

THUNDERCHILD FIRST NATION

LAGOON UPGRADE

ISC PROJECT No. CT663/T956

DRAWING INDEX

LAGOON

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T:\dgm\198 THUNDERCHILD\03 LAGOON\CIVIL 3D DESIGN\198_03 - OVERALL DESIGN FILE.dwg 2022/06 3:51:02 PM

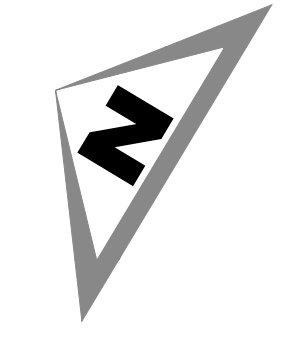
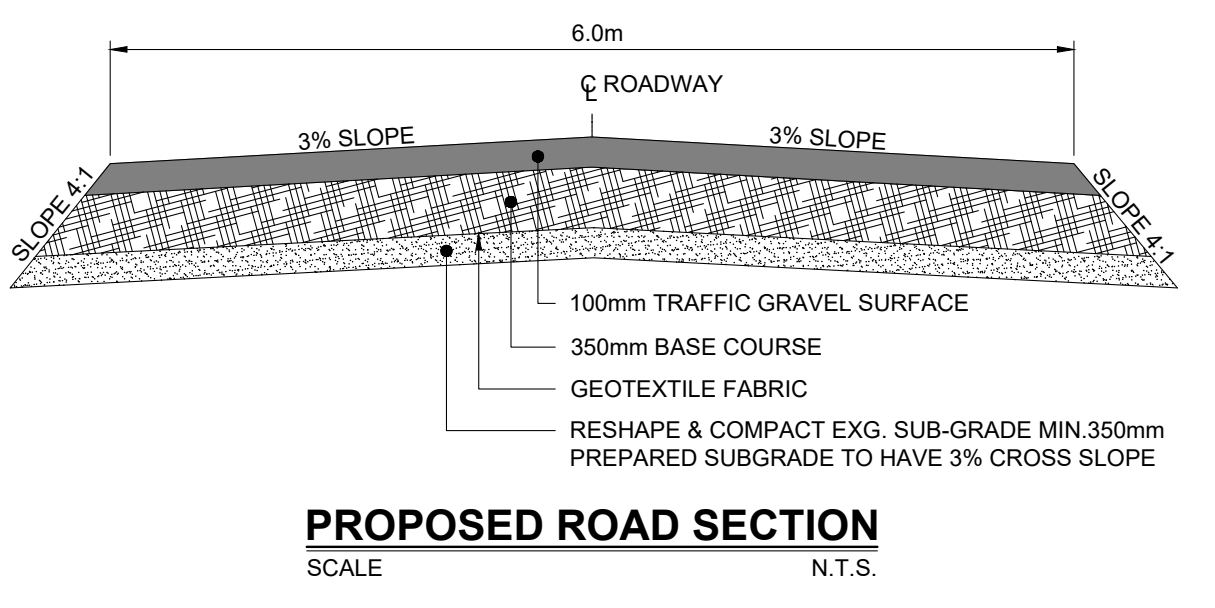
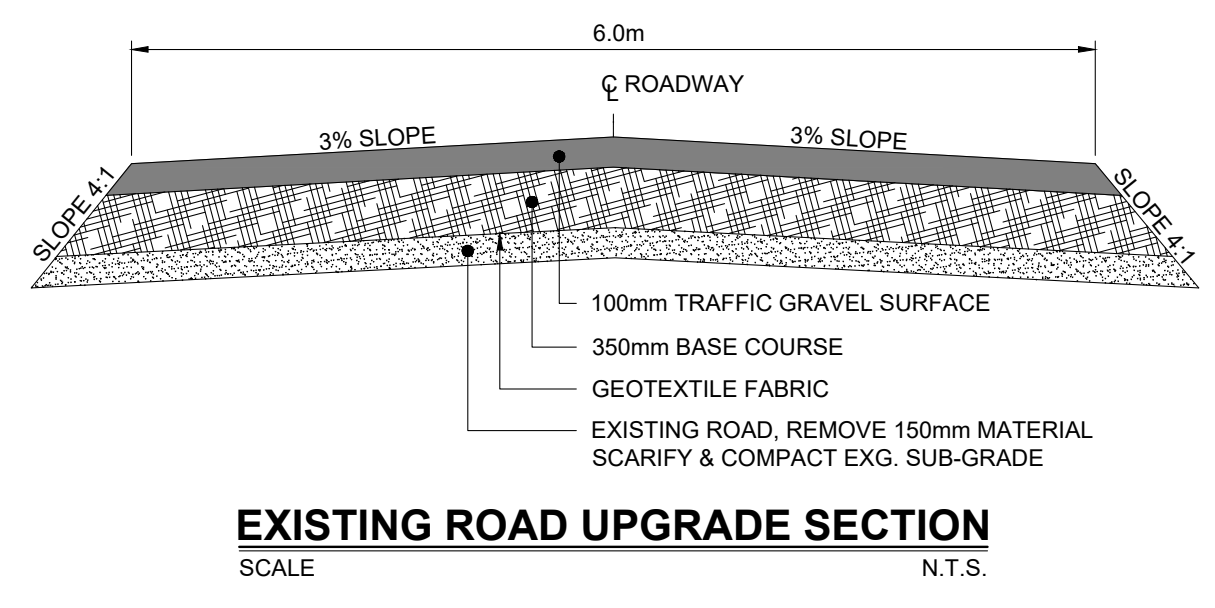
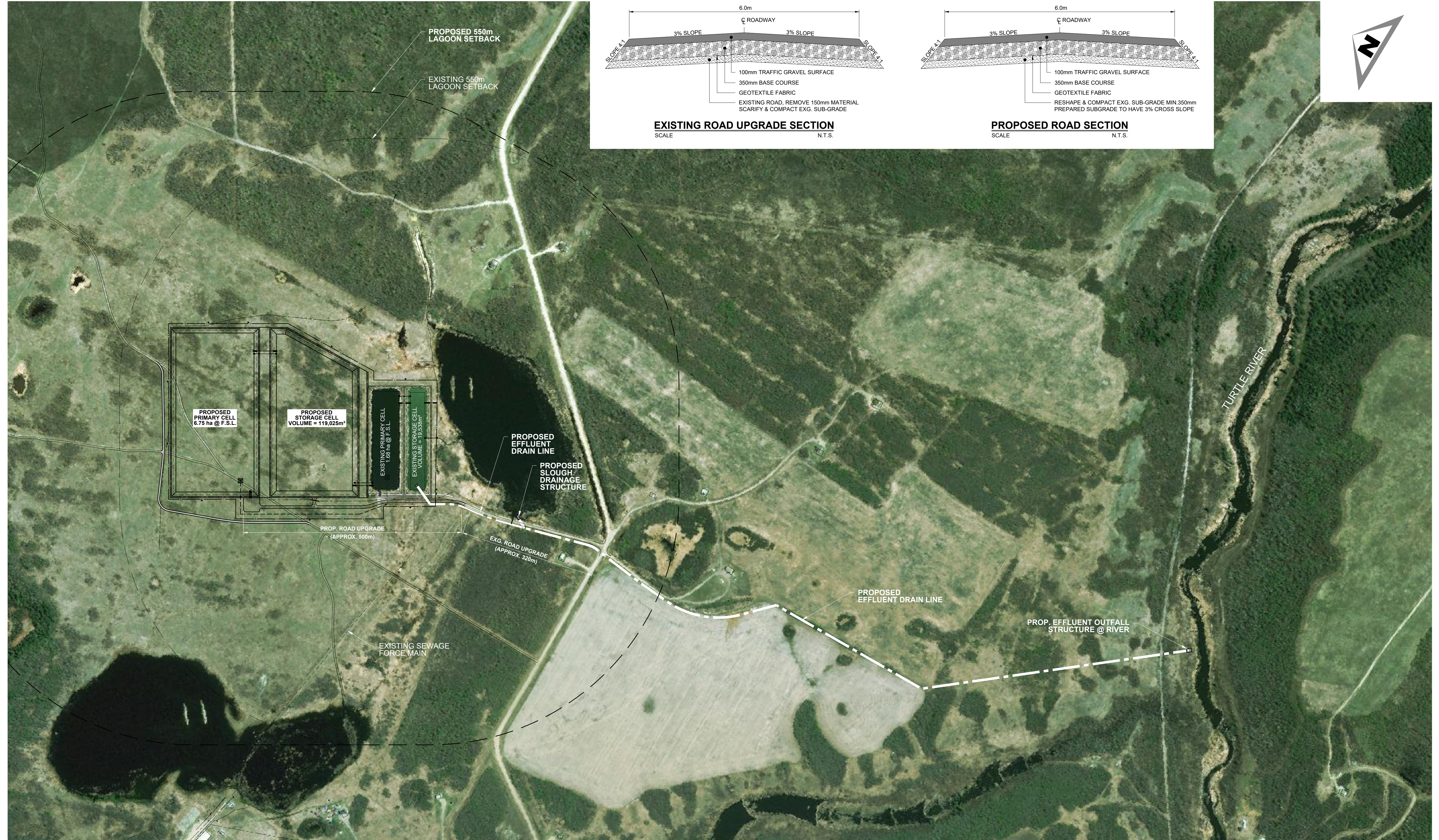
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SCALES SHOWN REFER TO ANSI D PAPER SIZE.
SCALES TO BE DOUBLED FOR ANSI B PAPER SIZES.

No.	REVISION	DATE	BY	STAMP
B	ISSUED FOR 90% DESIGN REVIEW	2022/07/06	M.B.F.	
A	ISSUED FOR 50% DESIGN REVIEW	2022/02/28	M.B.F.	

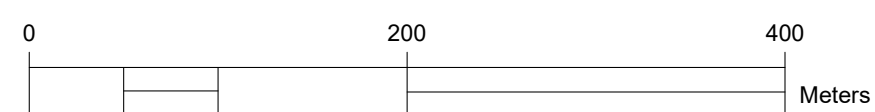
THUNDERCHILD FIRST NATION			
JOB No.	198.03		
DATE:	2022/07/06		
DRAWN:	K.M.N.		
CHECKED:	L.F.L.		
DESIGNED:	M.B.F.	SCALE:	1:7500
REV. No.	B	DRAWING No.	
			SHEET: 01 OF 12



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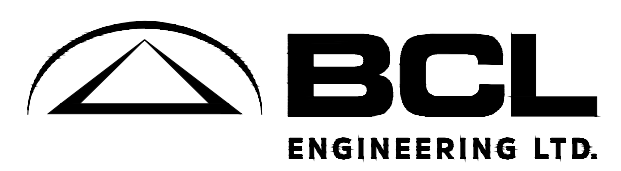
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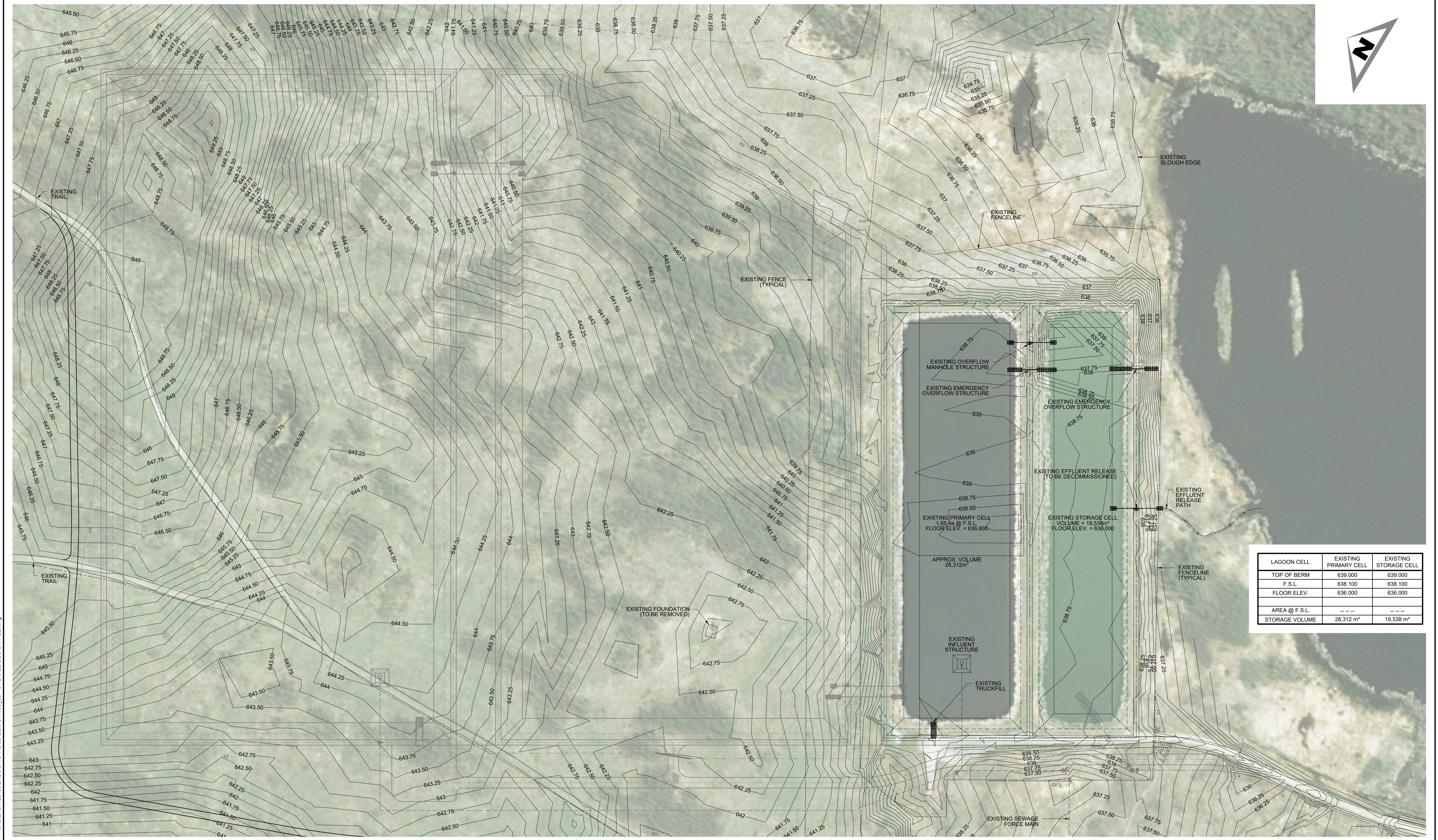


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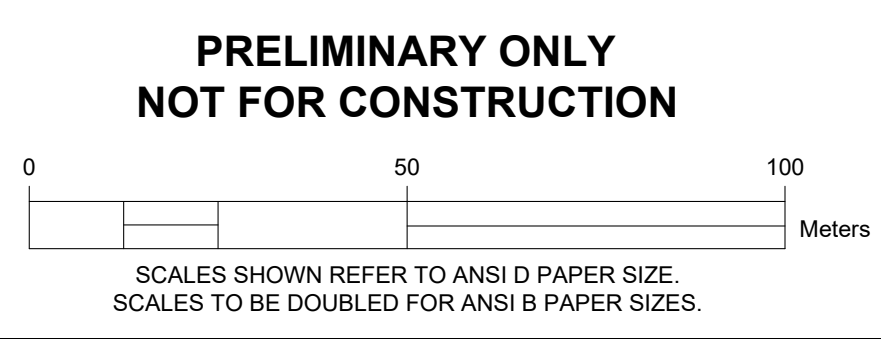
JOB No.	198.03	THUNDERCHILD FIRST NATION	
DATE:	2022/07/06	ISC PROJECT No. CT663/T956	
DRAWN:	K.M.N.	LAGOON UPGRADE	
CHECKED:	L.F.L.	LOCATION PLAN	
DESIGNED:	M.B.F.	SCALE:	1:4000
REV. No.	B	DRAWING No.	
SHEET:	02	OF	12



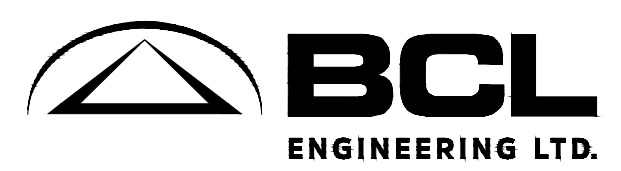
LAGOON CELL	EXISTING PRIMARY CELL	EXISTING STORAGE CELL
TOP OF BERM	639.000	639.000
F.S.L.	638.100	638.100
FLOOR ELEV.	636.000	636.000
AREA @ F.S.L.	---	---
STORAGE VOLUME	28,312 m ³	19,538 m ³

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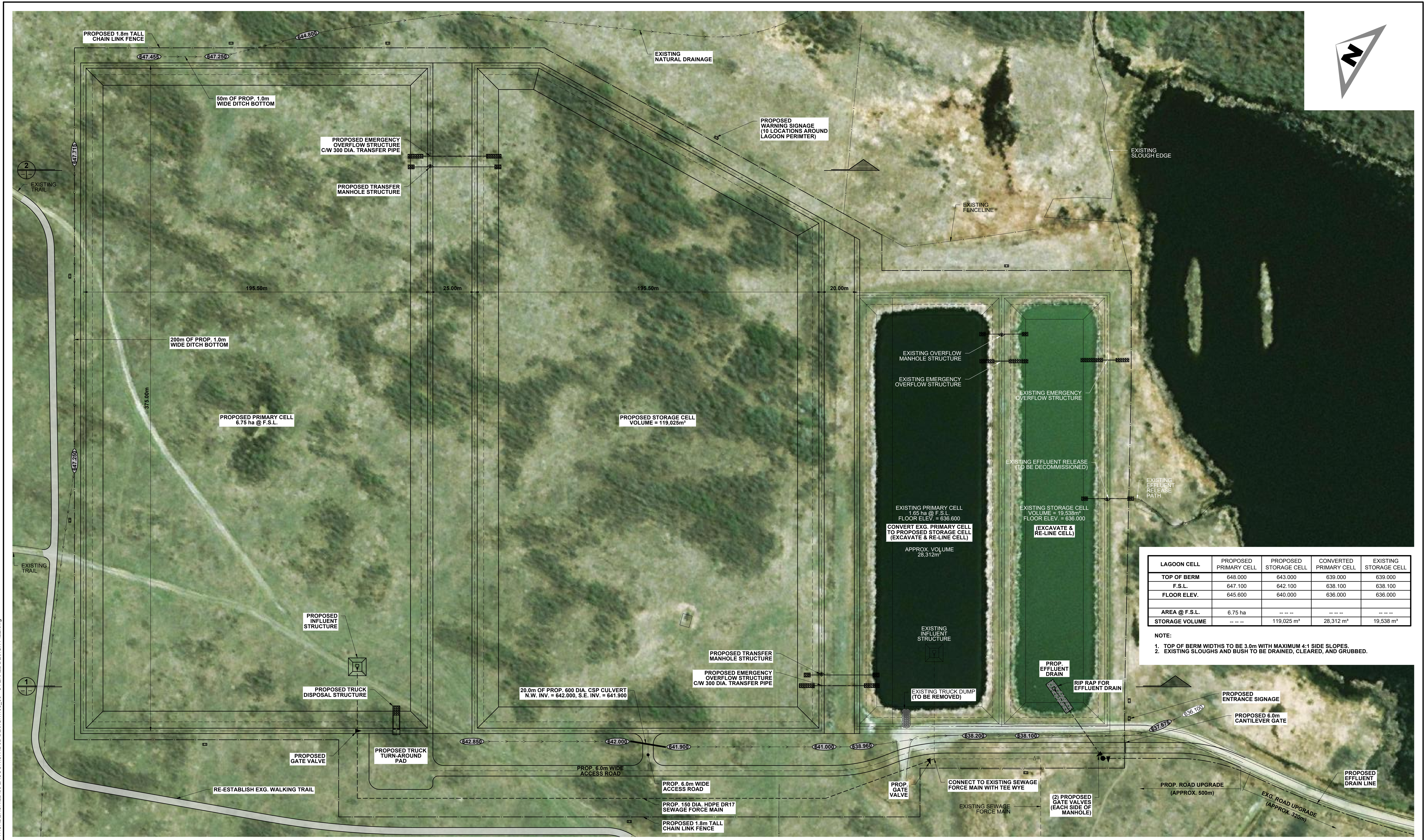
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DATE: 2022/07/06	ISC PROJECT No. CT663/T956		
DRAWN: K.M.N.	LAGOON UPGRADE		
CHECKED: L.F.L.	EXISTING SITE PLAN		
DESIGNED: M.B.F.	SCALE: 1:1000	REV. No. B	DRAWING No.
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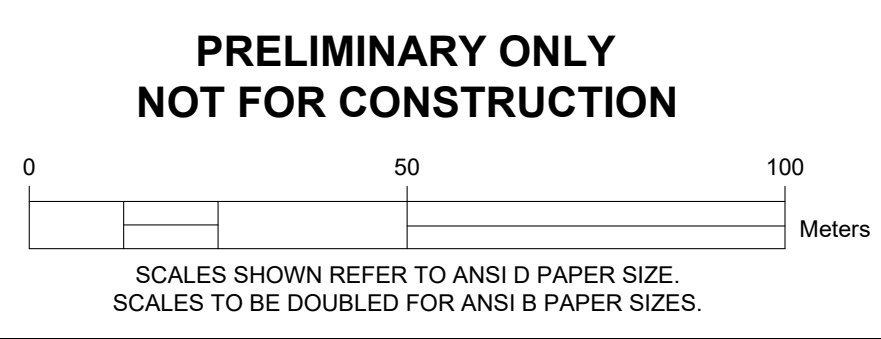


LAGOON CELL	PROPOSED PRIMARY CELL	PROPOSED STORAGE CELL	CONVERTED PRIMARY CELL	EXISTING STORAGE CELL
TOP OF BERM	648.000	643.000	639.000	639.000
F.S.L.	647.100	642.100	638.100	638.100
FLOOR ELEV.	645.600	640.000	636.000	636.000
AREA @ F.S.L.	6.75 ha	---	---	---
STORAGE VOLUME	---	119,025 m³	28,312 m³	19,538 m³

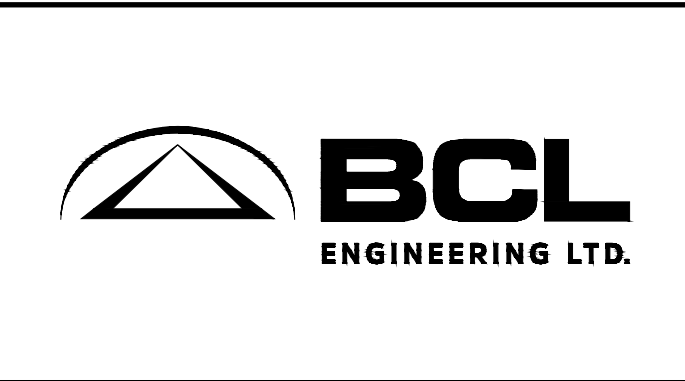
NOTE:
 1. TOP OF BERM WIDTHS TO BE 3.0m WITH MAXIMUM 4:1 SIDE SLOPES.
 2. EXISTING SLOUGHS AND BUSH TO BE DRAINED, CLEARED, AND GRUBBED.

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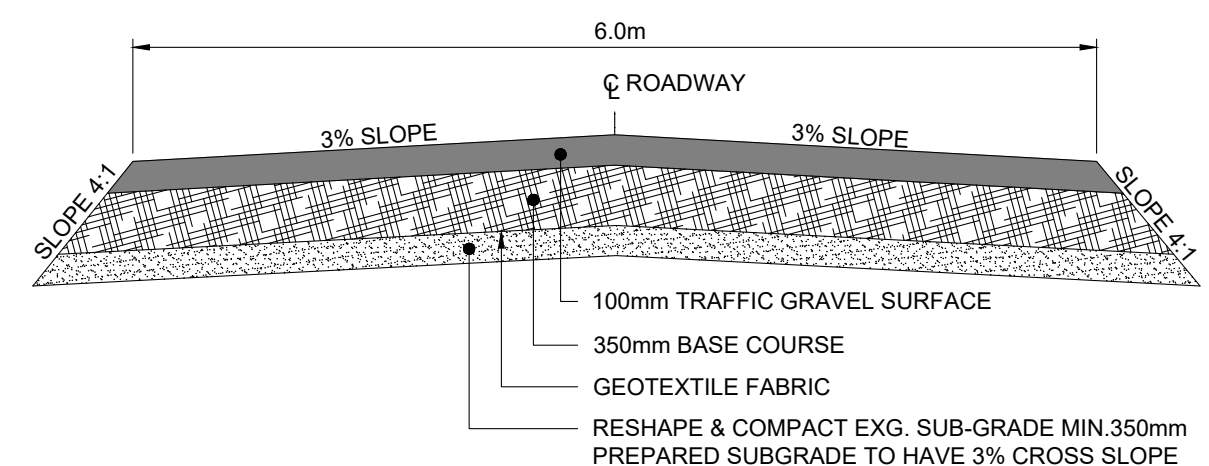
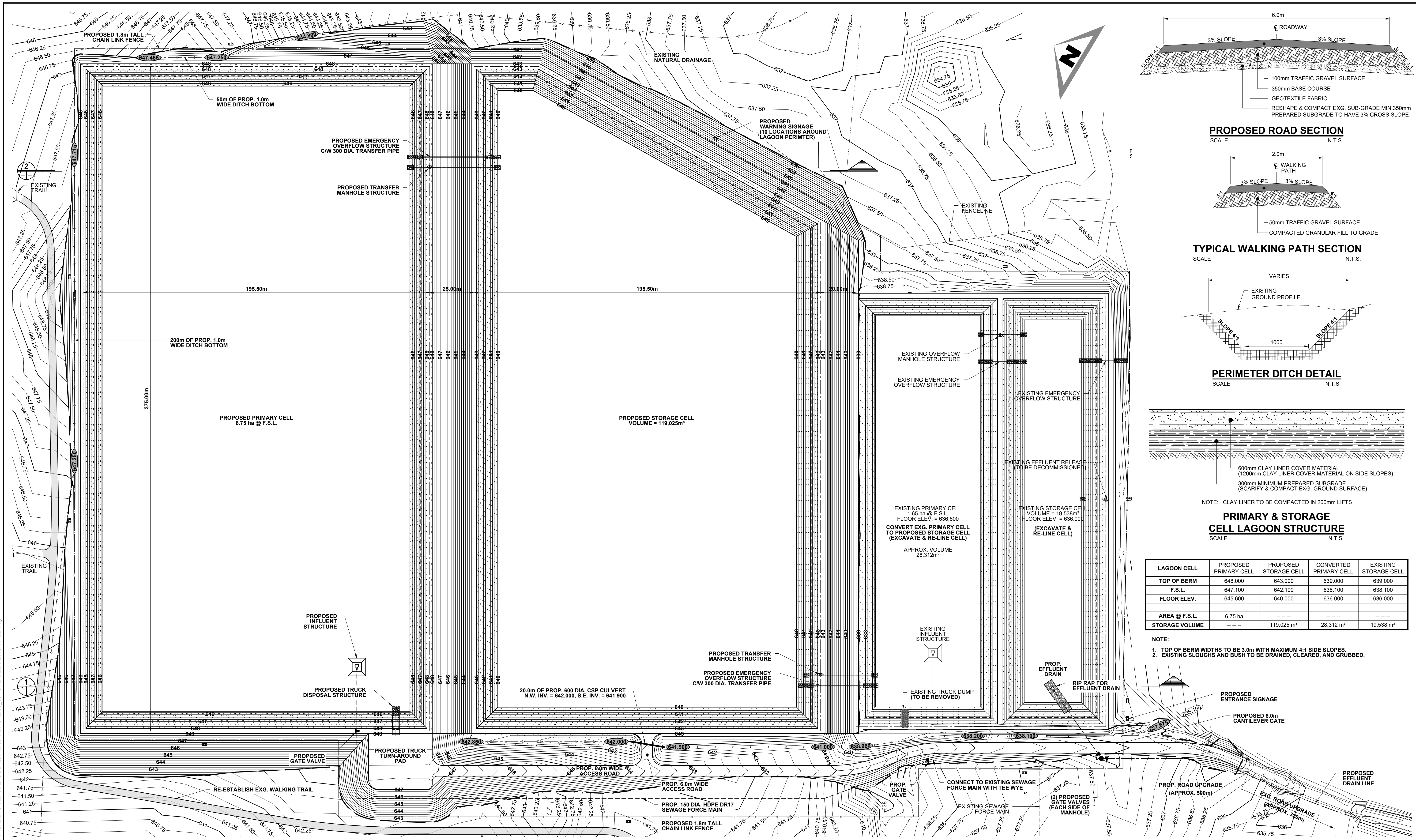
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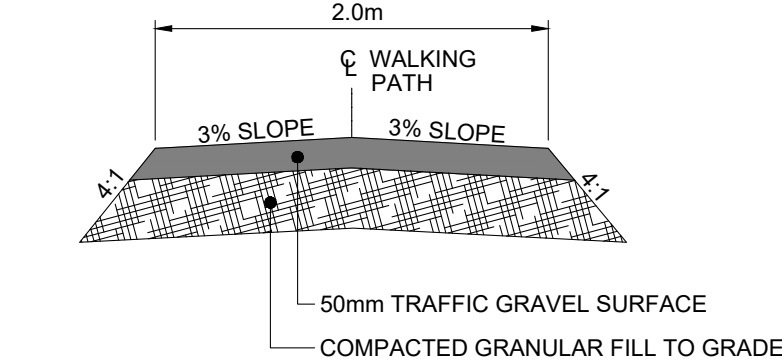
JOB No. 198.03
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 DRAWN: K.M.N.
 CHECKED: L.F.L.
 DESIGNED: M.B.F.

THUNDERCHILD FIRST NATION
ISC PROJECT No. CT663/T956
LAGOON UPGRADE
PROPOSED SITE PLAN

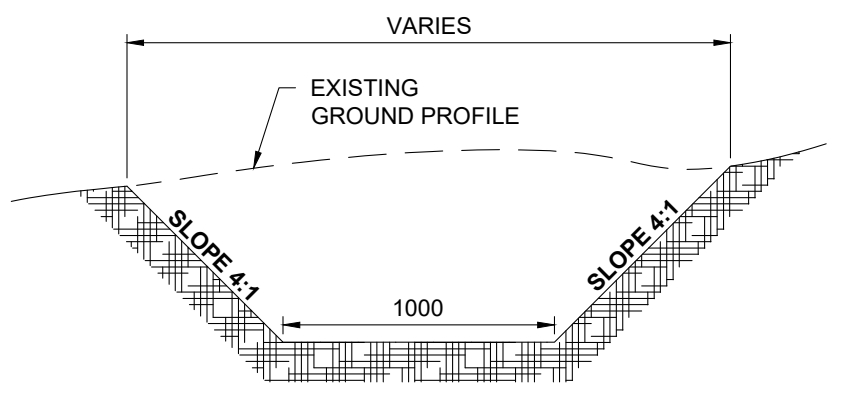
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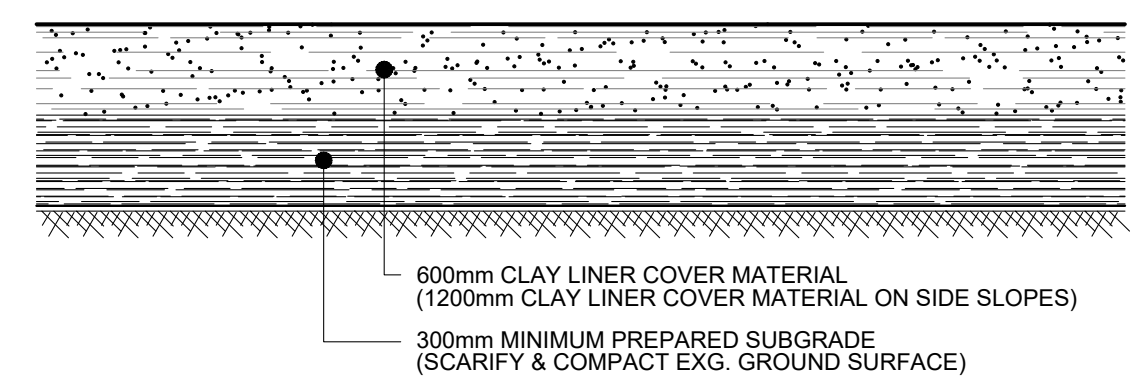
PROPOSED ROAD SECTION
SCALE: N.T.S.



TYPICAL WALKING PATH SECTION
SCALE: N.T.S.



PERIMETER DITCH DETAIL
SCALE: N.T.S.



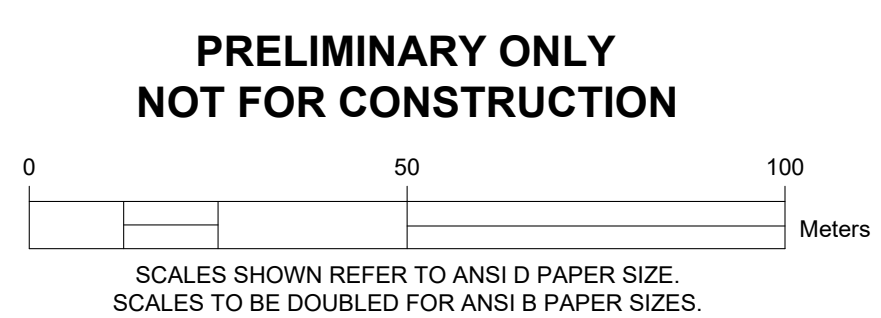
PRIMARY & STORAGE CELL LAGOON STRUCTURE
SCALE: N.T.S.

LAGOON CELL	PROPOSED PRIMARY CELL	PROPOSED STORAGE CELL	CONVERTED PRIMARY CELL	EXISTING STORAGE CELL
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F.S.L.	647.100	642.100	638.100	638.100
FLOOR ELEV.	645.600	640.000	636.000	636.000
AREA @ F.S.L.	6.75 ha	---	---	---
STORAGE VOLUME	---	119,025 m³	28,312 m³	19,538 m³

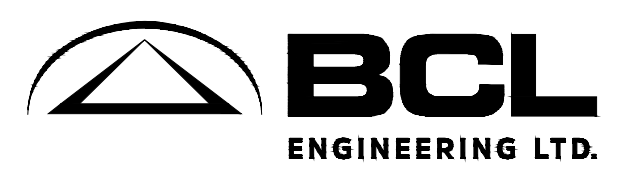
- NOTE:
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 - EXISTING SLOUGHS AND BUSH TO BE DRAINED, CLEARED, AND GRUBBED.

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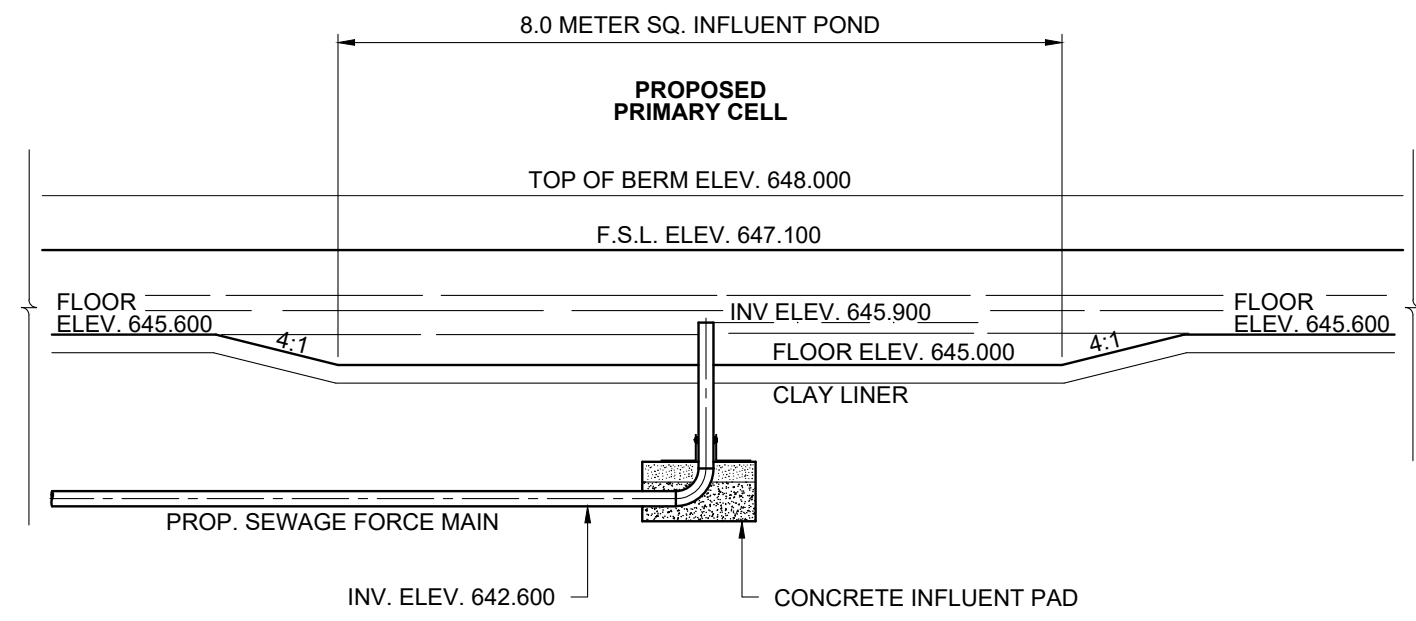
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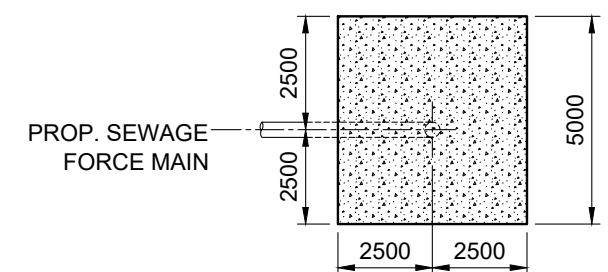
JOB No. 198.03
DATE: 2022/07/06
DRAWN: K.M.N.
CHECKED: L.F.L.
DESIGNED: M.B.F.

THUNDERCHILD FIRST NATION
ISC PROJECT No. CT663/T956
LAGOON UPGRADE
PROPOSED CONTOUR PLAN

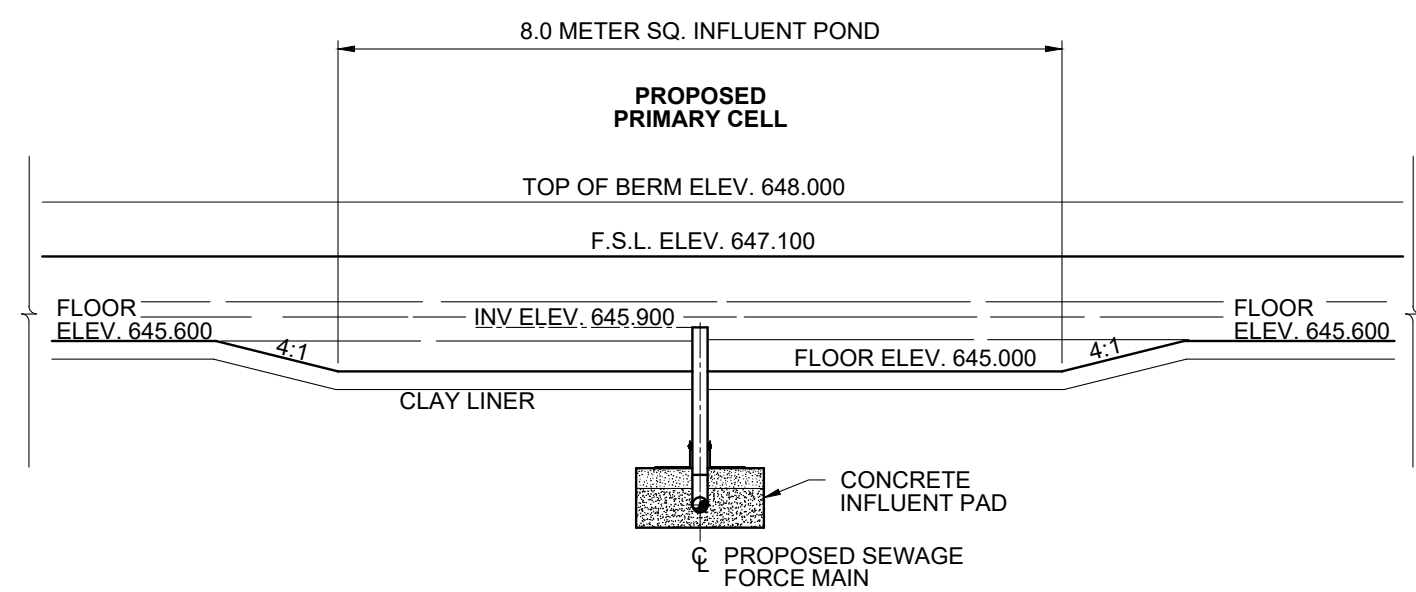
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SHEET: **05** OF 12



SECTION

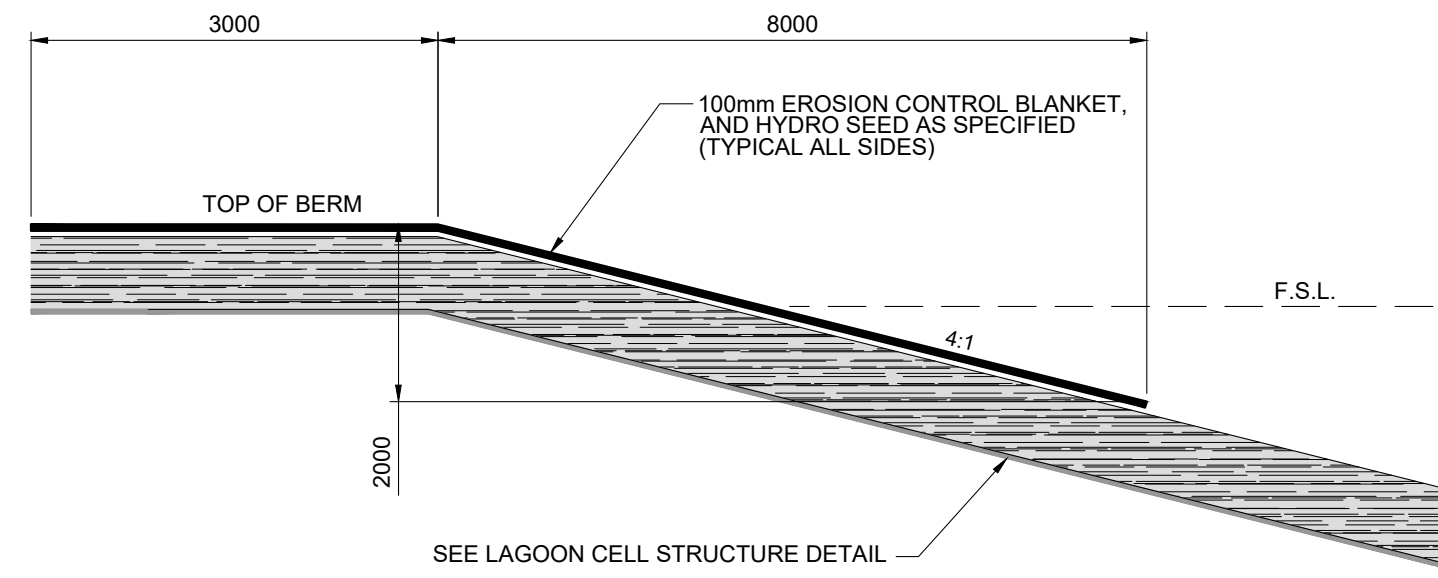


PLAN

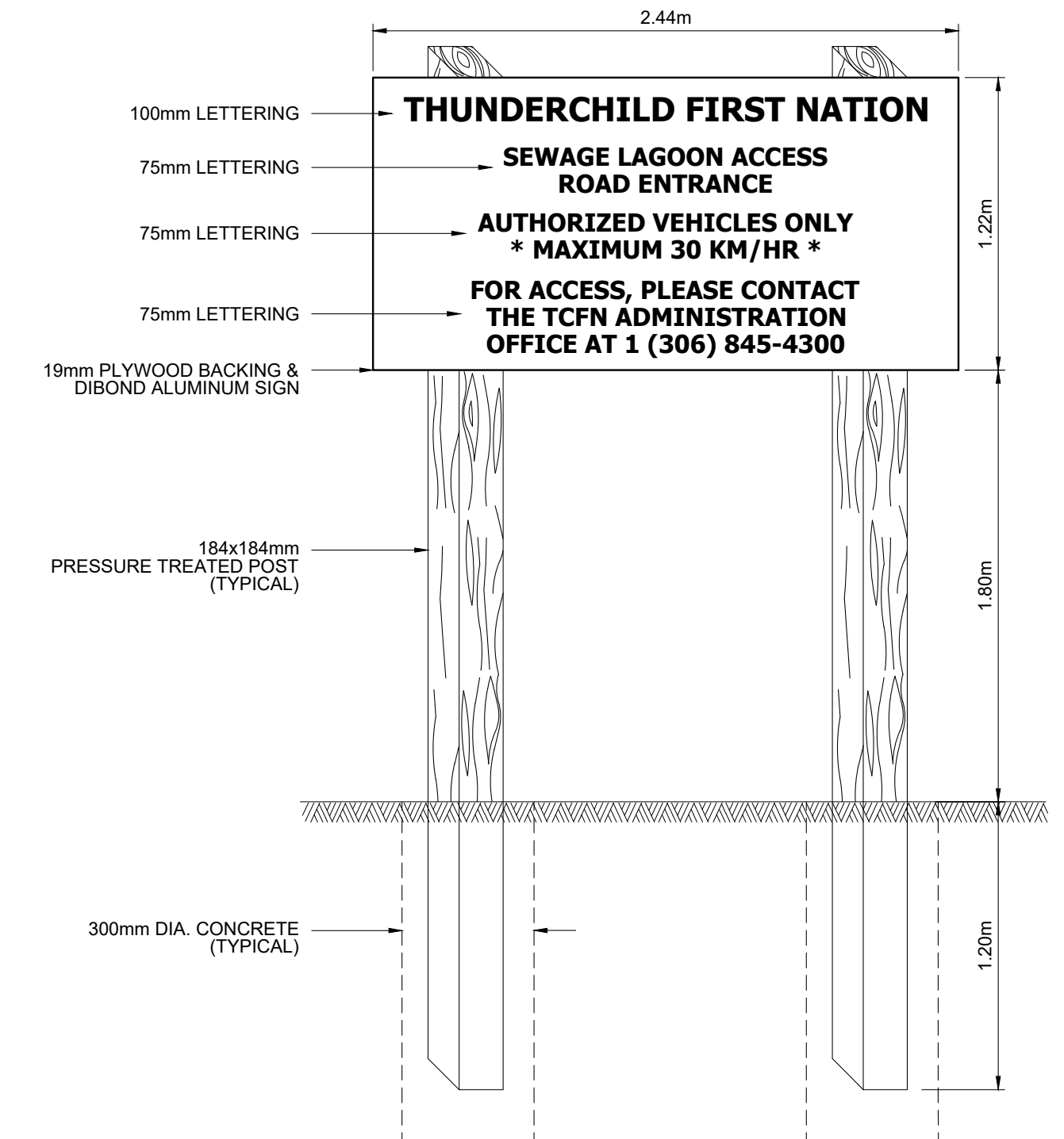


SECTION

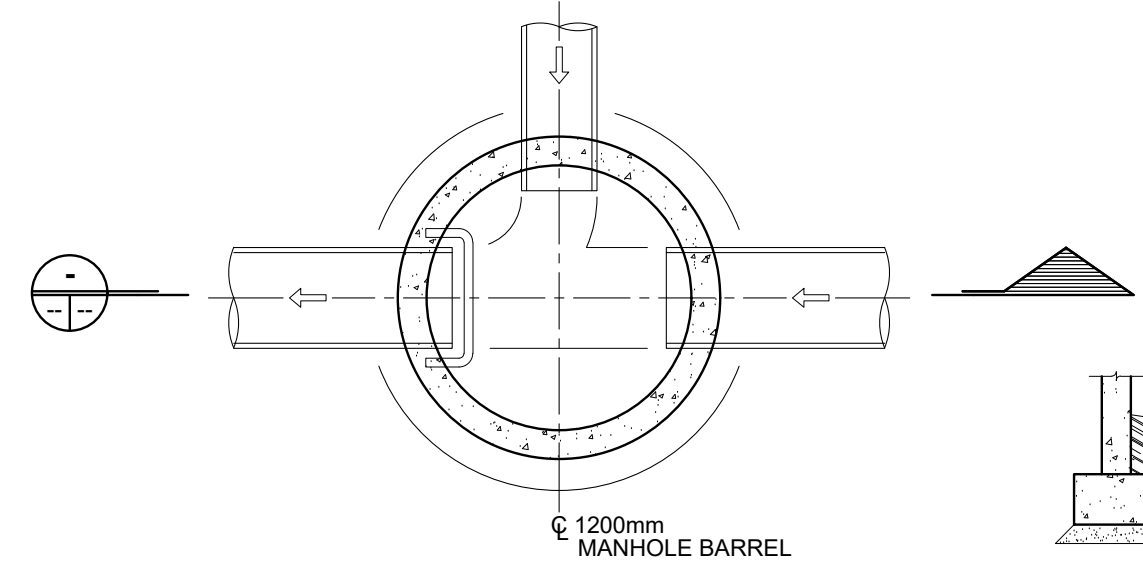
CONCRETE INFLUENT PAD DETAIL
SCALE N.T.S.



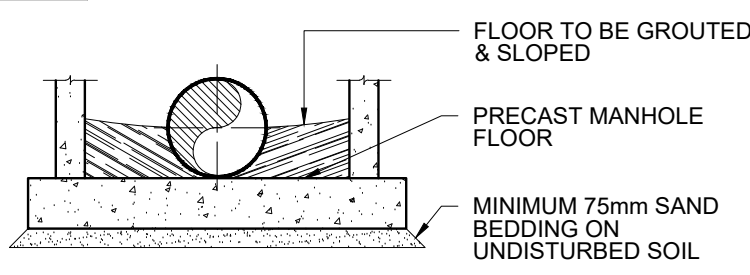
EROSION PROTECTION DETAIL
SCALE N.T.S.



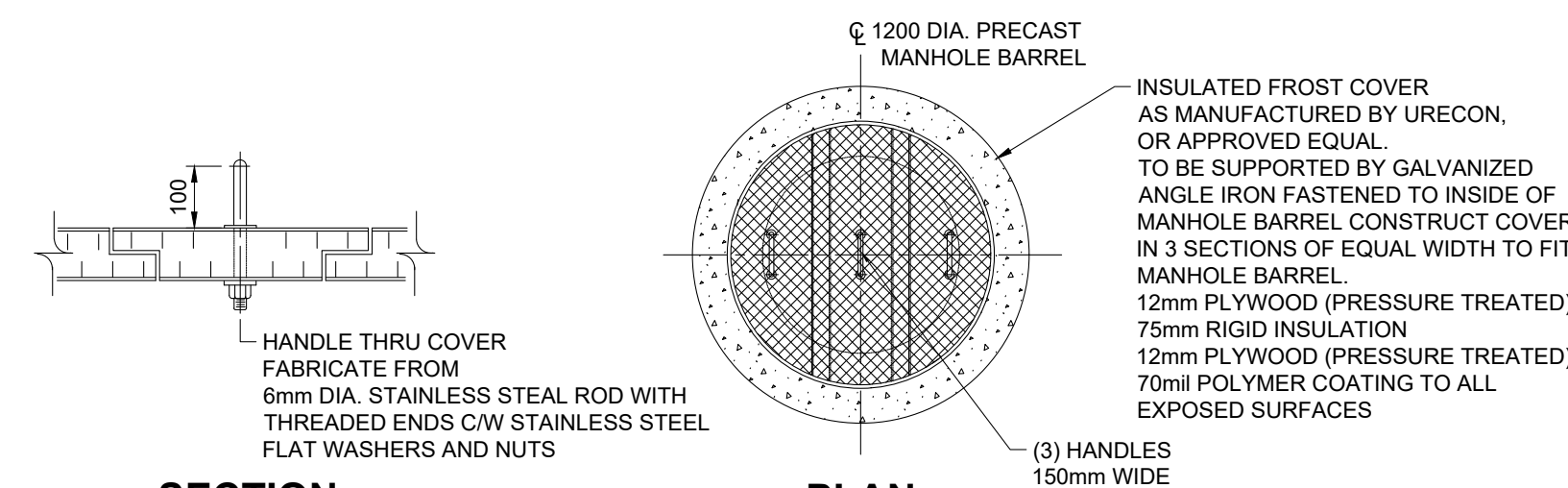
ENTRANCE SIGNAGE
SCALE 1:25



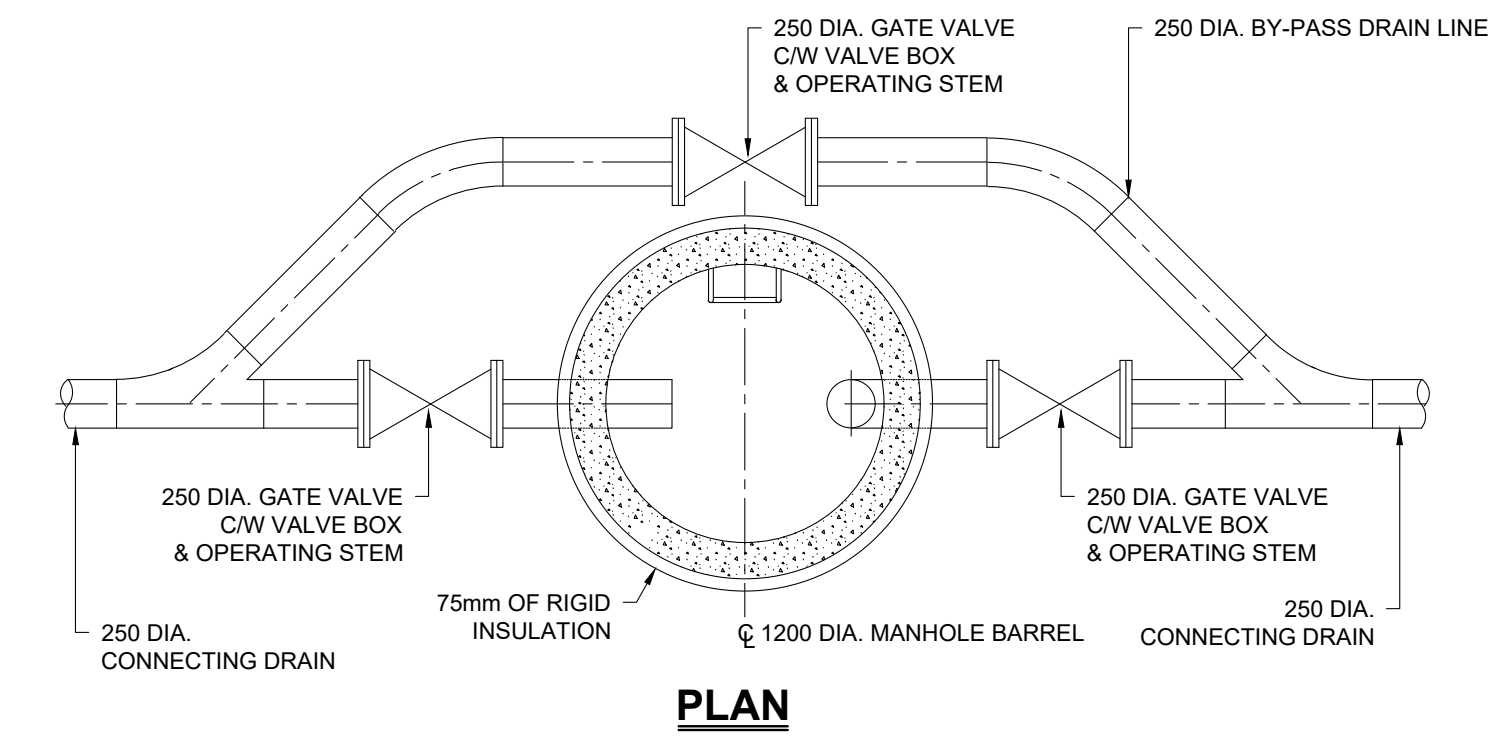
PLAN
SCALE N.T.S.



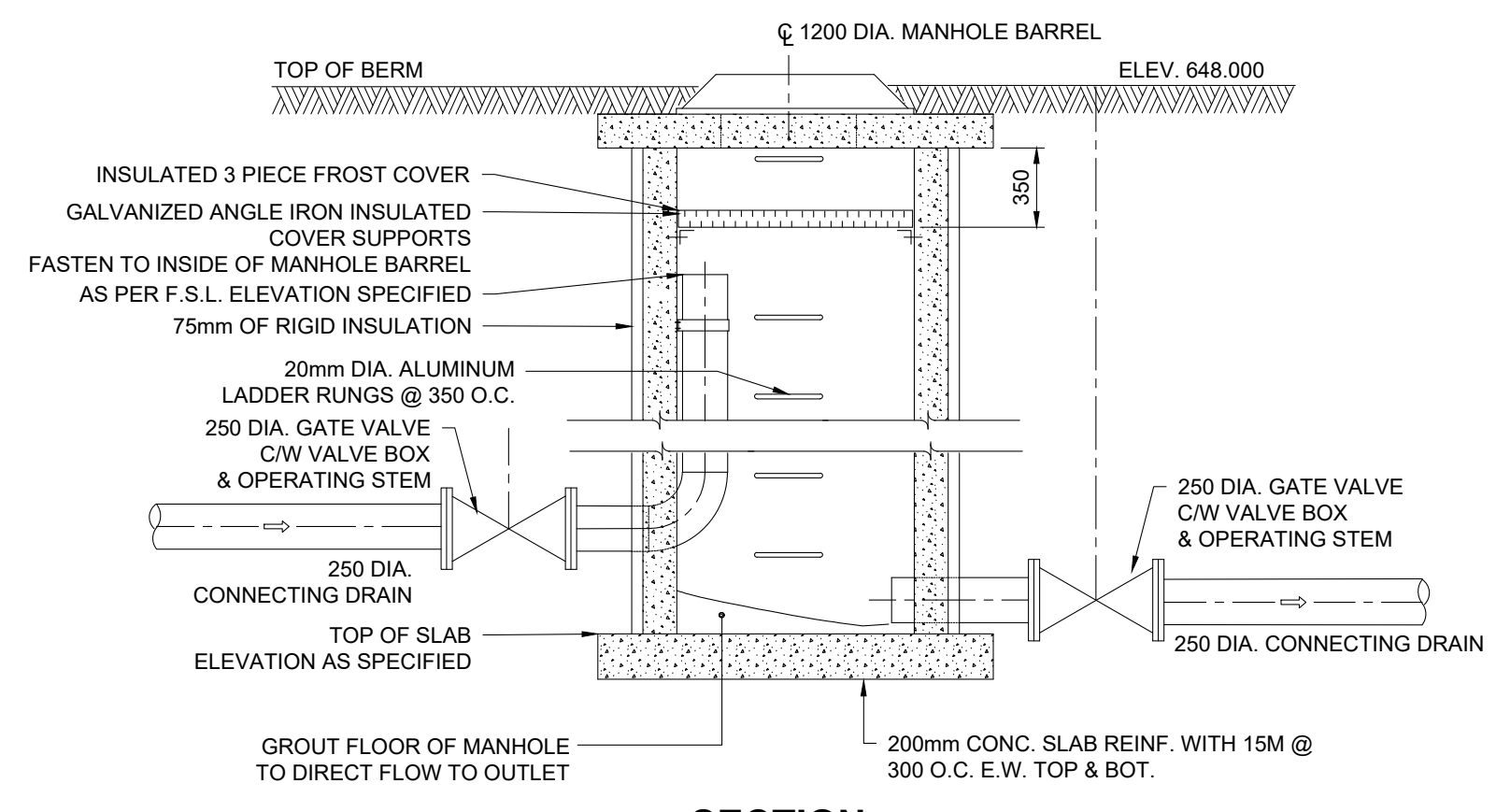
FLOOR DETAIL
SCALE 1:30



FROST COVER DETAIL
SCALE N.T.S.

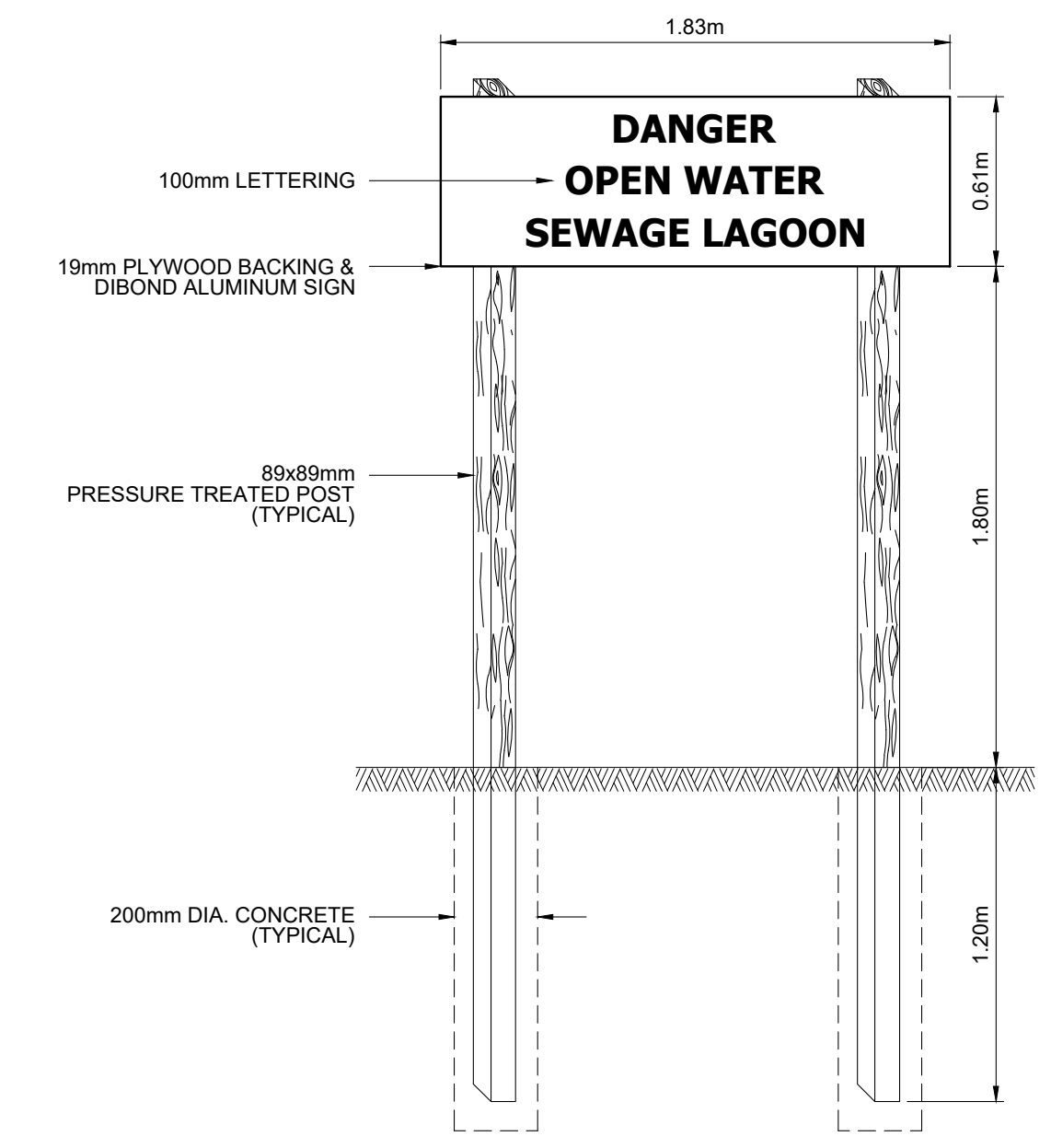


PLAN

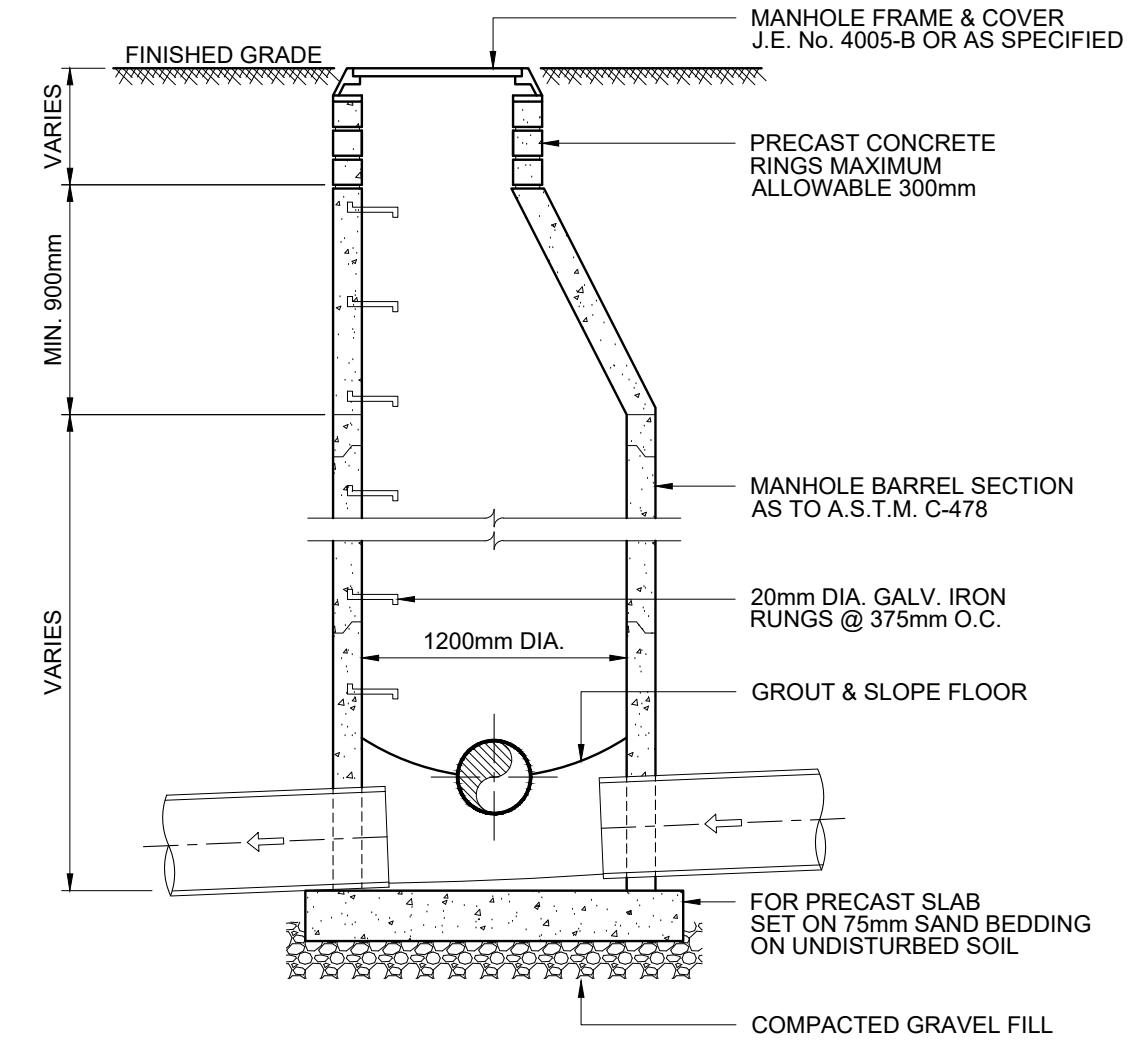


SECTION

TRANSFER STRUCTURE
SCALE N.T.S.



WARNING SIGNAGE (10) REQUIRED
SCALE 1:25



SECTION
SCALE N.T.S.

STANDARD MANHOLE DETAIL
SCALE N.T.S.

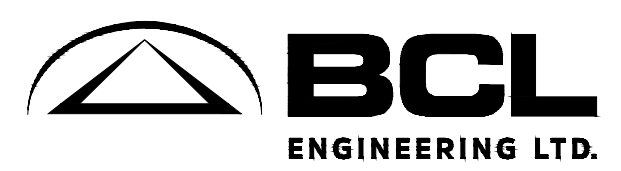
- NOTES:**
1. MANHOLE TOP TO BE SET AS DIRECTED BY ENGINEER
 2. CEMENT MORTAR ALL JOINTS.
 3. MAXIMUM SEWER SIZE 600mm

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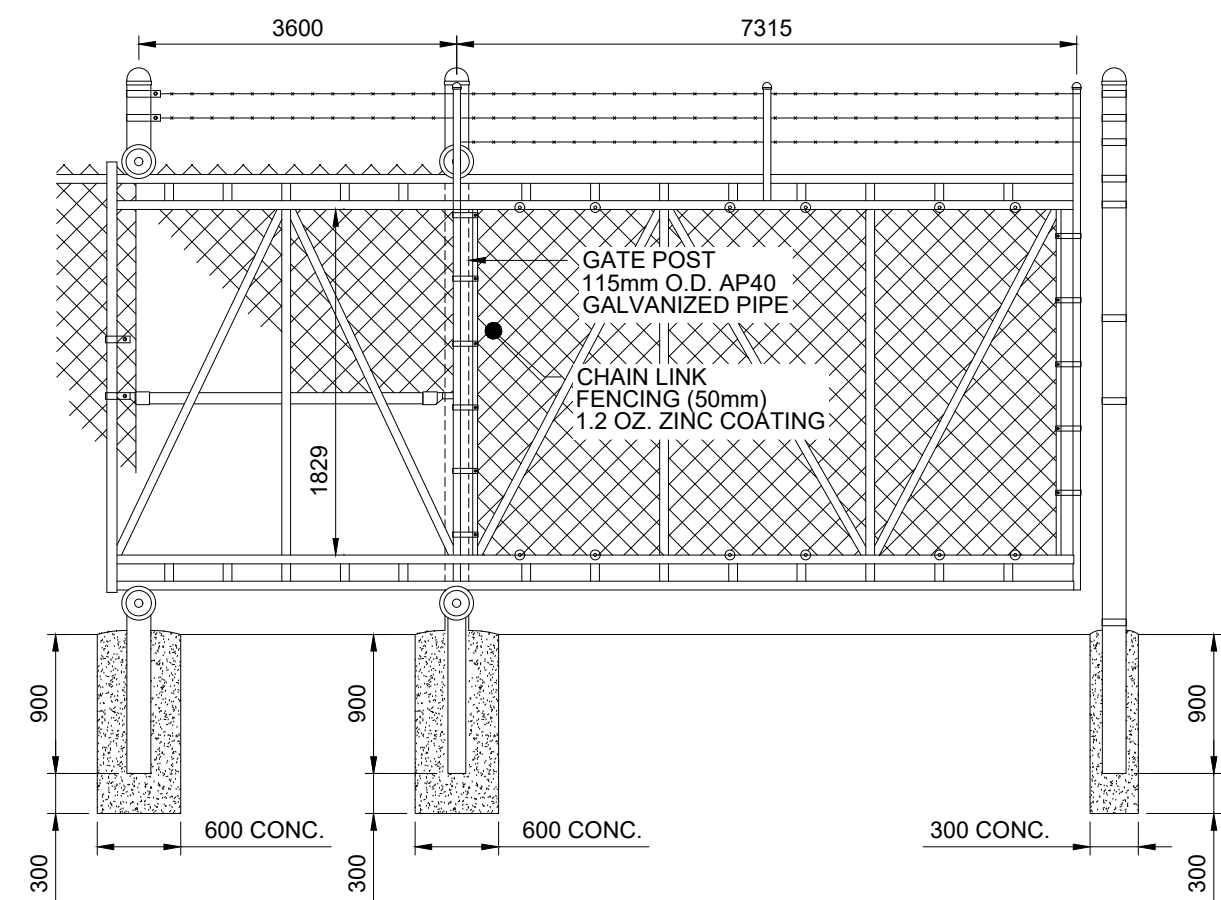
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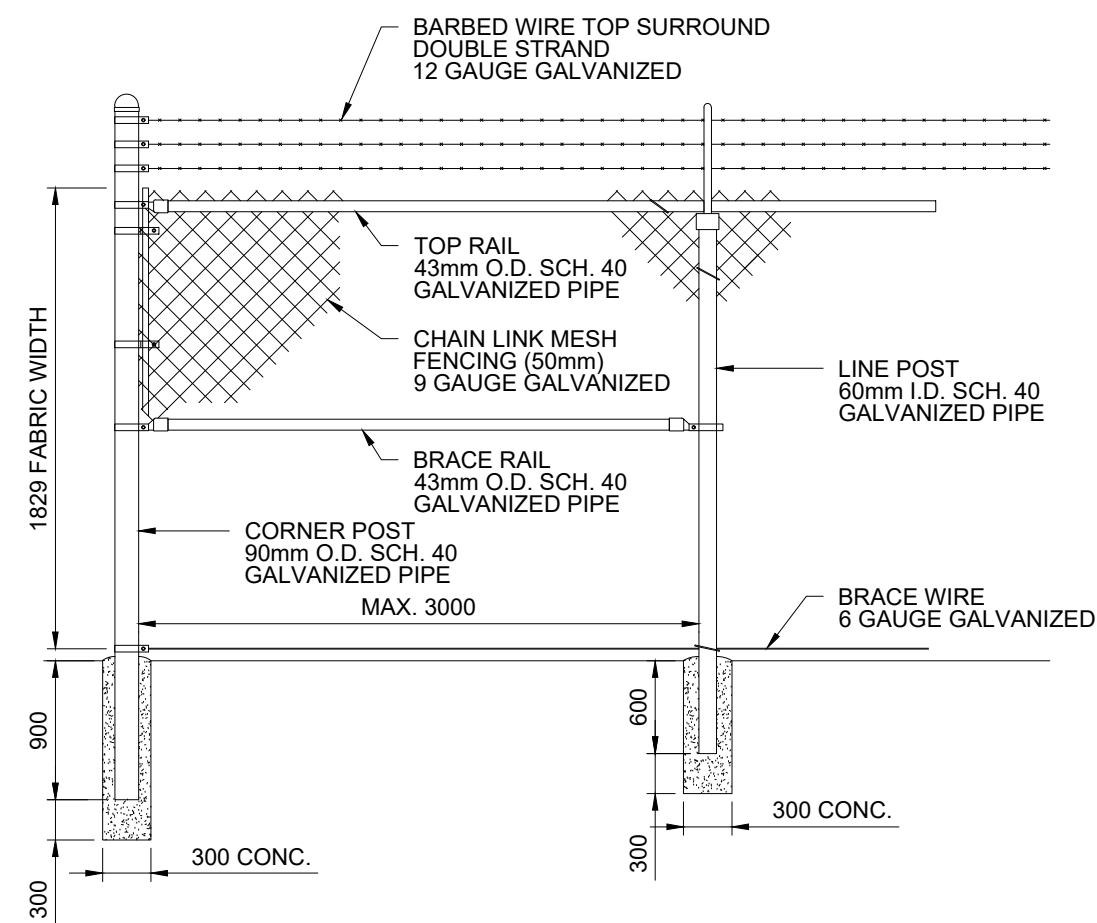
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A	ISSUED FOR 50% DESIGN REVIEW	2022/02/28	M.B.F.	



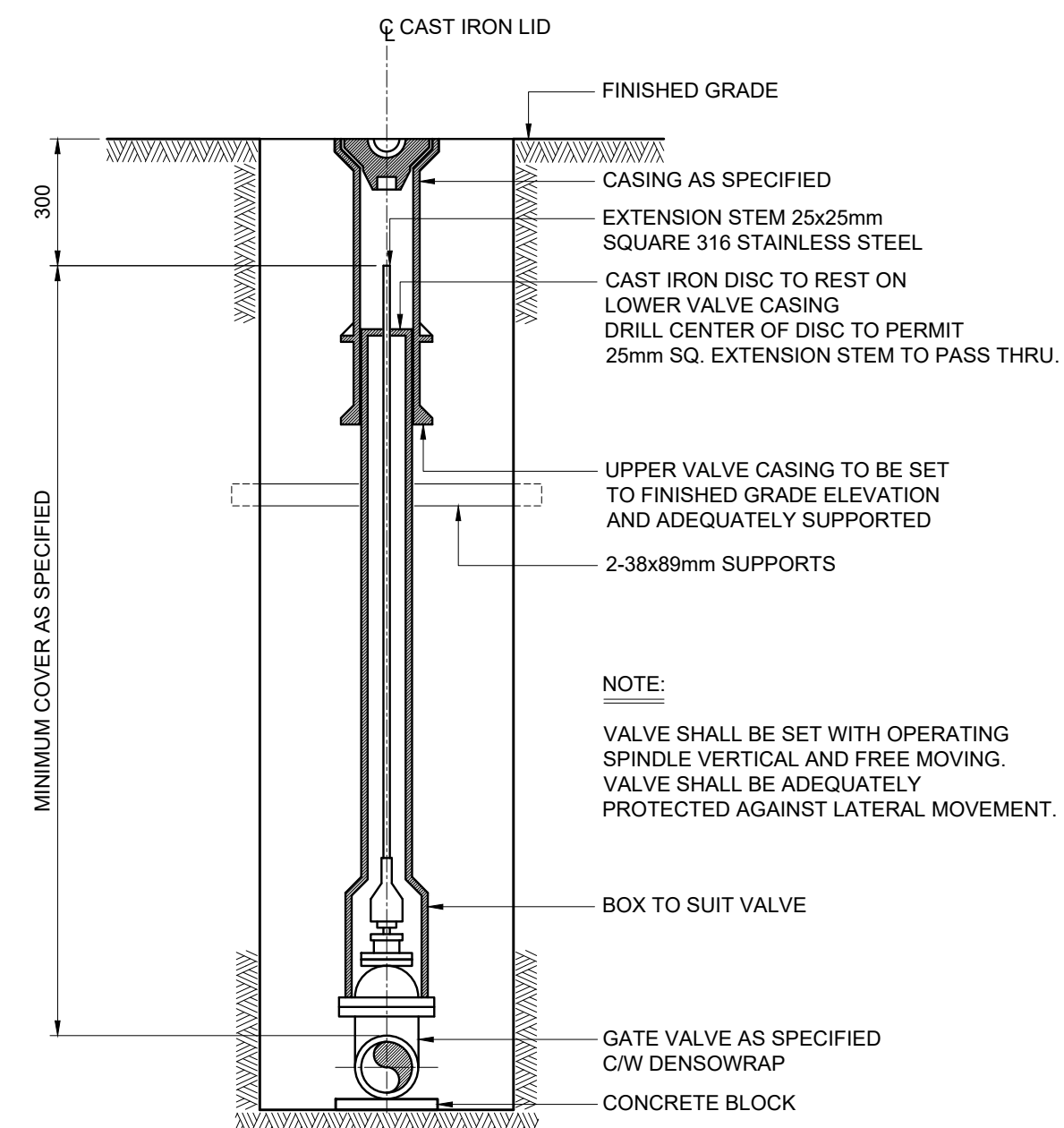
THUNDERCHILD FIRST NATION			
JOB No.	198.03		
DATE:	2022/07/06		
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DESIGNED:	M.B.F.	SCALE:	AS SHOWN
REV. No.	B	DRAWING No.	
SHEET:	07	OF	12



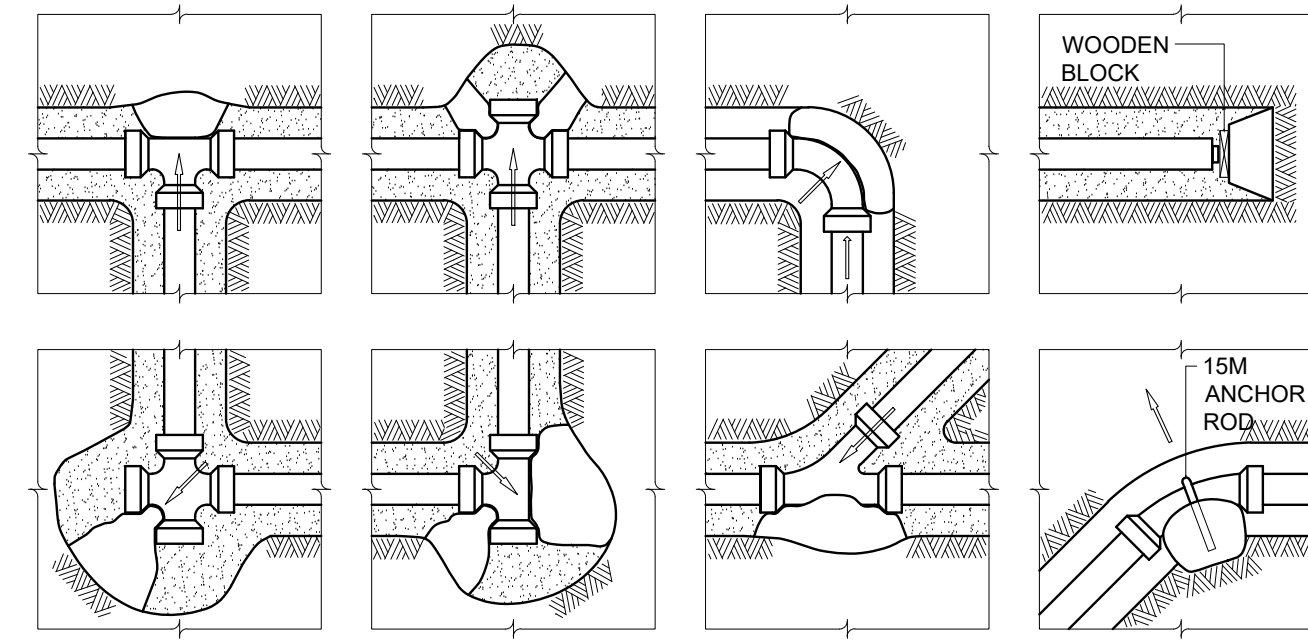
7.0m CANTILEVER GATE DETAIL
SCALE N.T.S.



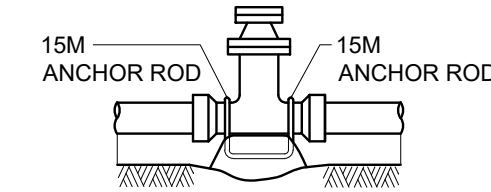
TYPICAL CORNER & LINE POST
SCALE N.T.S.



GATE VALVE INSTALLATION
SCALE N.T.S.



THRUST BLOCKS FOR FITTINGS



GATE VALVE ANCHORS

WORKING PRESSURE kPa	SIZE OF VALVE REQUIRING ANCHORAGE
345 - 690	300 AND UP
690 - 1035	200 AND UP
1035 - 1380	ALL SIZES

PIPE SIZE	THRUST AT FITTINGS				
	DEAD END OR TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/2° BEND
100	.012	.018	.010	.005	.002
150	.025	.036	.019	.010	.005
200	.044	.062	.033	.017	.010
250	.071	.100	.054	.028	.014
300	.100	.141	.077	.039	.021
350	.135	.190	.105	.053	.028
400	.174	.248	.135	.068	.034

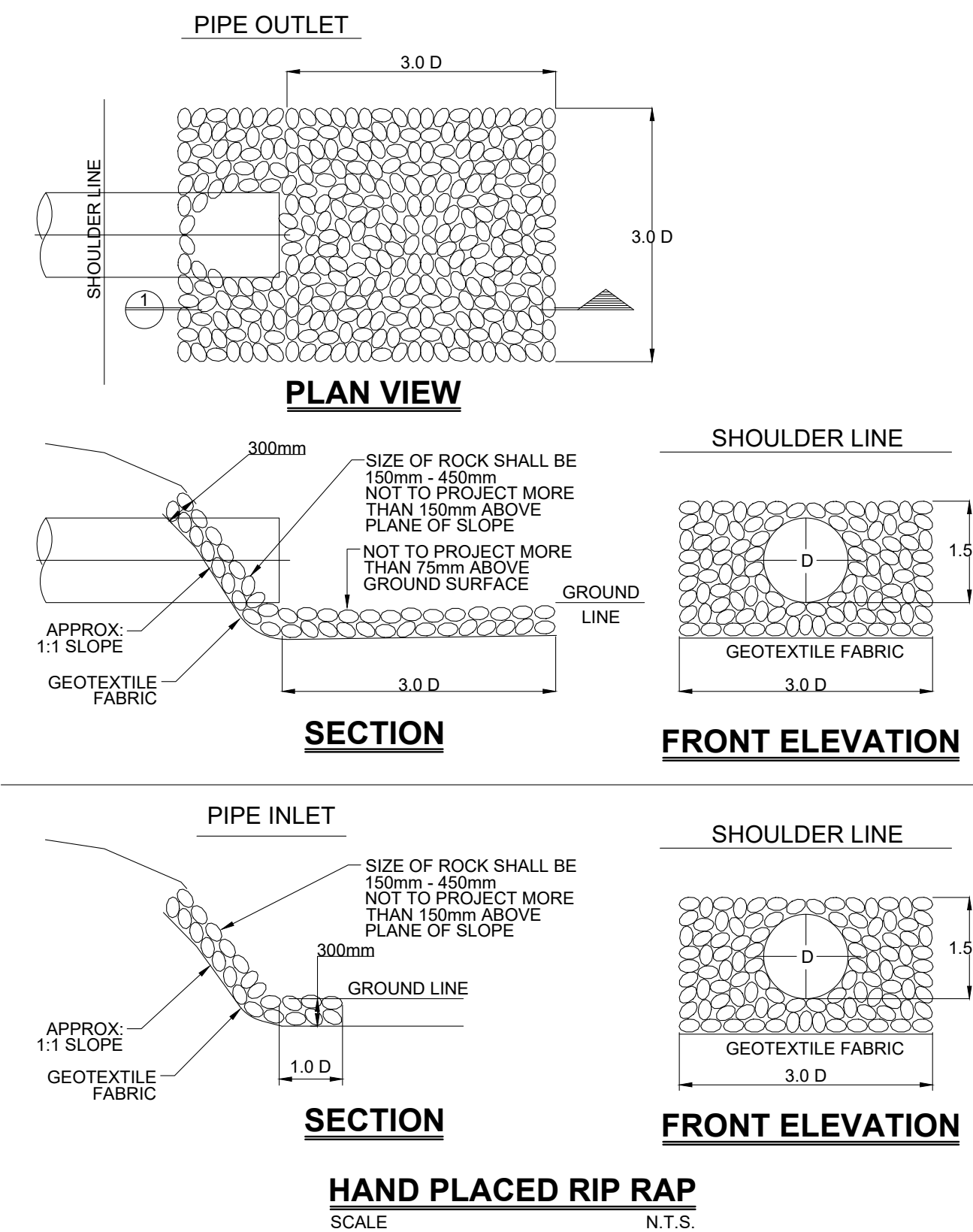
NOTE:
TO OBTAIN TOTAL THRUST AT FITTING
MULTIPLY ABOVE VALUES BY MAXIMUM
ALLOWABLE WORKING PRESSURE OF PIPE IN kPa

SAFE BEARING LOADS	
SOIL TYPE	SAFE BEARING LOAD kPa
SOFT CLAY	100
SAND OR HARD CLAY	250
SAND AND GRAVEL	400
SAND, GRAVEL CEMENTED WITH CLAY	500
SHALE	1000

SAMPLE CALCULATION:
FOR WORKING PRESSURE OF 1035 kPa AND 250 DIA. PIPE
AT 45° (0.054m²) IN SOFT CLAY (100kPa)
AREA REQUIRED = 1035 x 0.054 = 0.559m²
100

REACTION BLOCKING & ANCHORAGE

SCALE N.T.S.



HAND PLACED RIP RAP
SCALE N.T.S.

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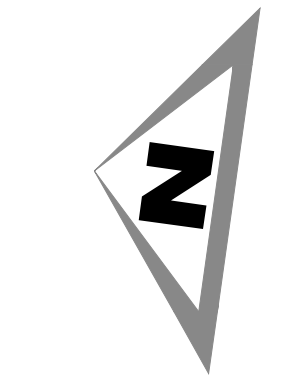
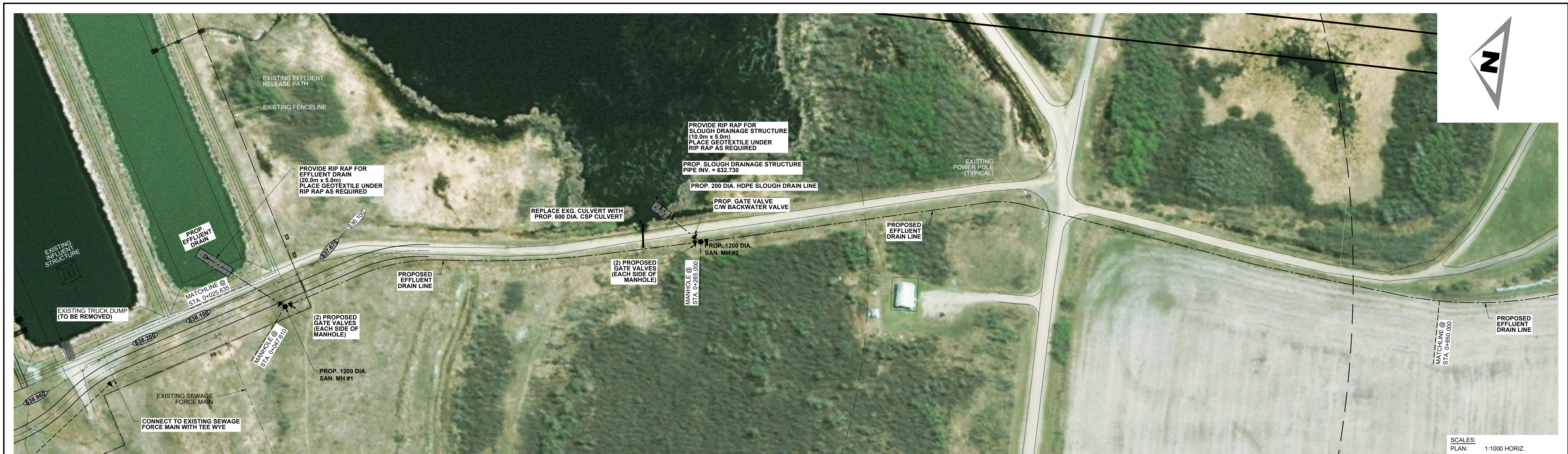


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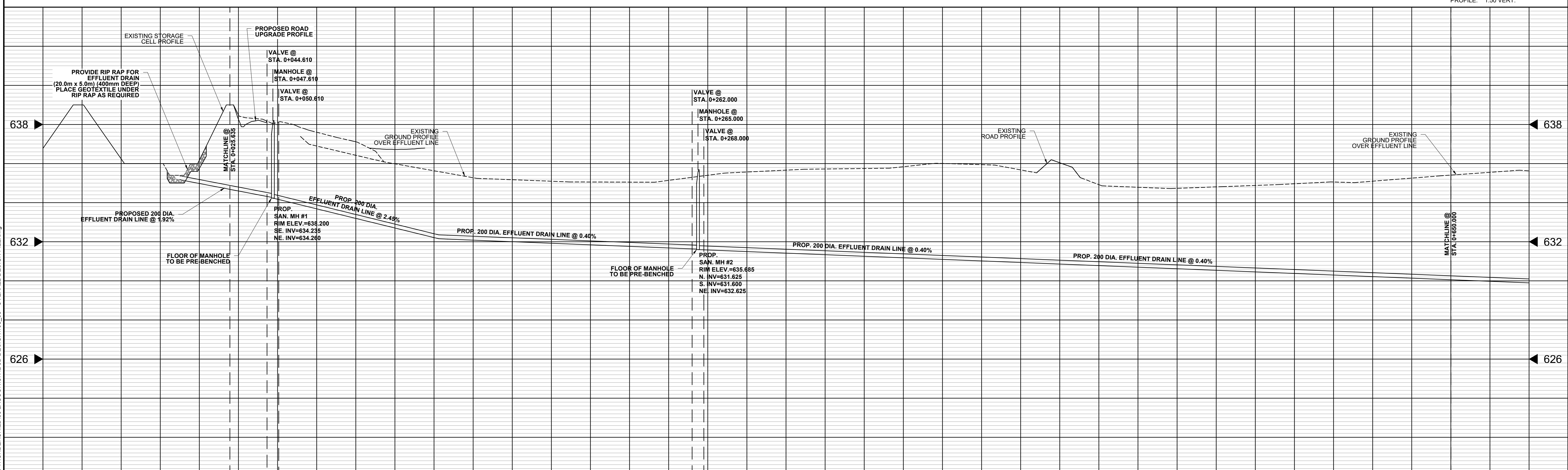
THUNDERCHILD FIRST NATION

**ISC PROJECT No. CT663/T956
LAGOON UPGRADE
MISCELLANEOUS DETAILS**

SCALE:	AS SHOWN	REV. No.	B	DRAWING No.		SHEET:	08 OF 12
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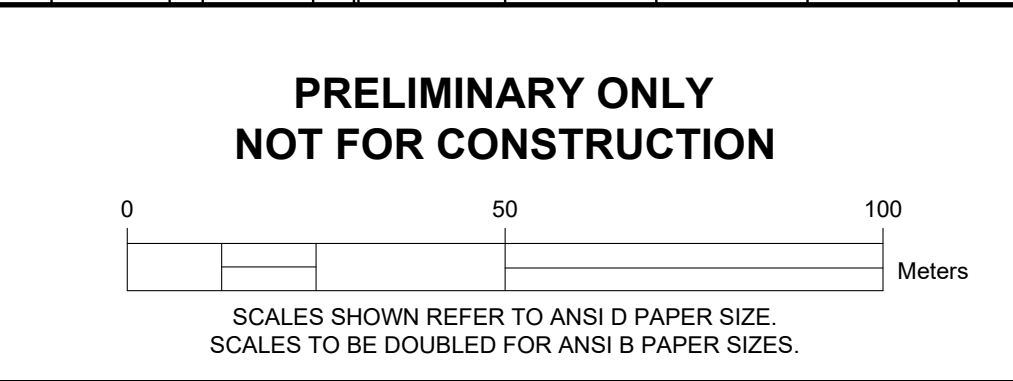


SCALES:
PLAN: 1:1000 HORIZ.
PROFILE: 1:50 VERT.

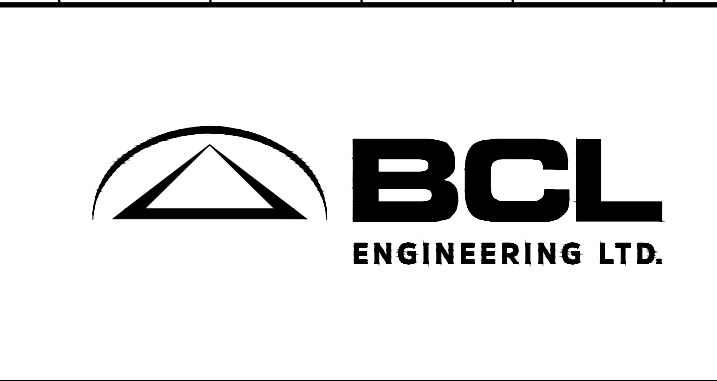


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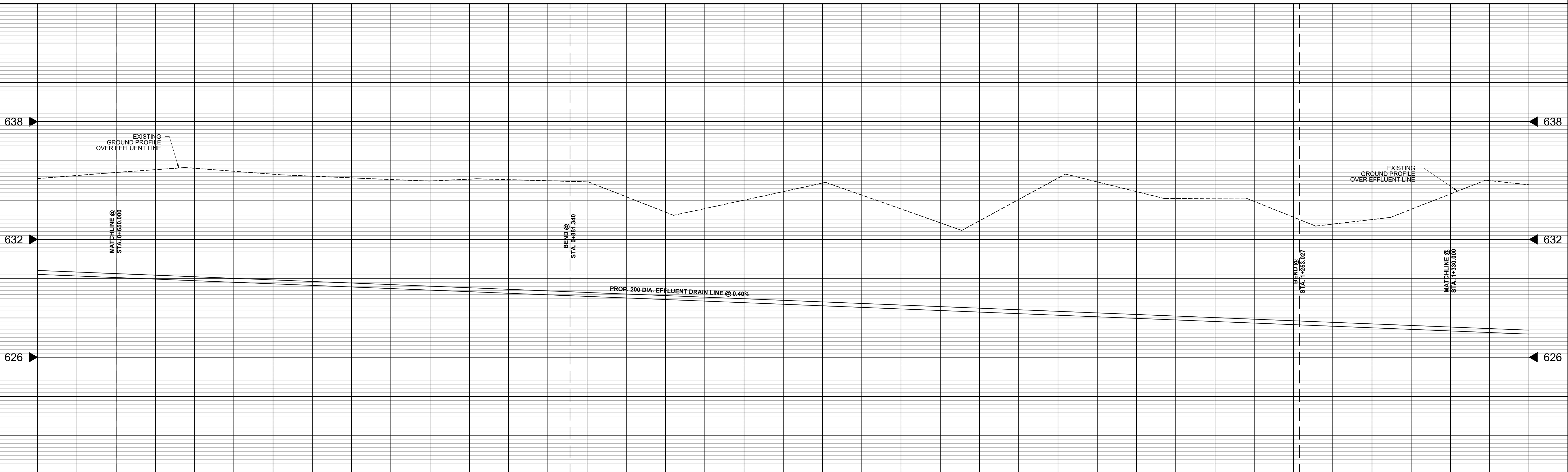
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DESIGNED:	M.B.F.	SCALE:	1:1000
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SHEET:	09	OF	12



SCALES:
 PLAN: 1:1000 HORIZ.
 PROFILE: 1:50 VERT.



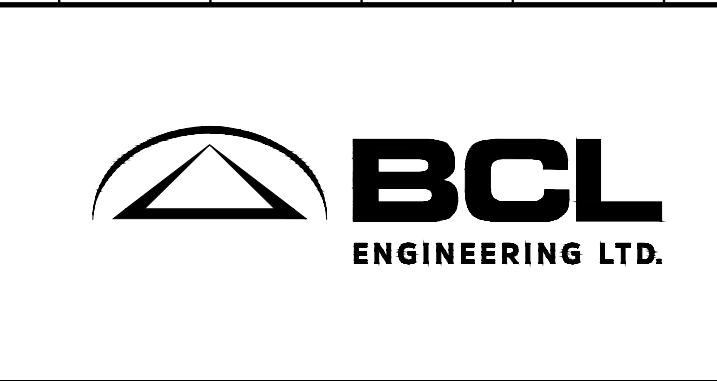
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ASSOCIATION OF PROFESSIONAL ENGINEERS
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BCL ENGINEERING LTD.
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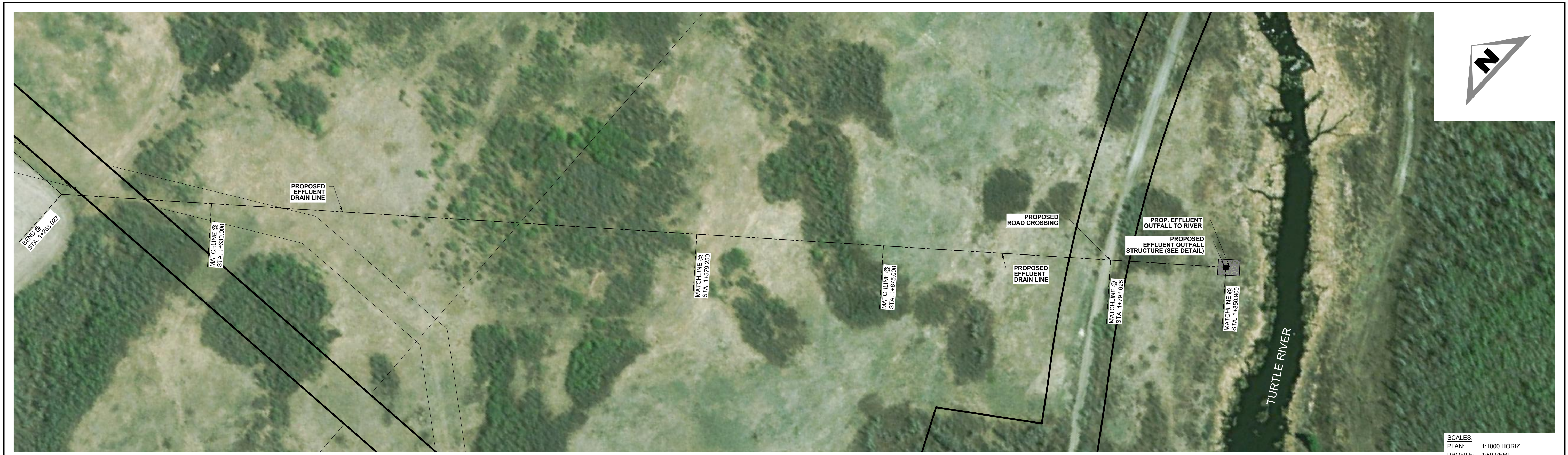
**PRELIMINARY ONLY
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SCALES SHOWN REFER TO ANSI D PAPER SIZE.
 SCALES TO BE DOUBLED FOR ANSI B PAPER SIZES.

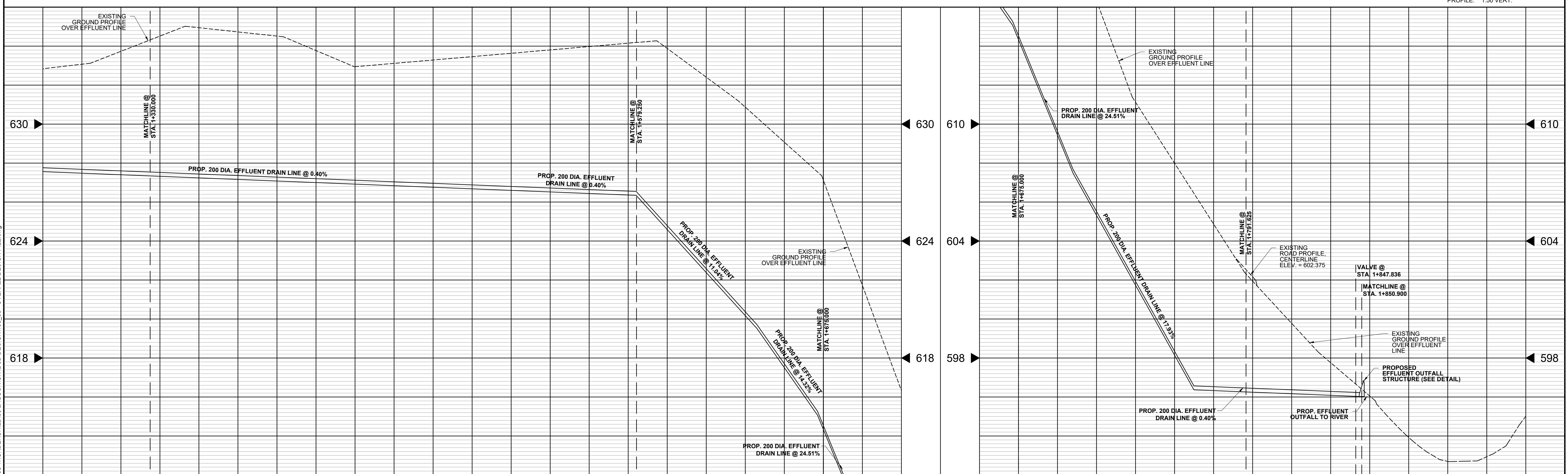
No.	REVISION	DATE	BY	STAMP
B	ISSUED FOR 90% DESIGN REVIEW	2022/07/06	M.B.F.	
A	ISSUED FOR 50% DESIGN REVIEW	2022/02/28	M.B.F.	



JOB No.	198.03		
DATE:	2022/07/06		
DRAWN:	K.M.N.		
CHECKED:	L.F.L.		
DESIGNED:	M.B.F.	SCALE:	1:1000
THUNDERCHILD FIRST NATION		REV. No.	B
ISC PROJECT No. CT663/T956		DRAWING No.	
LAGOON UPGRADE		SHEET:	10 OF 12
PLAN & PROFILE			



SCALES:
 PLAN: 1:1000 HORIZ.
 PROFILE: 1:50 VERT.



T:\dgn\198 THUNDERCHILD\03 LAGOON\CIVIL 3D DESIGN\198_03 - OVERALL DESIGN FILE.dwg 2022/06 3:53:04 PM

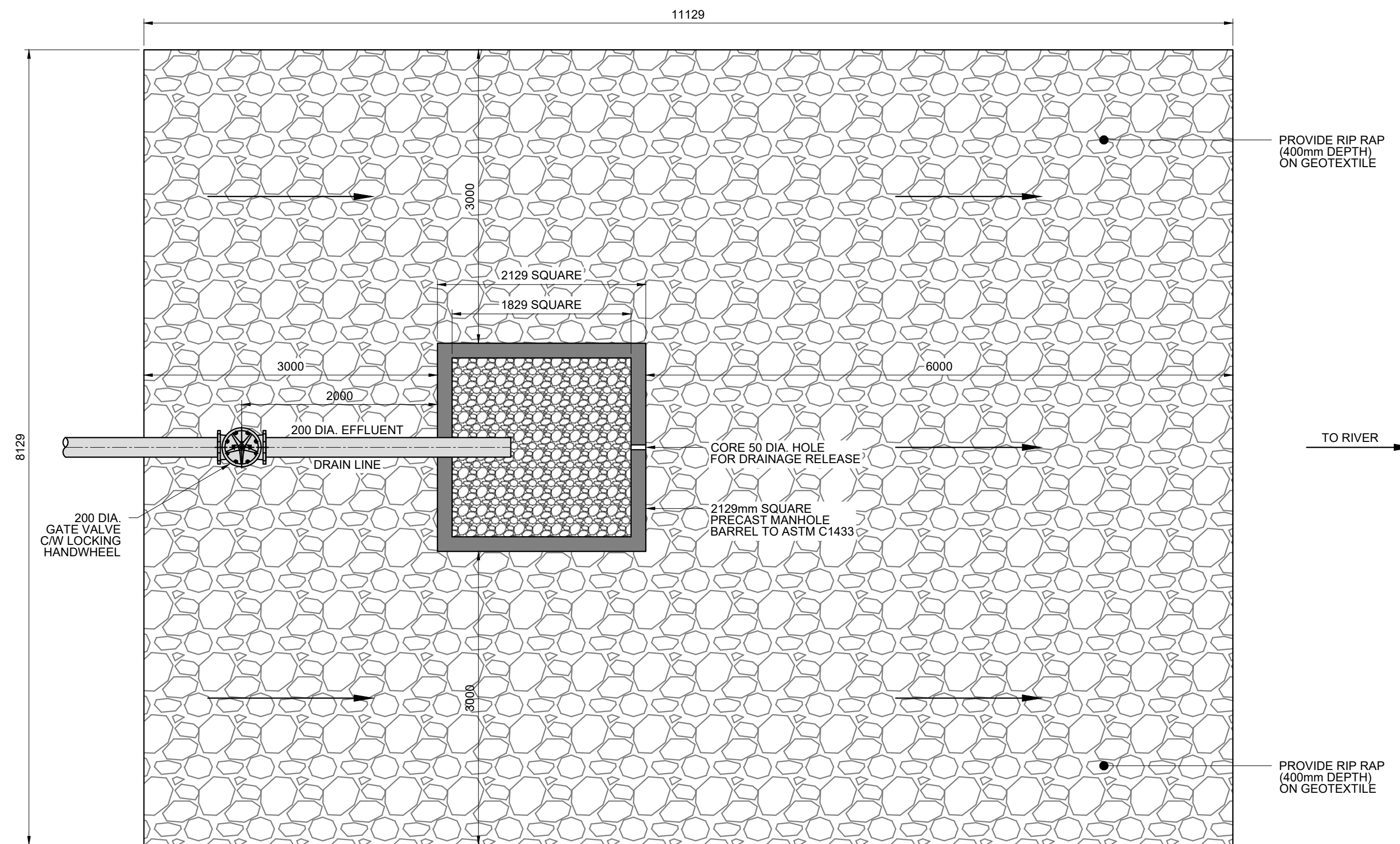
ASSOCIATION OF PROFESSIONAL ENGINEERS
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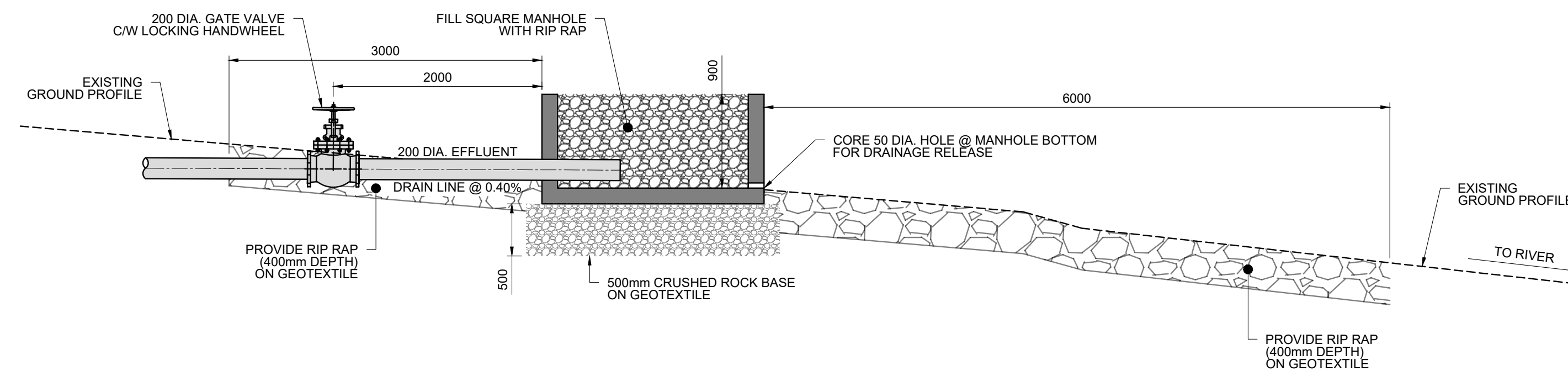
SCALES SHOWN REFER TO ANSI D PAPER SIZE.
 SCALES TO BE DOUBLED FOR ANSI B PAPER SIZES.

No.	REVISION	DATE	BY	STAMP
B	ISSUED FOR 90% DESIGN REVIEW	2022/07/06	M.B.F.	
A	ISSUED FOR 50% DESIGN REVIEW	2022/02/28	M.B.F.	

JOB No.	198.03	THUNDERCHILD FIRST NATION	
DATE:	2022/07/06	ISC PROJECT No. CT663/T956	
DRAWN:	K.M.N.	LAGOON UPGRADE	
CHECKED:	L.F.L.	PLAN & PROFILE	
DESIGNED:	M.B.F.	SCALE:	1:1000
REV. No.	B	DRAWING No.	
			SHEET: 11 OF 12



PLAN



SECTION

EFFLUENT OUTFALL STRUCTURE

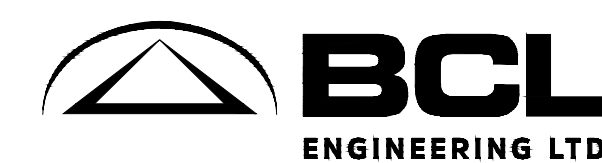
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No.	REVISION	DATE	BY	STAMP
B	ISSUED FOR 90% DESIGN REVIEW	2022/07/06	M.B.F.	
A	ISSUED FOR 50% DESIGN REVIEW	2022/02/28	M.B.F.	



JOB No.	198.03	THUNDERCHILD FIRST NATION		
DATE:	2022/07/06	ISC PROJECT No. CT663/T956		
DRAWN:	K.M.N.	LAGOON UPGRADE		
CHECKED:	L.F.L.	EFFLUENT OUTFALL STRUCTURE		
DESIGNED:	M.B.F.	SCALE:	REV. No.	DRAWING No.
		AS SHOWN	B	
				SHEET: 12 OF 12