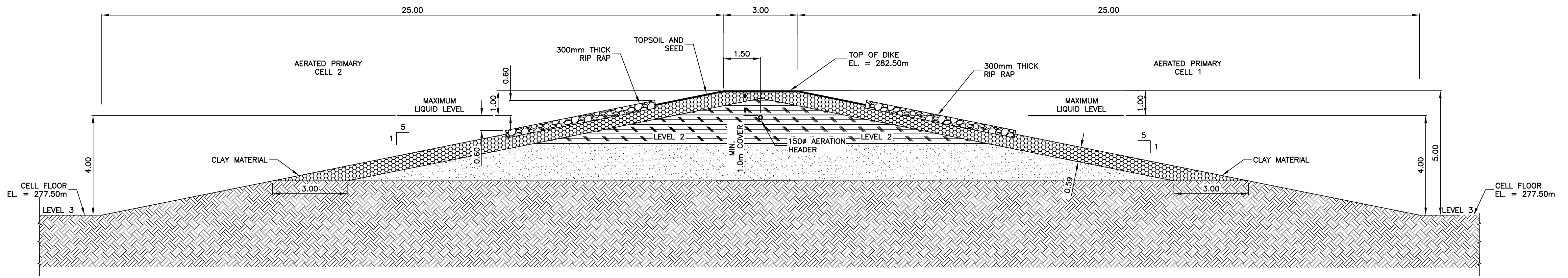
LEGEND:

	EXCAVATED AND COMPACTED MEDIUM TO HIGH PLASTIC CLAY		TOPSOIL
	EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION, MAX. 50% TOPSOIL		EXISTING DIKE
	INSITU INORGANIC MEDIUM TO HIGH PLASTIC CLAY		EXISTING LINER - EXCAVATED, REWORKED AND COMPACTED MEDIUM TO HIGH PLASTICITY CLAY TYPE SOIL
	SILTY SANDS, SAND-SILT MIXTURES		EXISTING COMPACTED CLAY FILL
	RIP RAP		EXISTING COMPACTED SAND CLAY MIXTURE
	CONCRETE		A-BASE
			C-BASE

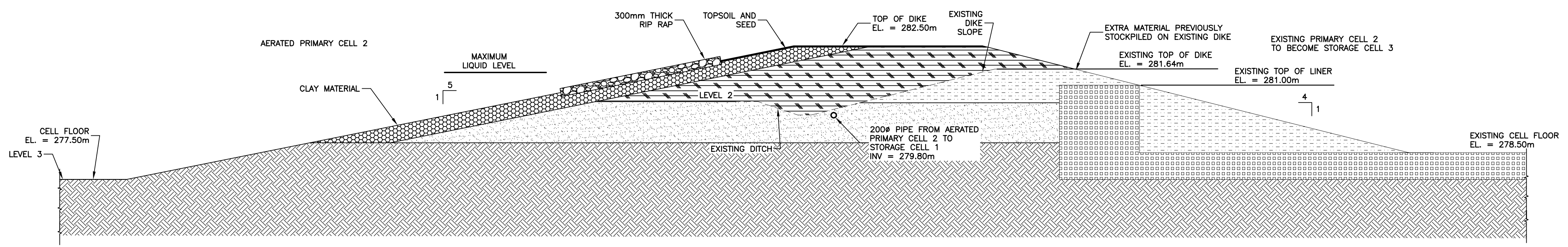
LEVEL 1 - PRE-CONSTRUCTION EXISTING PRAIRIE ELEVATION
 LEVEL 2 - ELEVATION FOLLOWING STRIPPED ORGANICS/VEGETATION
 LEVEL 3 - FINISHED CELL BOTTOM ELEVATION
 LEVEL 2 AND 3 - TO BE COMPACTED WITH SHEEPSFOOT PACKER



PERIMETER DIKE OF NEW AERATED PRIMARY CELL 2
 SCALE = 1:100



INTERCELL DIKE OF NEW AERATED PRIMARY CELL
 SCALE = 1:100



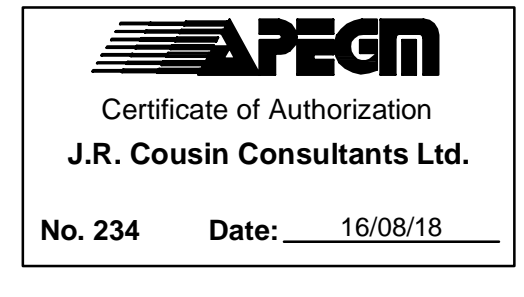
UPGRADED INTERCELL DIKE BETWEEN AERATED PRIMARY CELL 2 AND EXISTING STORAGE CELL 3
 SCALE = 1:100

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1	ISSUED FOR TENDER	2016/08	OT

B.M. EL.
 REFER TO PLAN G12 FOR BENCHMARK LOCATION



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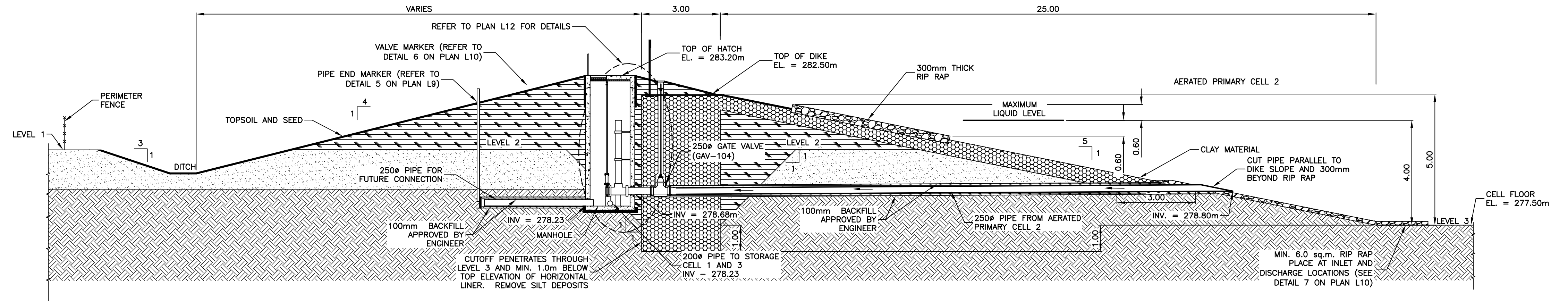
CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: DIKE CROSS SECTIONS
DRAWN BY: OT	SCALE: 1:100
REVIEWED BY: JC	DATE: 15/05/26
	PLAN: L6
	SHEET: 8 of 34

Mar. 26, 2018 - 2:28pm P:\1300\RM La Broquerie\15679 Lagoon Expansion Pre-Design and Design\LA Broquerie\Design\Lagoon\LA L6.dwg L15.dwg

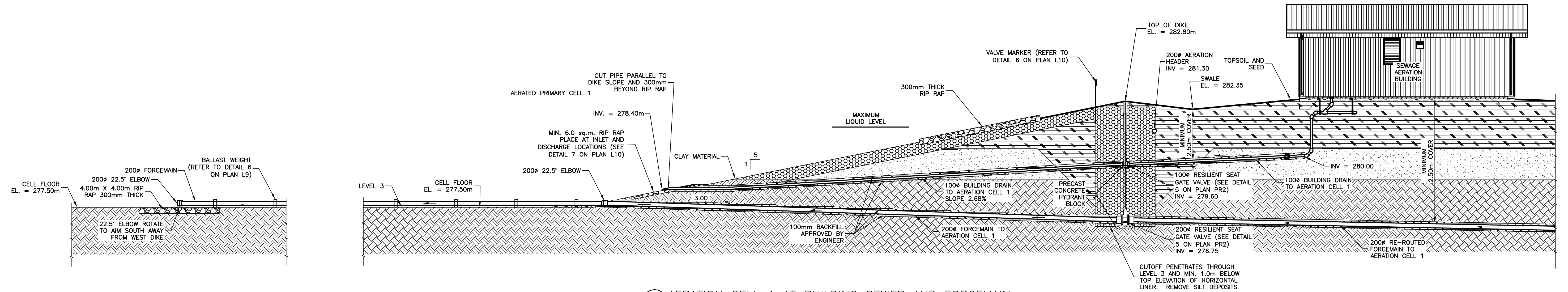
LEGEND:

	EXCAVATED AND COMPACTED MEDIUM TO HIGH PLASTIC CLAY		TOPSOIL
	EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION, MAX. 50% TOPSOIL		EXISTING DIKE
	INSITU INORGANIC MEDIUM TO HIGH PLASTIC CLAY		EXISTING LINER - EXCAVATED, REWORKED AND COMPACTED MEDIUM TO HIGH PLASTICITY CLAY TYPE SOIL
	SILTY SANDS, SAND-SILT MIXTURES		EXISTING COMPACTED CLAY FILL
	RIP RAP		EXISTING COMPACTED SAND CLAY MIXTURE
	CONCRETE		A-BASE
			C-BASE

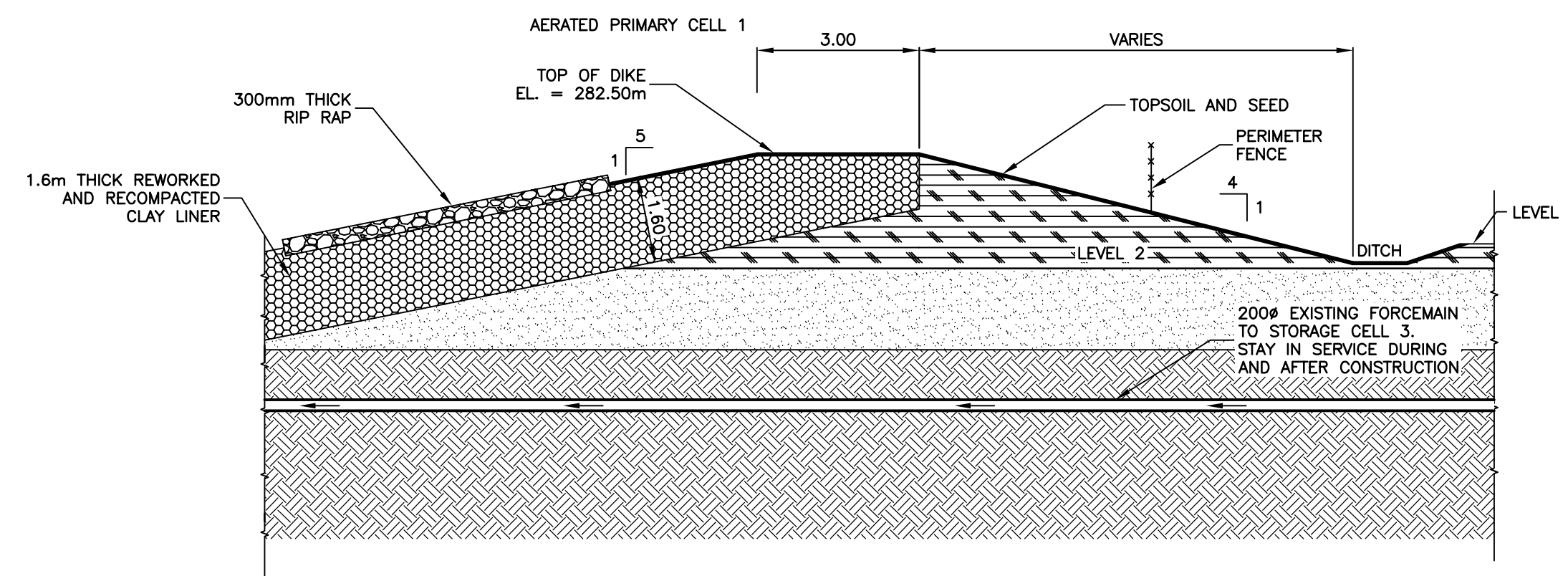
LEVEL 1 - PRE-CONSTRUCTION EXISTING PRAIRIE ELEVATION
 LEVEL 2 - ELEVATION FOLLOWING STRIPPED ORGANICS/VEGETATION
 LEVEL 3 - FINISHED CELL BOTTOM ELEVATION
 LEVEL 2 AND 3 - TO BE COMPACTED WITH SHEEPSFOOT PACKER



1 PERIMETER DIKE AT MANHOLE
 SCALE = 1:100



2 AERATION CELL 1 AT BUILDING SEWER AND FORCEMAIN
 SCALE = 1:100



3 PERIMETER DIKE AT EXISTING FORCEMAIN
 SCALE = 1:100

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No.	REVISIONS	DATE	INITIALS	B.M. EL.
2	AS BUILT DRAWING	2018/03	RH	REFER TO PLAN G12 FOR BENCHMARK LOCATION
1	ISSUED FOR TENDER	2016/08	OT	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.

APECM
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 No. 234 Date: 16/08/18

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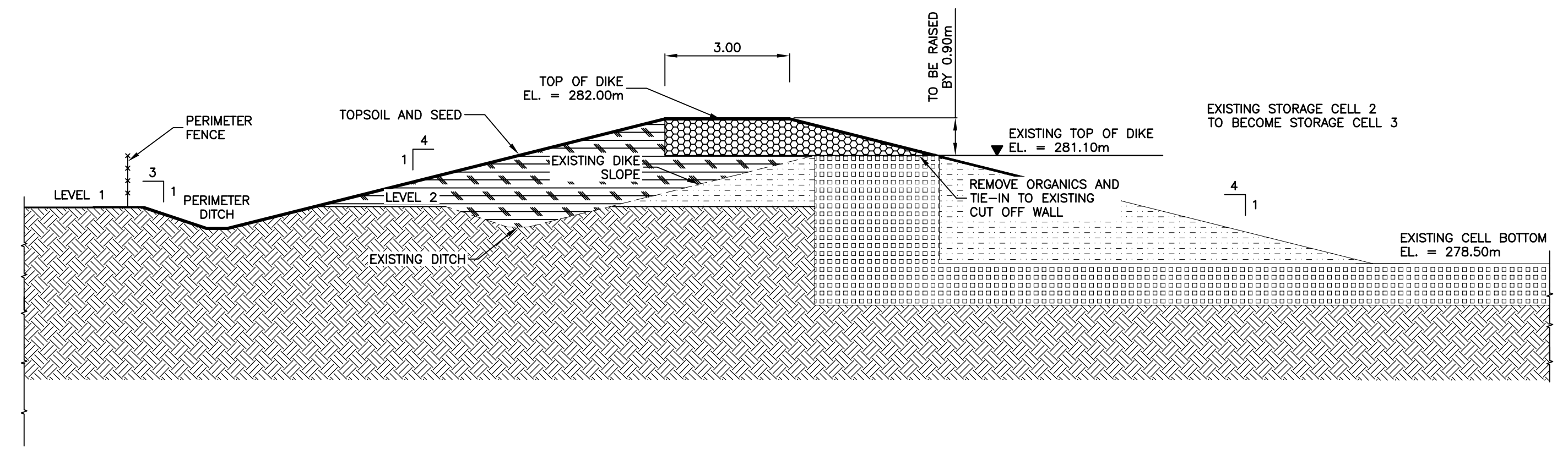
CODE: L-169.75	PROJECT: RM OF LA BROQUIER WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: DIKE CROSS SECTIONS
DRAWN BY: OT	
REVIEWED BY: JC	
SCALE: 1:100	DATE: 15/05/26
PLAN: L8	SHEET: 10 of 34

Mar. 16, 2018 - 2:28pm F:\100\100 La Broquiere\11875 Lagoon Expansion Pre-Design and Design\11875 Lagoon\LA L7 L8 L9 L10 L11.dwg

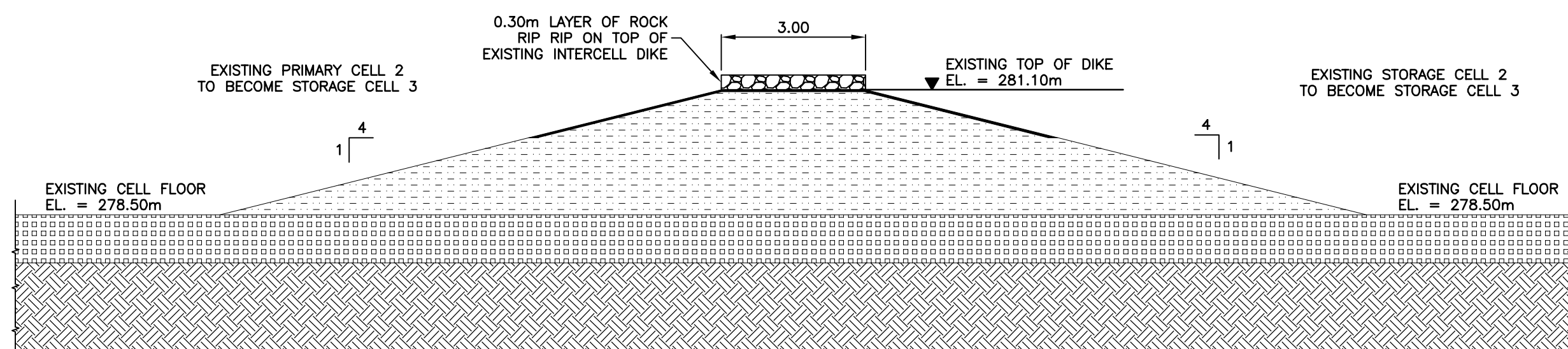
LEGEND:

- | | | | |
|--|--|--|---|
| | EXCAVATED AND COMPACTED MEDIUM TO HIGH PLASTIC CLAY | | TOPSOIL |
| | EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION, MAX. 50% TOPSOIL | | EXISTING DIKE |
| | INSITU INORGANIC MEDIUM TO HIGH PLASTIC CLAY | | EXISTING LINER - EXCAVATED, REWORKED AND COMPACTED MEDIUM TO HIGH PLASTICITY CLAY TYPE SOIL |
| | SILTY SANDS, SAND-SILT MIXTURES | | EXISTING COMPACTED CLAY FILL |
| | RIP RAP | | EXISTING COMPACTED SAND CLAY MIXTURE |
| | CONCRETE | | A-BASE |
| | | | C-BASE |

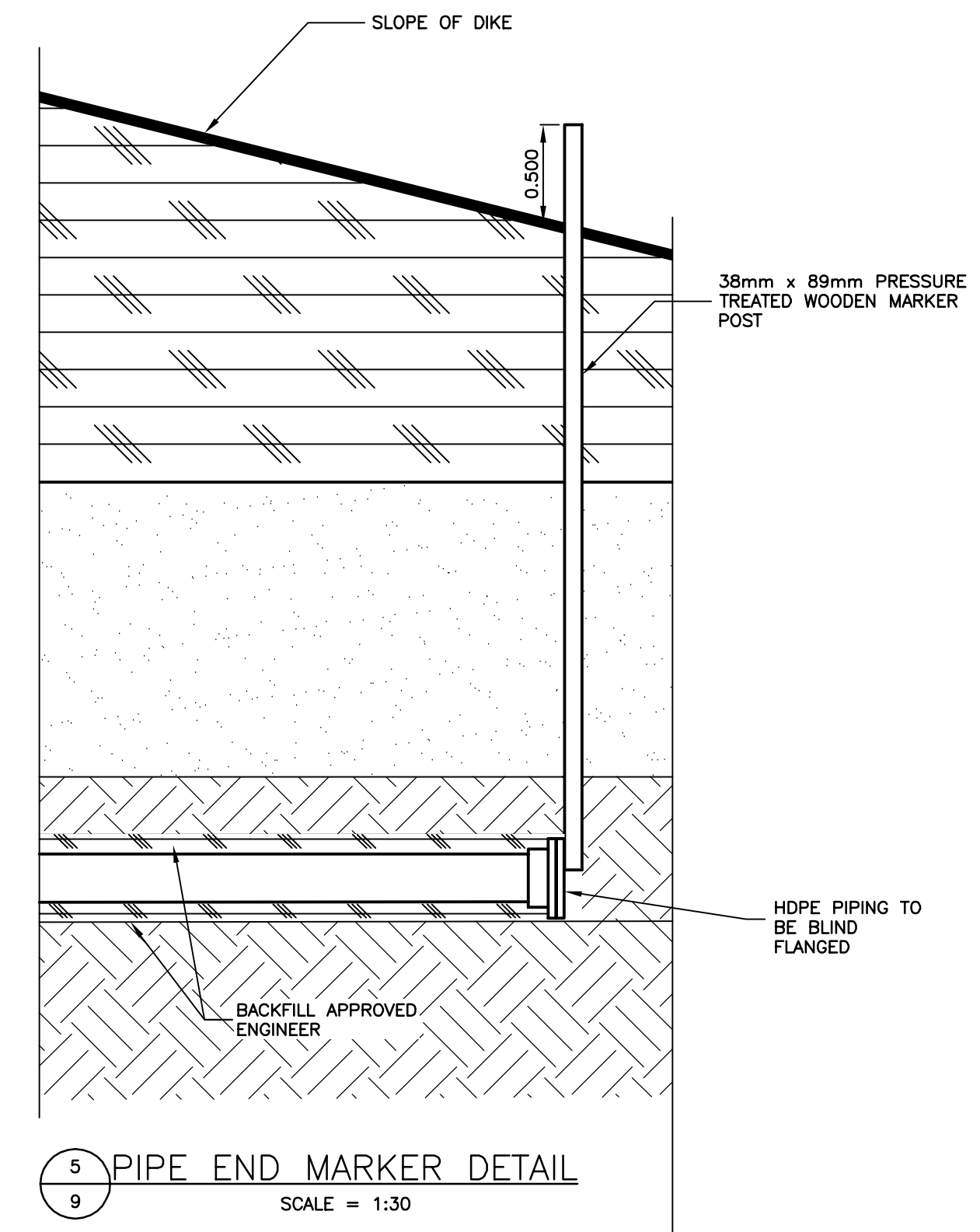
LEVEL 1 - PRE-CONSTRUCTION EXISTING PRAIRIE ELEVATION
 LEVEL 2 - ELEVATION FOLLOWING STRIPPED ORGANICS/VEGETATION
 LEVEL 3 - FINISHED CELL BOTTOM ELEVATION
 LEVEL 2 AND 3 - TO BE COMPACTED WITH SHEEPSFOOT PACKER



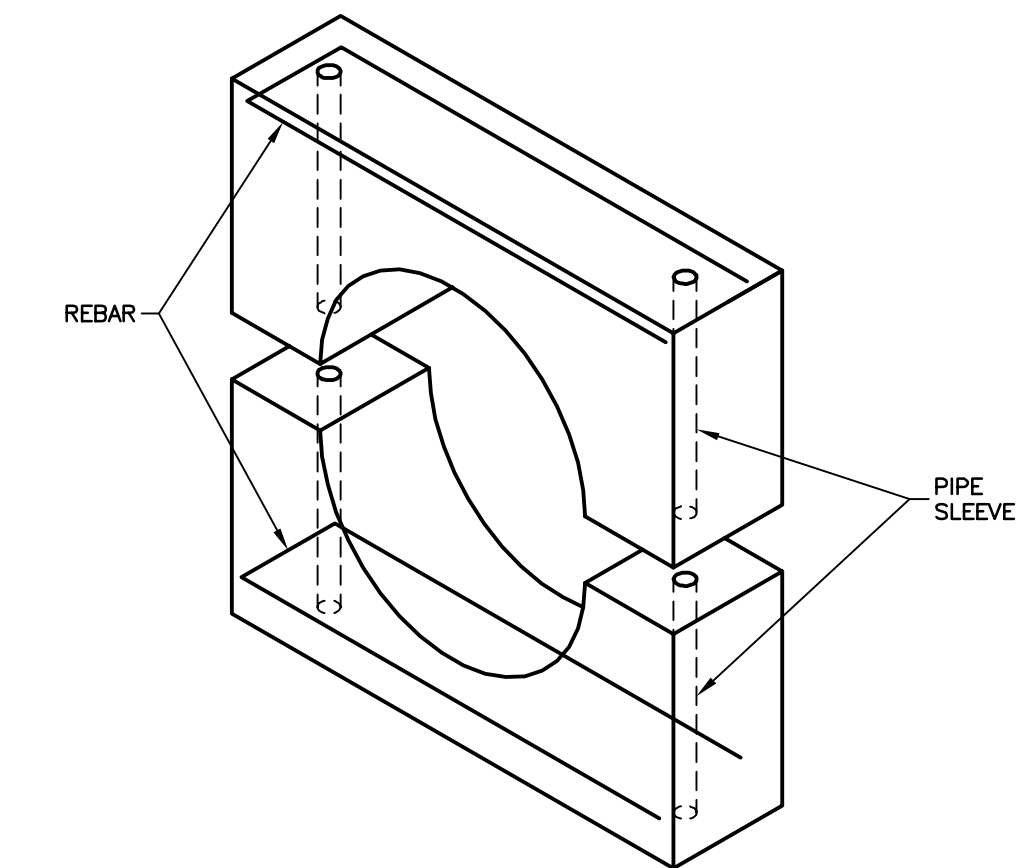
1 UPGRADED STORAGE CELL 3
 SCALE = 1:100



2 UPGRADED INTERCELL DIKE IN STORAGE CELL 3
 SCALE = 1:100

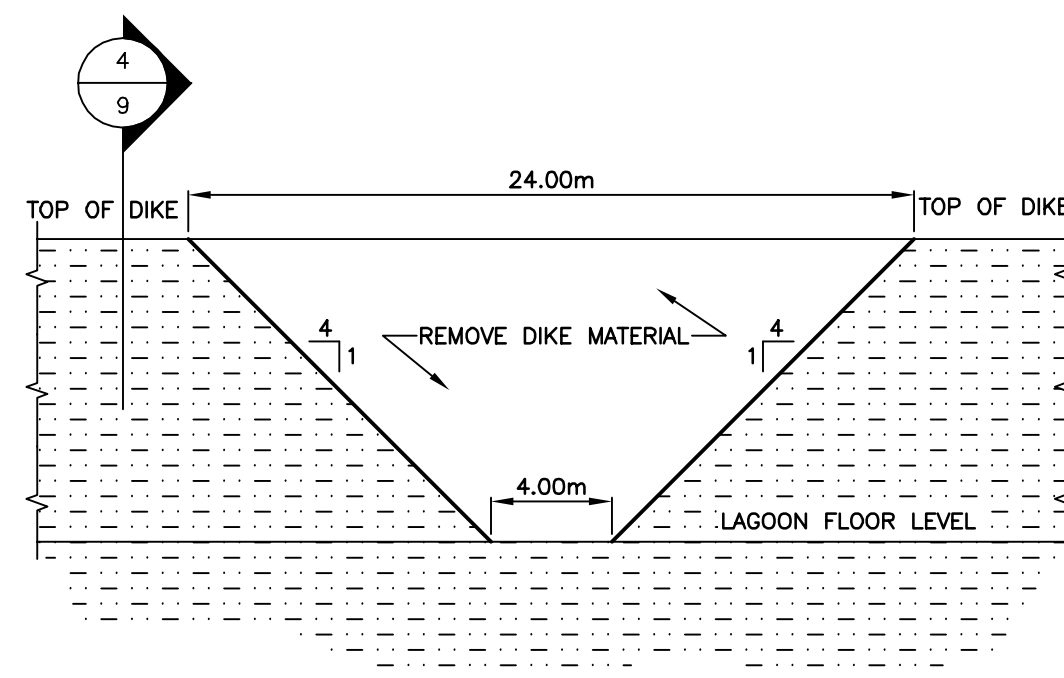


5 PIPE END MARKER DETAIL
 SCALE = 1:30

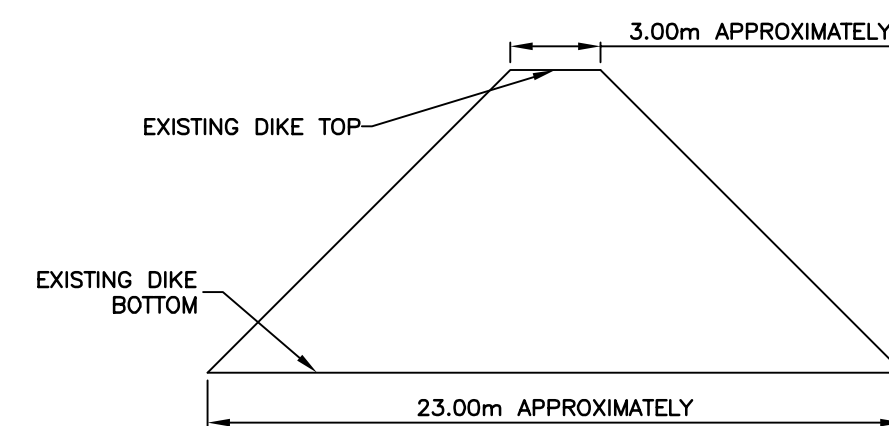


- BALLAST WEIGHT NOTES:**
- PROVIDE CONCRETE BALLAST WEIGHTS ON ALL PIPING AS SHOWN.
 - WEIGHTS TO BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - SPACING OF WEIGHTS TO ASSUME PIPE IS FILLED WITH 50% AIR, AND MAXIMUM 2.0m SPACING.
 - ALL BOLTS AND NUTS ON WEIGHTS TO BE STAINLESS STEEL.
 - USE MINIMUM 25MPa CONCRETE.
 - USE MINIMUM 3mm BLACK OR RED RUBBER SHEET BETWEEN WEIGHT AND PIPE.
 - USE REINFORCING STEEL IN WEIGHT TO PREVENT CRACKING.
 - PROVIDE SHOP DRAWINGS OF WEIGHTS AND PROPOSED SPACING.

6 BALLAST WEIGHT DETAIL FOR FORCEMAIN PIPING
 SCALE = 1:10



3 DIKE SECTION REMOVAL DETAIL
 HOR = 1:250
 VER = 1:50

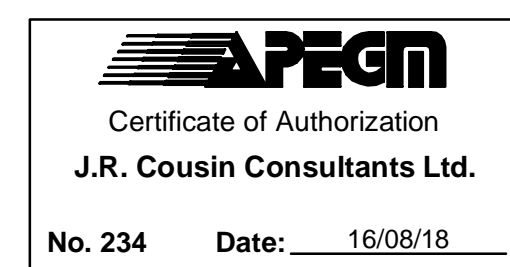


4 DIKE SECTION REMOVAL DETAIL
 HOR = 1:250
 VER = 1:50

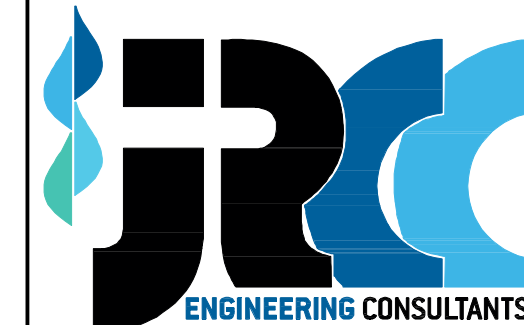
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




ENGINEER'S SEAL
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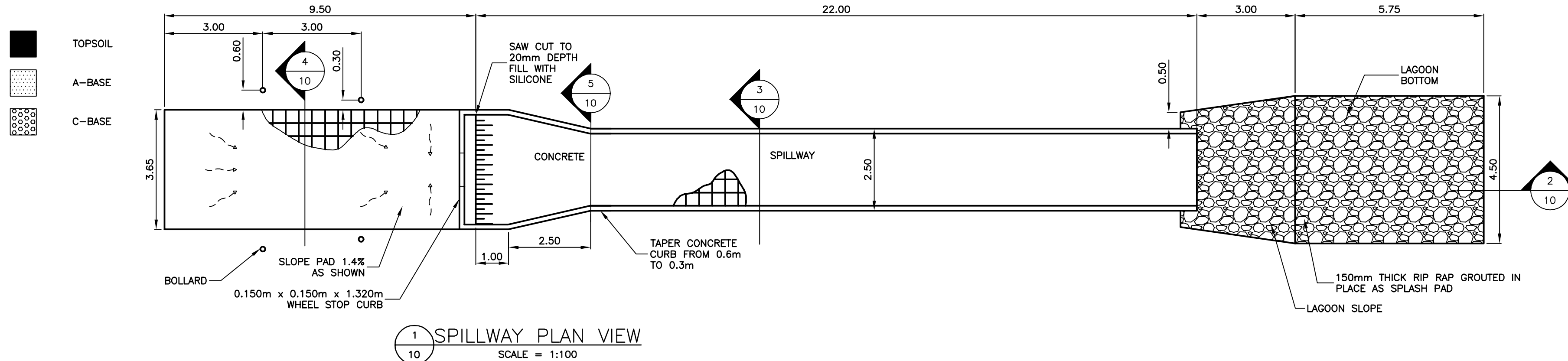


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 www.jrcc.ca

CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: DIKE CROSS SECTIONS, PIPE END MARKER AND BALLAST WEIGHT DETAILS
DRAWN BY: OT	SCALE: AS NOTED
REVIEWED BY: JC	DATE: 15/05/26
	PLAN: L9
	SHEET: 11 of 34

LEGEND:

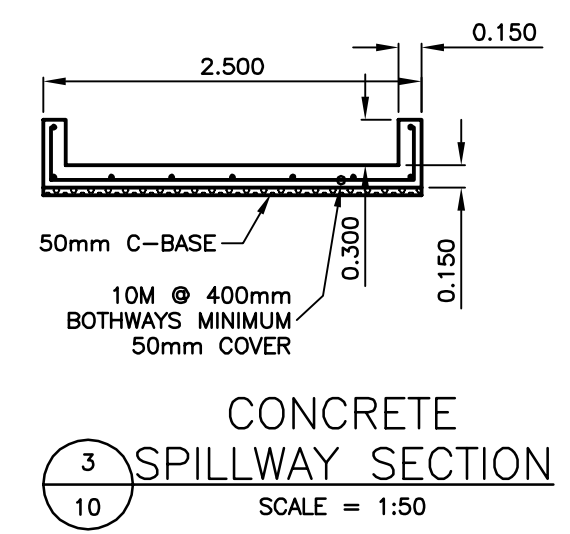
-  EXCAVATED AND COMPACTED MEDIUM TO HIGH PLASTIC CLAY
-  EXCAVATED AND COMPACTED SOILS SUITABLE FOR DIKE CONSTRUCTION
-  INSITU INORGANIC MEDIUM TO HIGH PLASTIC CLAY
-  RIP RAP
-  CONCRETE



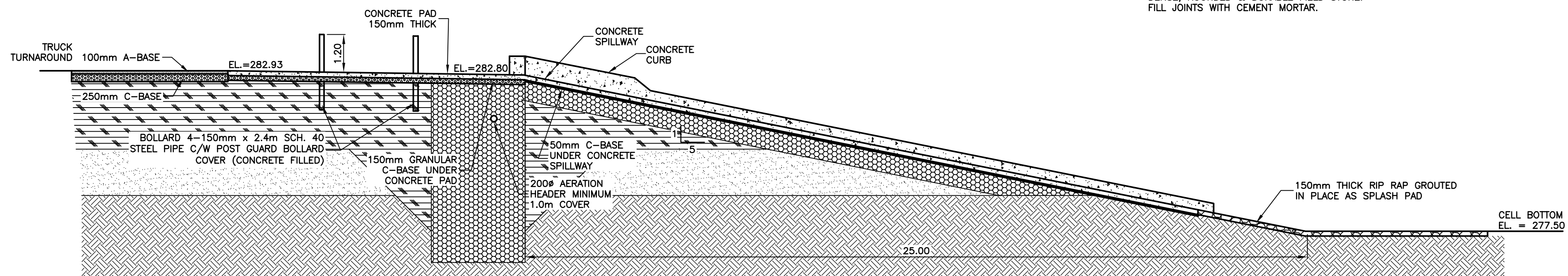
1 SPILLWAY PLAN VIEW SCALE = 1:100

CONCRETE NOTE:

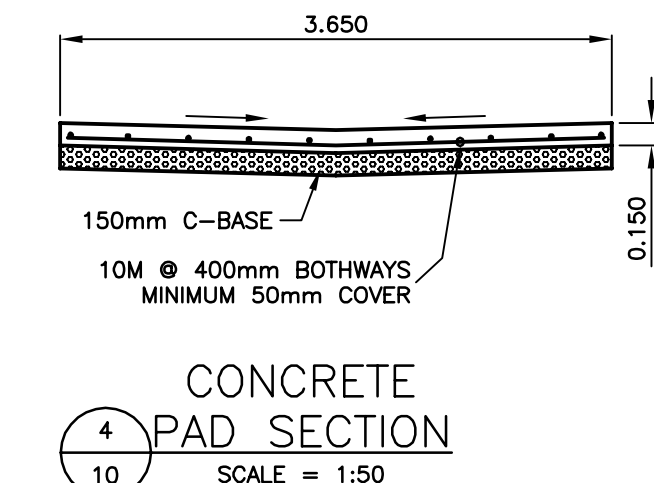
- CONCRETE SHALL BE:
- TYPE HS PORTLAND CEMENT MINIMUM 28 DAY COMPRESSION OF 32 MPa
- 5-8% AIR CONTENT
- MAXIMUM AGGREGATE SIZE OF 20mm
- MAXIMUM SLUMP OF 100mm



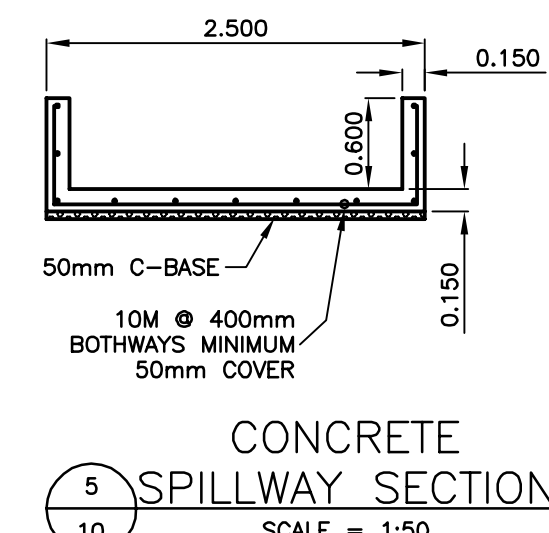
3 SPILLWAY SECTION SCALE = 1:50



2 SPILLWAY SECTION SCALE = 1:100



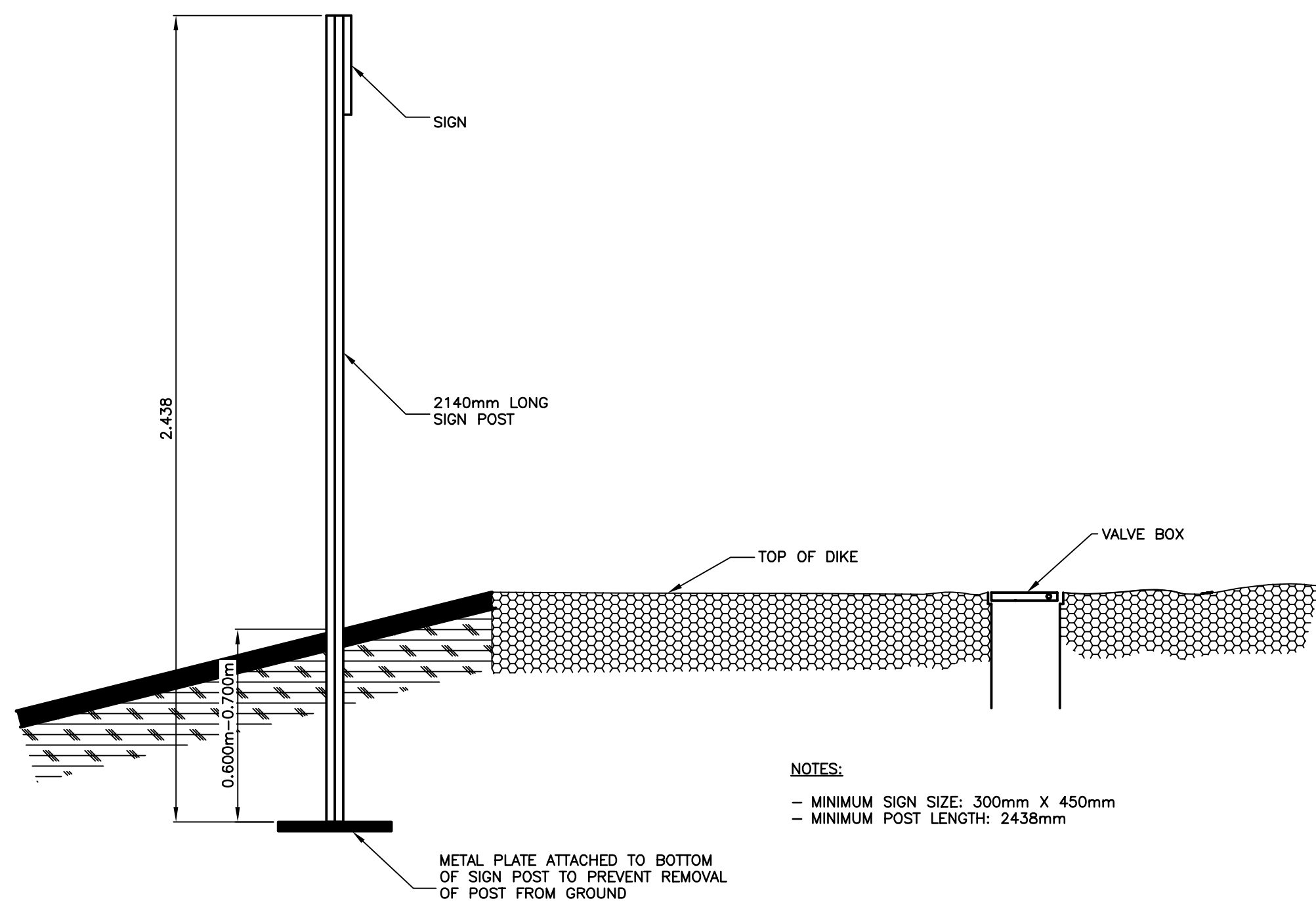
4 CONCRETE PAD SECTION SCALE = 1:50



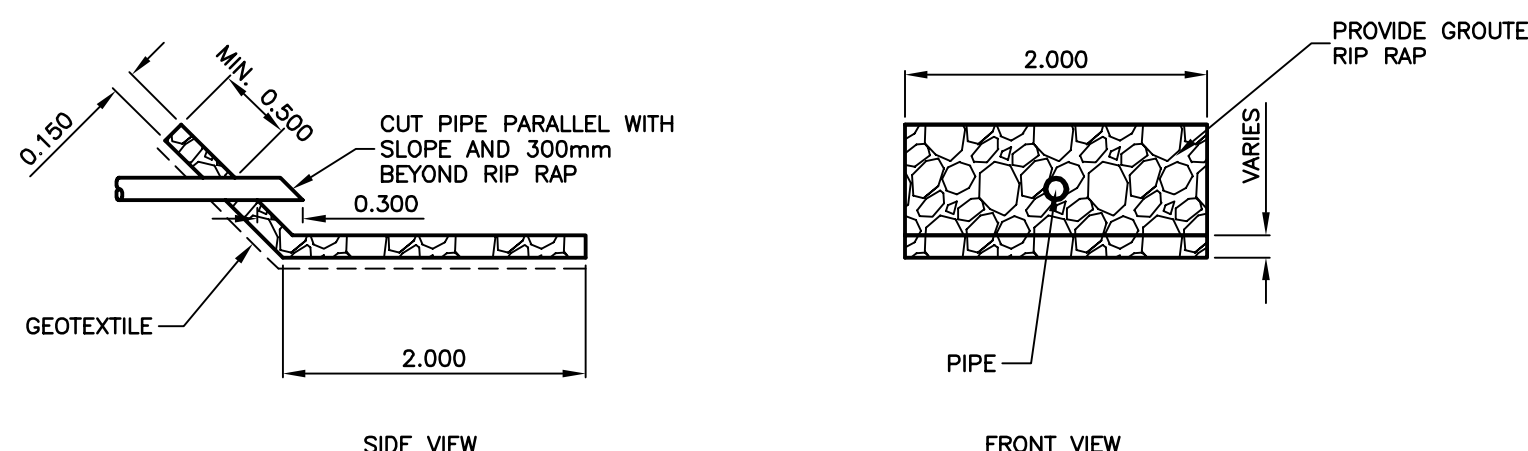
5 CONCRETE SPILLWAY SECTION SCALE = 1:50

RIP RAP NOTE:

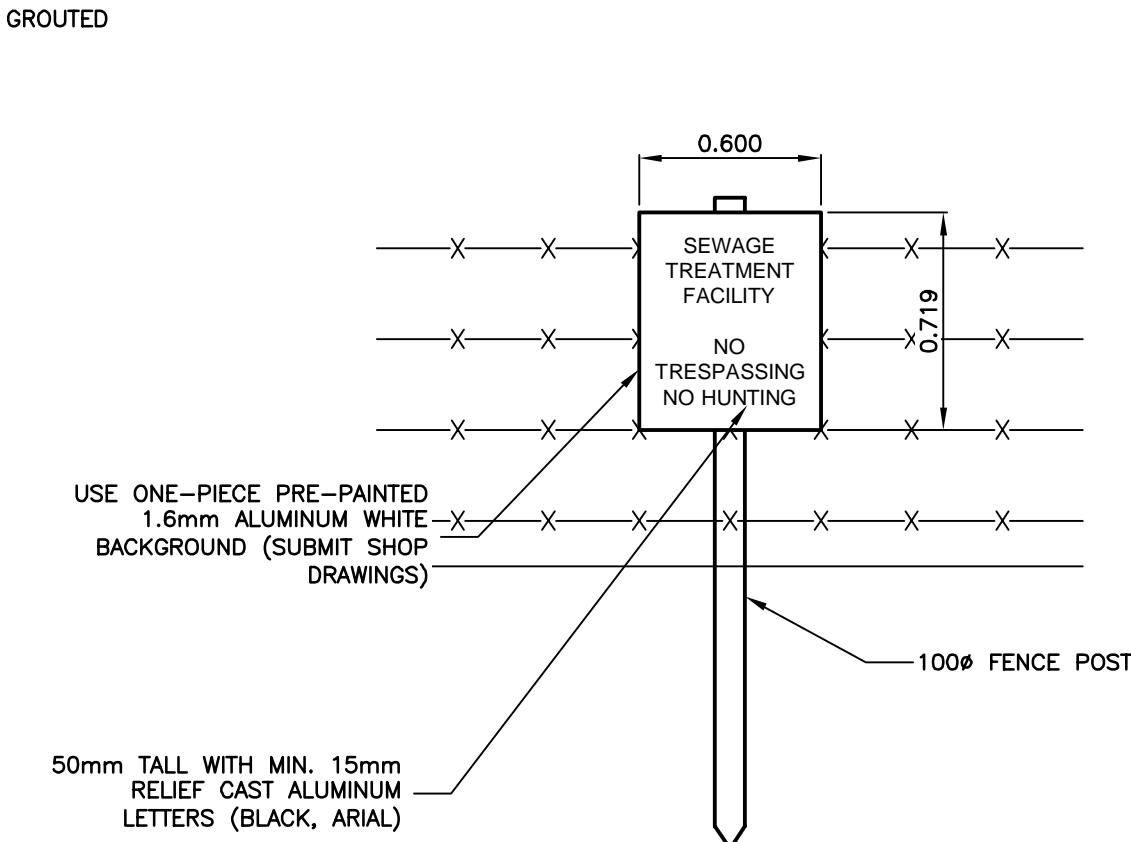
- RIP RAP MATERIAL SHALL BE WELL GRADED 125mm TO 200mm HARD, DENSE, ROUNDED & DURABLE FIELD STONE.
- FILL JOINTS WITH CEMENT MORTAR.



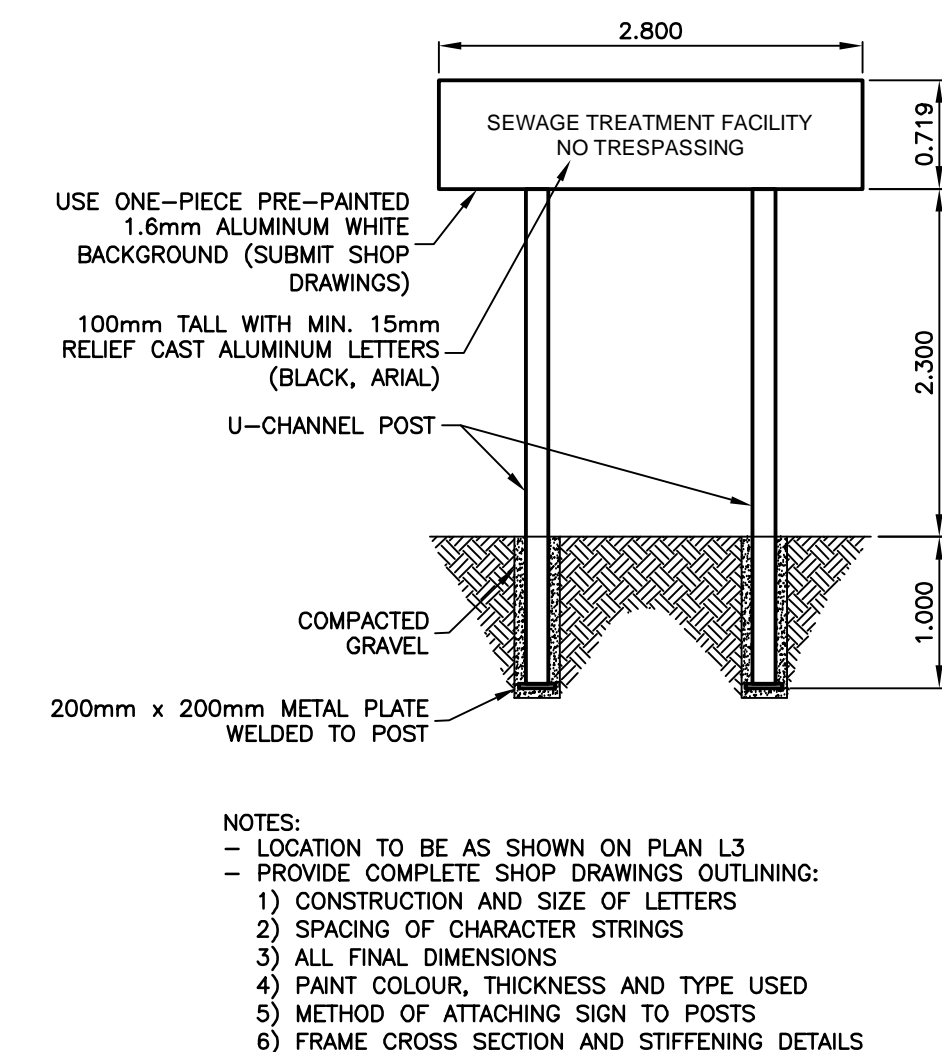
6 LAGOON VALVE MARKER DETAIL SCALE = 1:15



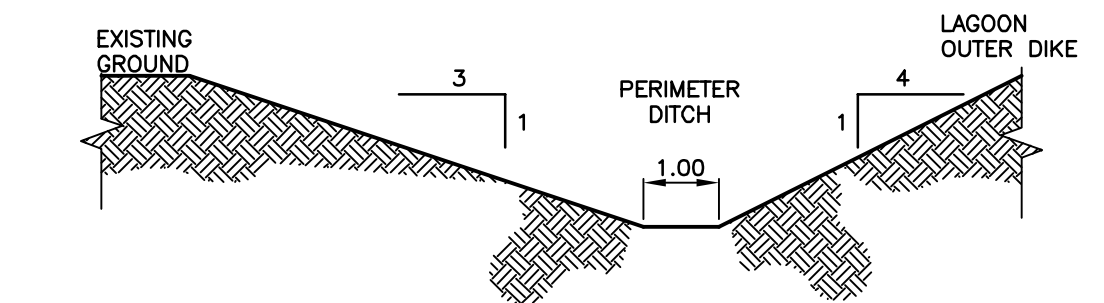
7 RIP RAP DETAIL SCALE = 1:50



9 LAGOON FENCE SIGN DETAIL SCALE = 1:25




10 LAGOON SITE MARKER DETAIL SCALE = 1:50



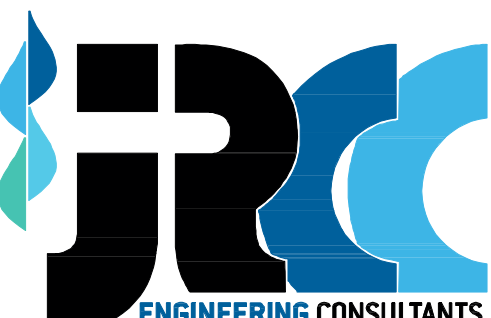
8 TYPICAL PERIMETER DITCH CROSS-SECTION HORIZONTAL SCALE = 1:100 VERTICAL SCALE = 1:50

Mar 16, 2018 2:32pm F:\1010\B18 - La Broquerie\Design\Drawings\Lagoon\LA 17 LB 18 112.dwg

No.	REVISIONS	DATE	INITIALS
2	AS BUILT DRAWING	2018/03	RH
1	ISSUED FOR TENDER	2016/08	OT


 Certificate of Authorization
J.R. Cousin Consultants Ltd.
 No. 234 Date: 16/08/18

ENGINEER'S SEAL
 ORIGINAL DRAWING
 SIGNED AND SEALED
 BY
 B.J.D. MCCORMAC
 16/08/18

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 ENGINEERING EXCELLENCE SINCE 1981

CODE: L-169.75	PROJECT: RM OF LA BROQUERIE WASTEWATER TREATMENT LAGOON EXPANSION
DESIGNED BY: BM	TITLE: CONCRETE SPILLWAY AND LAGOON DETAILS
DRAWN BY: OT	
REVIEWED BY: JC	
SCALE: AS NOTED	DATE: 15/05/26
PLAN: L10	SHEET: 12 of 34

As-Built Drawing
 Drawing compiled from visual observations of various parts of construction and/or from information by others. Accuracy not warranted. Independent verification required before application.

