



THE GOVERNMENT OF NUNAVUT
COMMUNITY AND GOVERNMENT SERVICES

KUGAARUK WASTEWATER TREATMENT

ISSUED FOR TENDER
MAY 2018

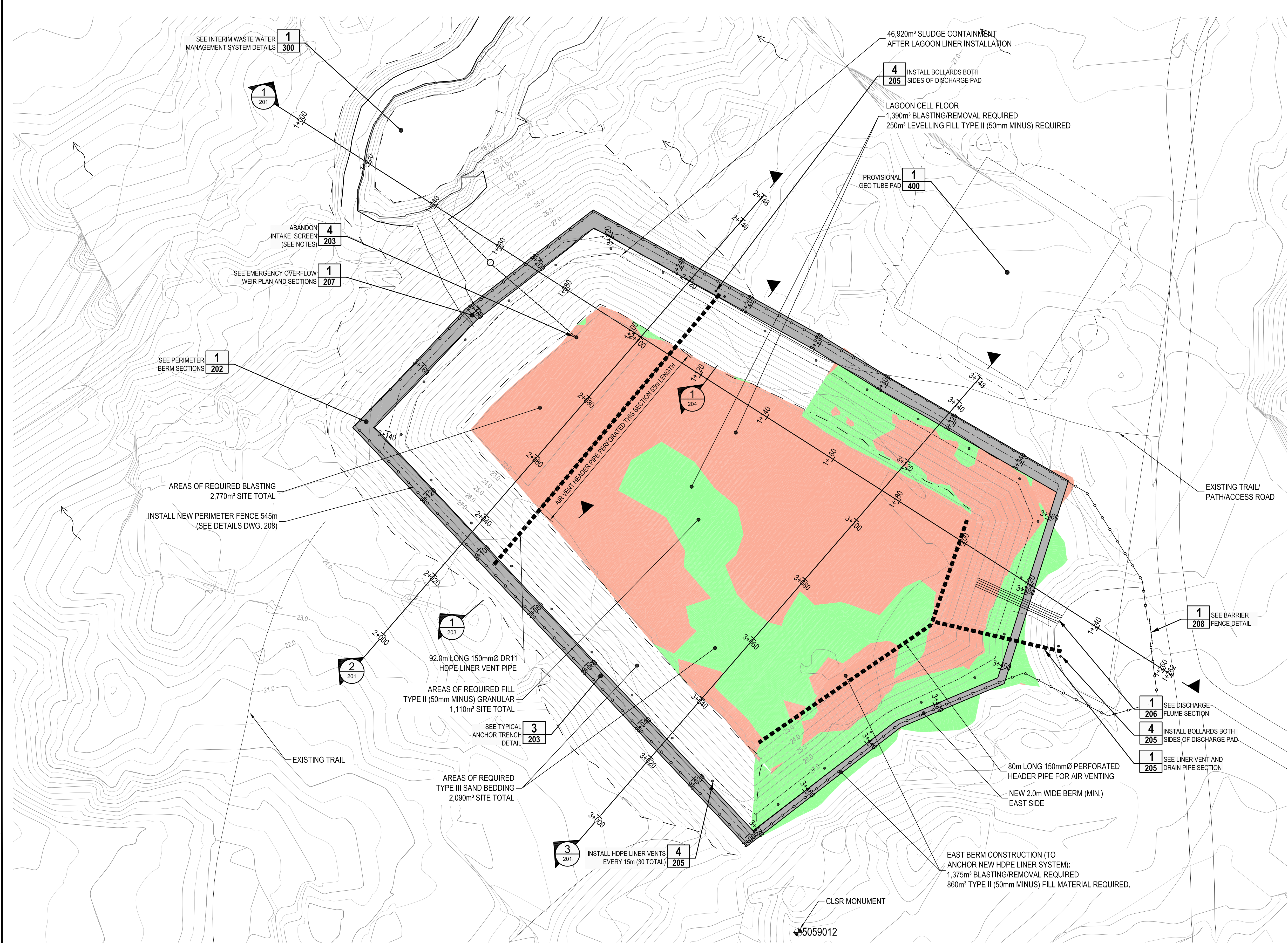
PROJECT NO. 15425-00239
CONTRACT NO. 15425-00239-04
DILLON PROJECT NO. 176042



SHEET LIST	
SHEET NUMBER	SHEET TITLE
	COVER
100	EXISTING SITE CONDITIONS
101	EXISTING SITE CONDITIONS - CROSS SECTIONS
102	EXISTING SITE TYPICAL DETAILS
103	EXISTING SITE TYPICAL DETAILS
200	SITE DESIGN PLAN
201	TYPICAL SITE DESIGN PROFILES
202	PERIMETER BERM SECTIONS
203	TYPICAL BERM DETAILS
204	LINER VENT AND DRAIN PIPE DETAILS
205	LINER VENT DETAILS
206	DISCHARGE FLUME DETAILS
207	EMERGENCY OVERFLOW WEIR DETAILS
208	FENCING AND BOLLARD DETAILS
300	INTERIM WASTE WATER MANAGEMENT SYSTEM
400	PROVISIONAL GEO TUBE PAD SITE PLAN

DILLON CONSULTING LIMITED 4020 47TH STREET, YELLOWKNIFE, NORTHWEST TERRITORIES, X1A 2P1, PHONE (867) 920-4655, FAX (867) 973-3328

FILENAME: C:\40\176042\176042_SWS_LAGOON_LINER DESIGN - BLASTING BRG3.DWG, PLOTTED BY: TREVOR
PLOT DATE: 2018-05-14 @ 3:56:11 PM PLOT SCALE: 1:1 PLOT STYLE: DILLON.DST



10 8 6 4 2 0 5 10 15 20 25m

SCALE 1:500

LEGEND:

—

MAJOR CONTOUR (1.0m)

- - -

MINOR CONTOUR (0.5m)

- · - · -

TOE OF SLOPE

— · — · —

TOP OF BERM

CONTAINMENT LEVEL

█

BLASTING / EXCAVATION REQUIRED

█

LEVELLING / FILL REQUIRED

→

DRAINAGE DIRECTION

- GENERAL NOTES:
1.

ALL DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.
2.

ALL DIMENSIONS TO BE CHECKED AND VERIFIED IN THE FIELD PRIOR TO ANY CONSTRUCTION. ANY DISCREPENCIES TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
3.

QUANTITIES SHOWN ARE APPROXIMATE AND FOR TENDERING PURPOSES ONLY.
4.

ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
5.

EXISTING UTILITIES ARE NOT TO BE DISTURBED, ANY CONFLICTS WITH EXISTING UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
6.

THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENTIRE DRAWING SET AND CONTRACT DOCUMENTS.
7.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS AS WELL AS ANY APPLICABLE TERRITORIAL STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.
8.

ANY SURVEY FOR THE PURPOSE OF LAYOUT, QUANTITY CALCULATIONS, OR RECORD DRAWING TO BE CONDUCTED WITH REFERENCE TO A CANADA LANDS AND SURVEY MONUMENT AS SHOWN IN THE COORDINATE TABLE.
9.

EXISTING INTAKE SCREEN TO BE REMOVED, CUT BELOW BASE, AND ABANDONED.
10.

DESIGN CONTOURS SHOWN ARE FINAL GRADE AND REPRESENT SAND AND TYPE II GRANULAR.

TYPE I MATERIAL: 75mm MINUS GRANULAR

TYPE II MATERIAL: 50mm MINUS GRANULAR

TYPE III MATERIAL: SAND/SAND BEDDING

RIP RAP: >75mm MINUS TO BOULDER SIZE

COORDINATE TABLE			
MONUMENT	NORTHING	EASTING	ELEVATION
5059008	7605122.82	384643.20	19.89
5059009	7605169.06	385193.42	16.63
5059010	7605875.55	386357.81	9.15
5059012	7603471.51	384308.27	30.83

UTM ZONE 16, NAD83 CRS
ELEVATIONS ARE ORTHOMETRIC AND DERIVED FROM GPS OBSERVATIONS USING THE HTV 2.0 GEOID MODEL.

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use.
Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

THE ASSOCIATION OF
PROFESSIONAL ENGINEERS,
GEOLOGISTS and GEOPHYSICISTS
OF THE NORTHWEST TERRITORIES

PERMIT NUMBER
P 03010

DILLON CONSULTING
LIMITED



ISSUED FOR TENDER



No.	ISSUED FOR	DATE	BY
5	ISSUED FOR TENDER	05/08/18	GS
4	ISSUED FOR 100% REVIEW	03/19/18	KB
3	ISSUED FOR 75% REVIEW	02/15/18	KB
2	ISSUED FOR CLIENT REVIEW	01/25/18	CES
1	ISSUED FOR INTERNAL REVIEW	12/15/17	TPW

DESIGN	CS	REVIEWED BY	KB
DRAWN	TPW	CHECKED BY	CS
DATE	MAY 2018		
SCALE	AS SHOWN		

KUGAARUK WASTEWATER TREATMENT
GOVERNMENT OF NUNAVUT

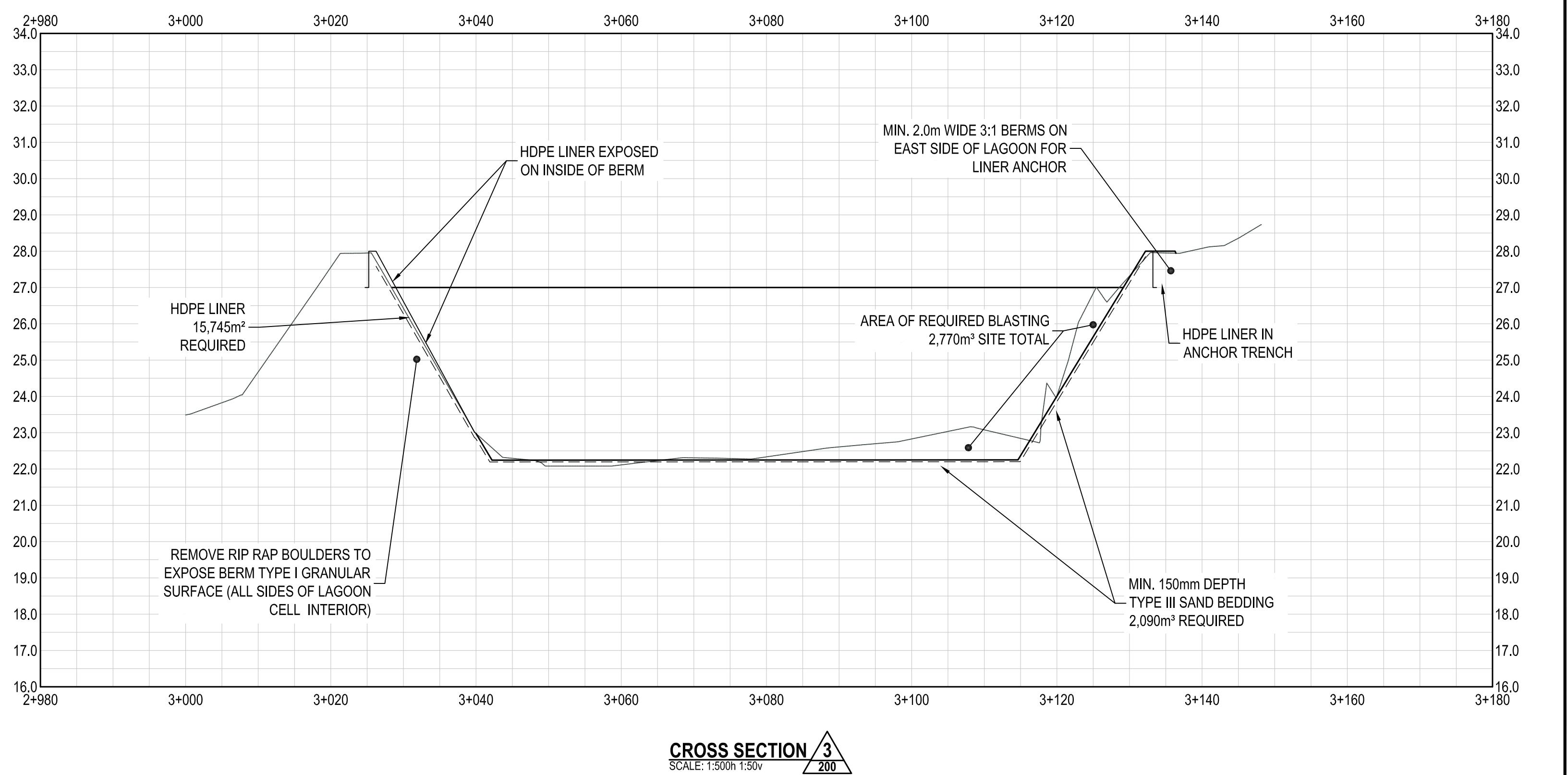
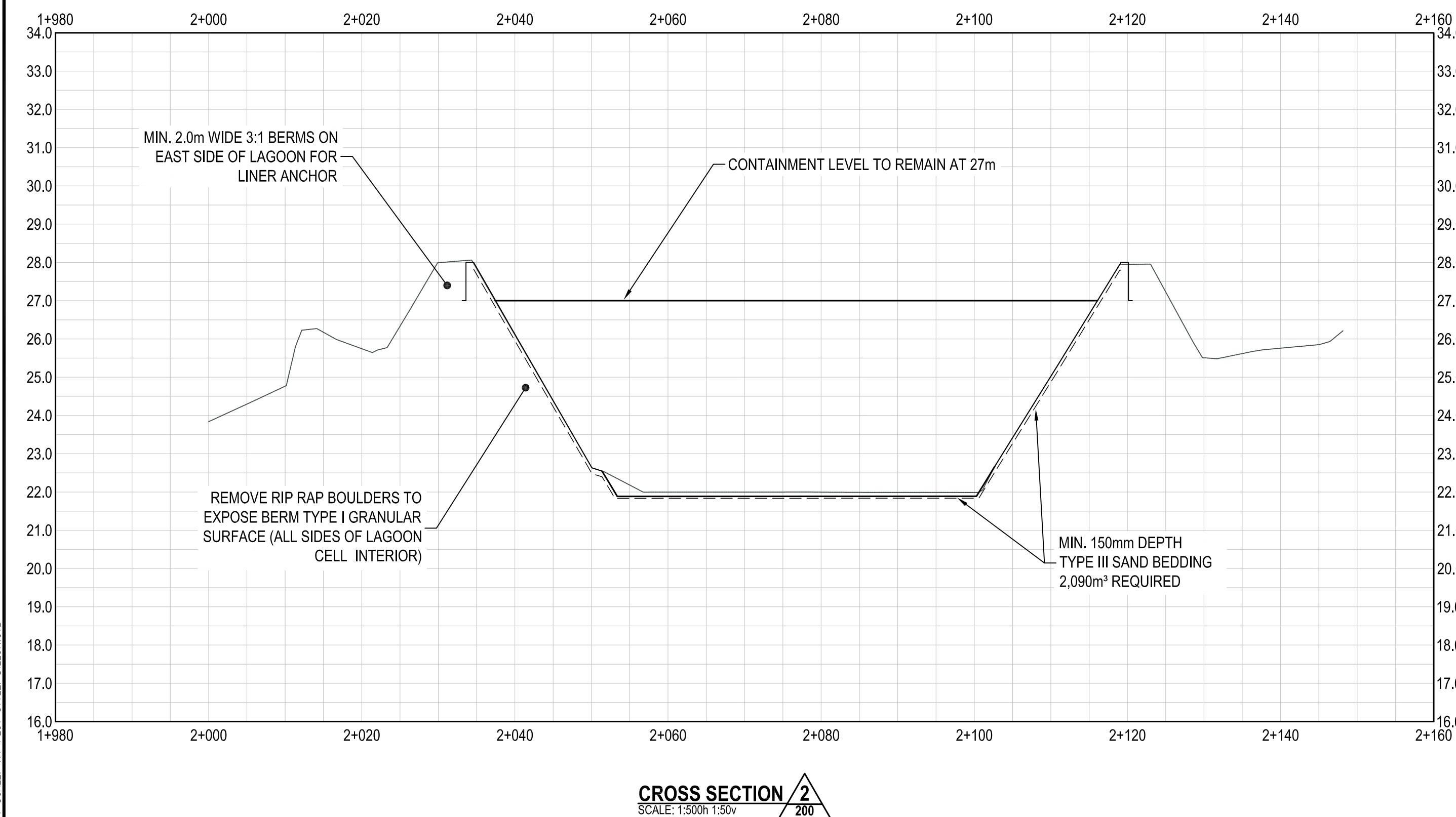
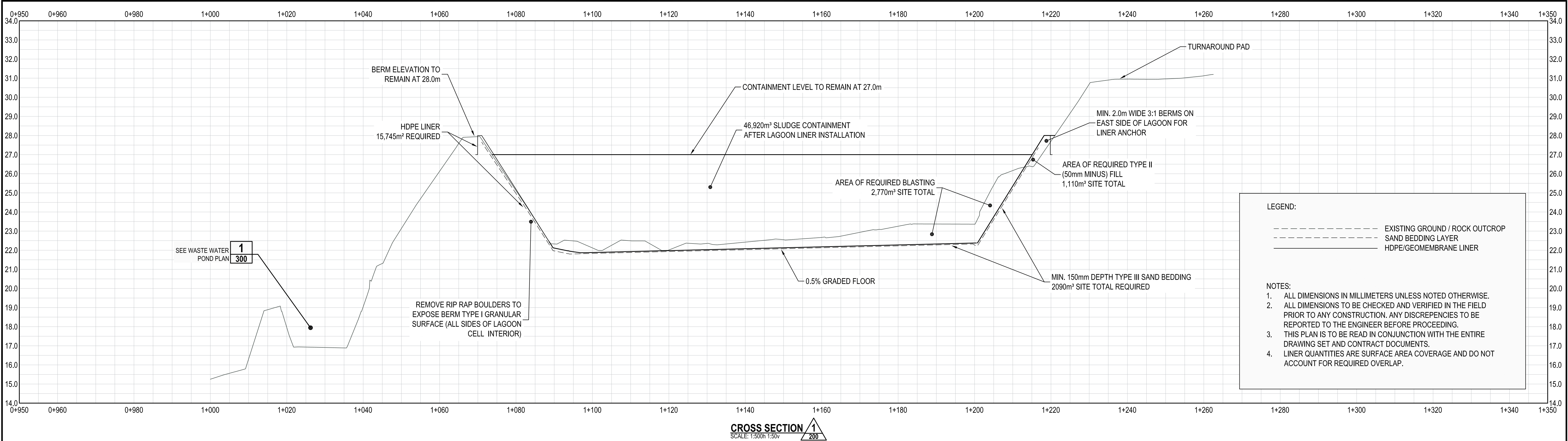
ISSUED FOR TENDER
SITE DESIGN PLAN

PROJECT NO.
17-6042

SHEET NO.
200

DILLON CONSULTING LIMITED 4920 47TH STREET, YELLOWKNIFE, NORTHWEST TERRITORIES, X1A 2P1, PHONE (867) 920-4555, FAX (867) 973-3328

FILENAME: C:\04\176042\176042_SWS_LAGOON_LINER DESIGN - BLASTING.BR3.DWG
PLOT DATE: 2018-05-14 @ 2:37:18 PM PLOT SCALE: 1:1 PLOT STYLE: DILLON.DST

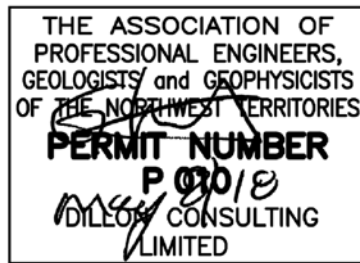


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DRAWN	TPW	CHECKED BY	CS
DATE	MAY 2018		
SCALE	AS SHOWN		

KUGAARUK WASTEWATER TREATMENT
GOVERNMENT OF NUNAVUT

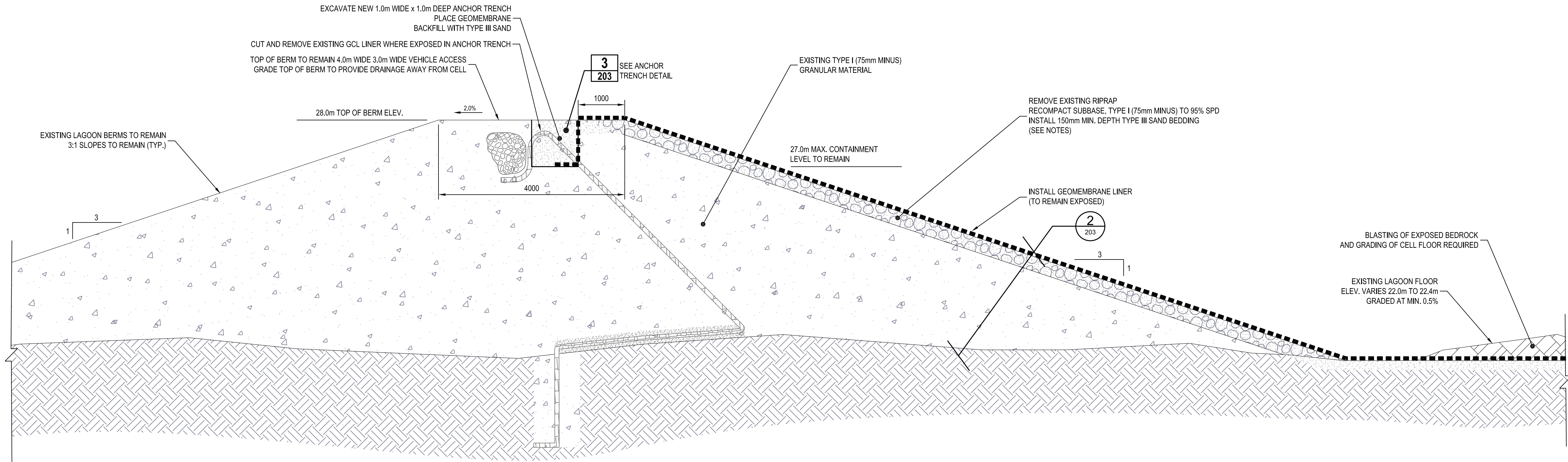
ISSUED FOR TENDER
TYPICAL SITE DESIGN PROFILES

PROJECT NO.
17-6042

SHEET NO.

201

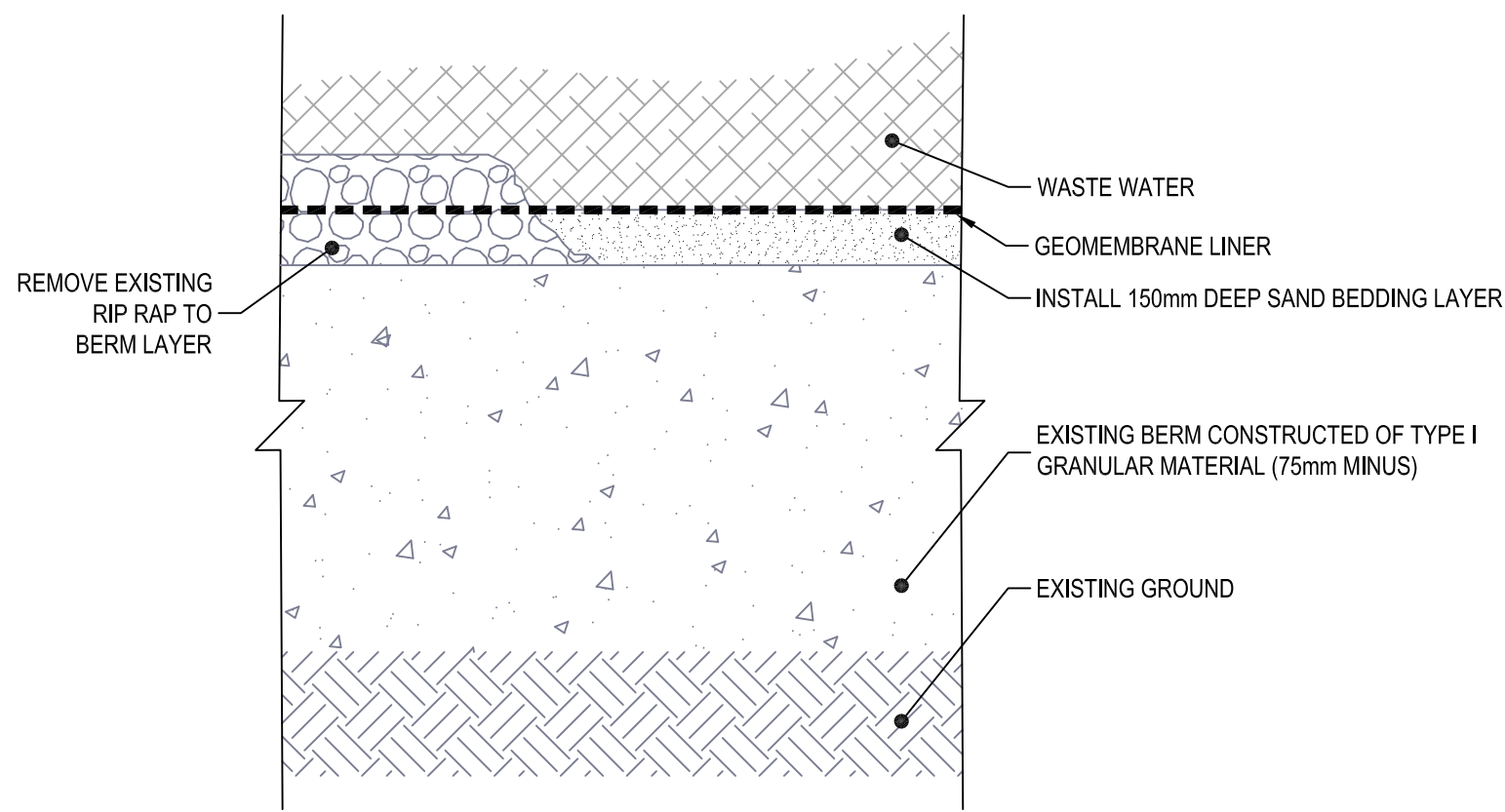
DILLON CONSULTING LIMITED 4920 47TH STREET, YELLOWKNIFE, NORTHWEST TERRITORIES, X1A 2P1, PHONE (867) 920-4555, FAX (867) 973-3328



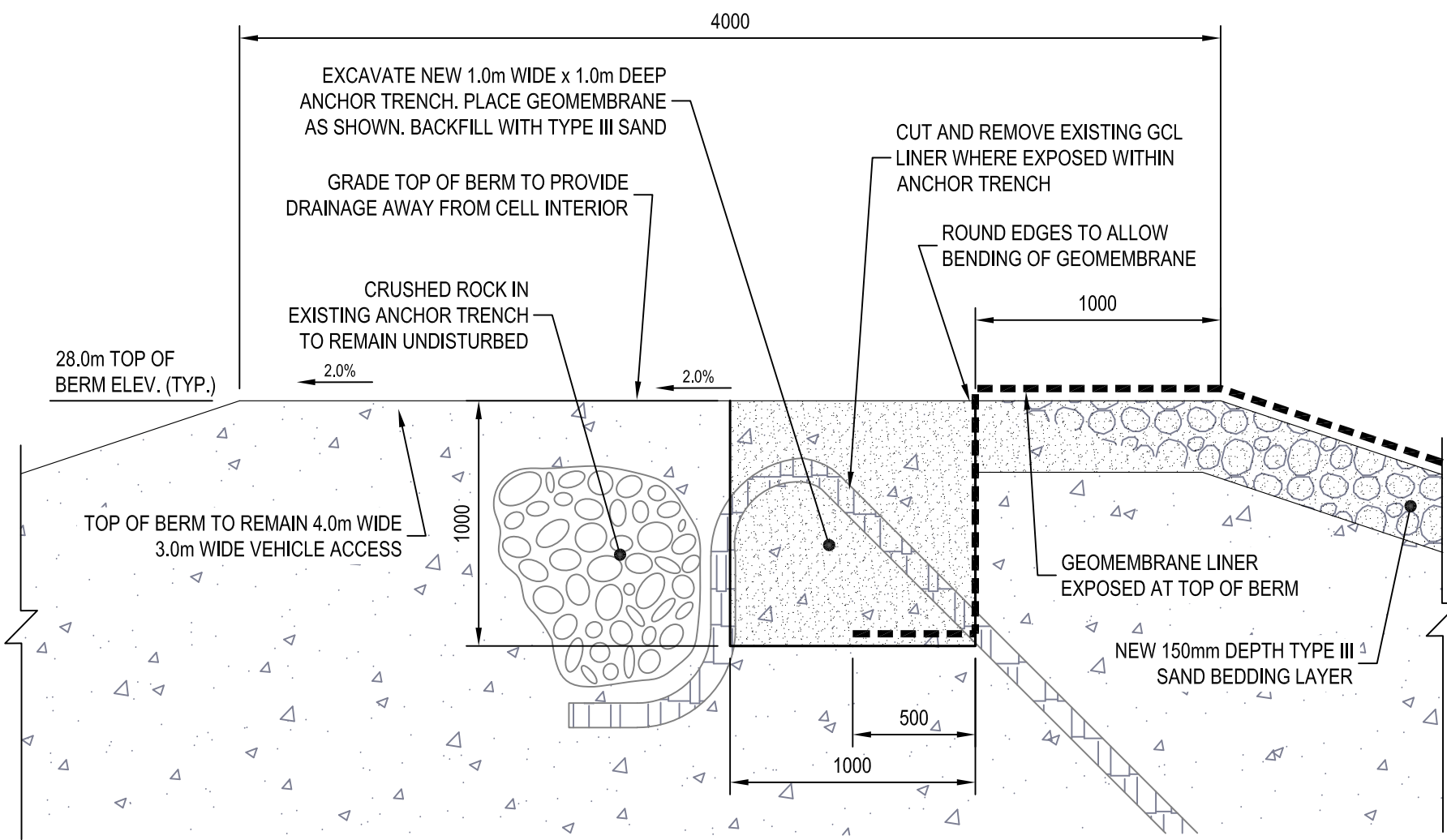
- GENERAL NOTES:
1. ALL DIMENSIONS IN MILLIMETERS UNLESS NOTED OTHERWISE.
 2. ALL DIMENSIONS TO BE CHECKED AND VERIFIED IN THE FIELD PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
 3. ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
 4. EXISTING UTILITIES ARE NOT TO BE DISTURBED. ANY CONFLICTS WITH EXISTING UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
 5. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENTIRE DRAWING SET AND CONTRACT DOCUMENTS.
 6. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE TERRITORIAL STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.

- NOTES:
1. REMOVE RIP RAP MATERIAL ON INTERIOR OF CELL BERMS TO SUBBASE, TYPE I (75mm MINUS) GRANULAR MATERIAL.
 2. THE SUBBASE SHALL BE UNIFORM AND FREE OF SHARP ROCK FRAGMENTS OR STONES, LARGE STONES AND OTHER DELETERIOUS MATTER SUCH AS CONSTRUCTION DEBRIS AND METALLIC OBJECTS. THE SURFACE SHALL NOT HAVE ANY NATURAL OR FOREIGN OBJECT THAT PROTRUDES ABOVE THE SURFACE OF THE SUBBASE.
 3. ANY MODIFICATION/ADDITIONAL WORK TO THE BERM SUBBASE SHALL BE TYPE II (50mm MINUS) GRANULAR MATERIAL WITH 3:1 SIDE SLOPES.
 4. ANY MODIFICATION/ADDITIONAL WORK TO THE TURNAROUND PAD SHALL BE TYPE II (50mm MINUS) GRANULAR MATERIAL WITH 2.5:1 SIDE SLOPES.
 5. COMPACT SUBBASE TO 95% SPD.
 6. ANCHOR TRENCH TO HAVE ROUNDED EDGES TO ACCOMMODATE LINER BENDING/INSTALLATION.
 7. LINER INSTALLERS TO APPROVE SAND BASE PREPARATION.
 8. LINER MANUFACTURER TO PROVIDE LINER LAYOUT PLAN.
 9. LINER MANUFACTURER TO APPROVE LINER PENETRATION.

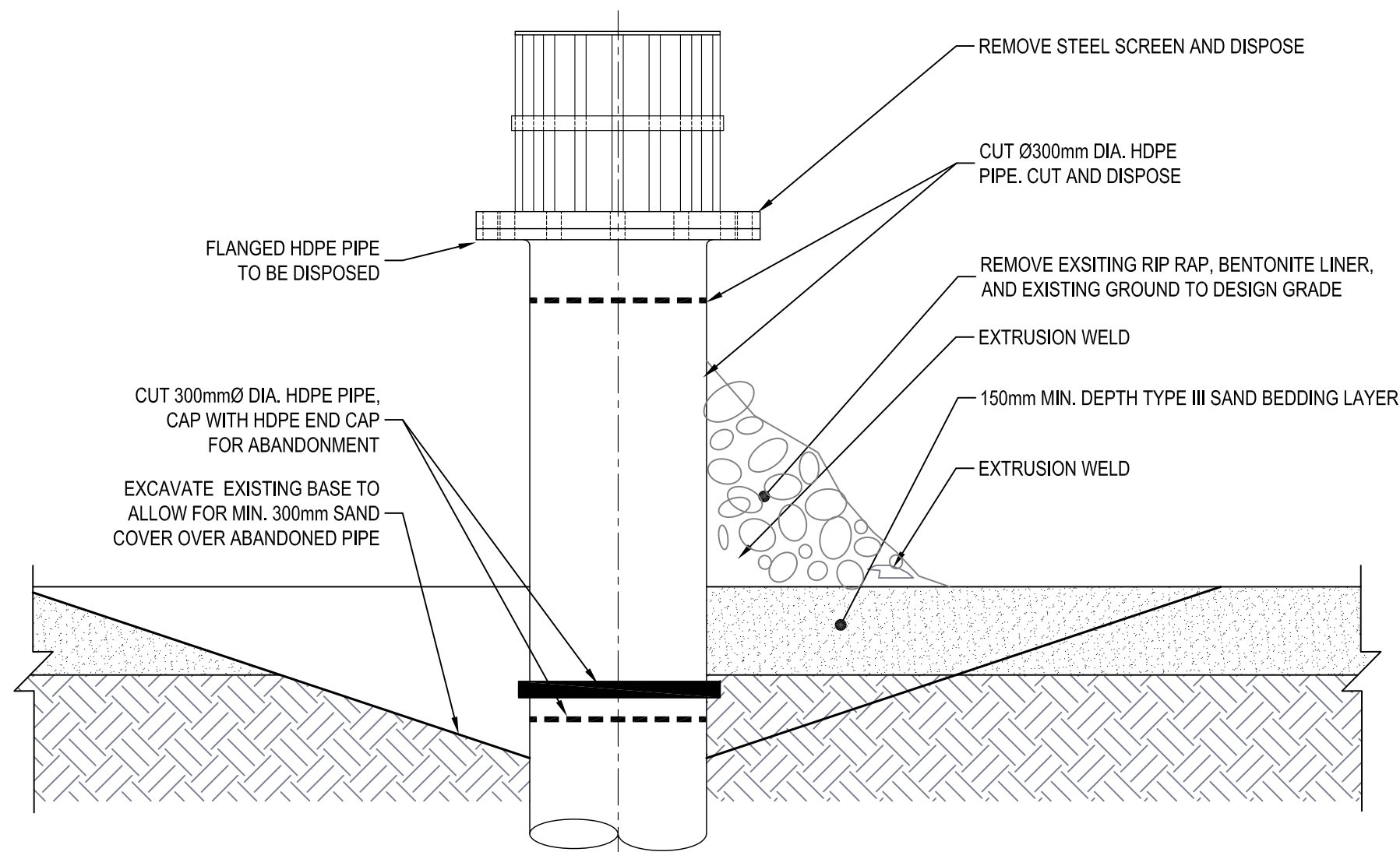
TYPICAL BERM SECTION
SCALE: 1:50



LINER SYSTEM SECTION
SCALE: 1:20



ANCHOR TRENCH DETAIL
SCALE: 1:25



INTAKE PIPE ABANDONMENT DETAIL
SCALE: 1:10

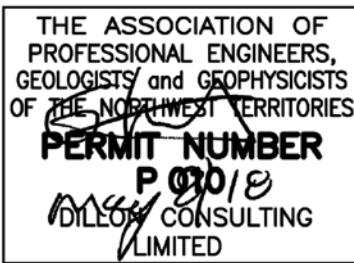


Conditions of Use

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3	ISSUED FOR 75% REVIEW	02/15/18	KB
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DESIGN	CS	REVIEWED BY	KB
DRAWN	TPW	CHECKED BY	CS
DATE	MAY 2018		
SCALE	AS SHOWN		

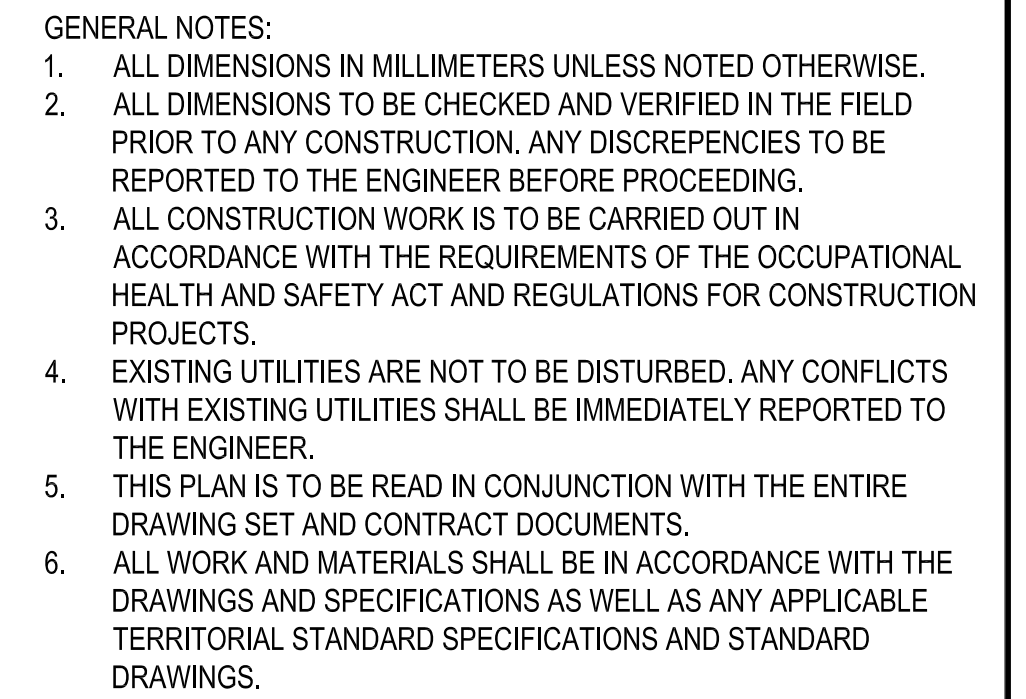
KUGAARUK WASTEWATER TREATMENT
GOVERNMENT OF NUNAVUT

PROJECT NO.
17-6042

ISSUED FOR TENDER
TYPICAL BERM DETAILS

SHEET NO.

203



- | |
|-------------|
| PROJECT NO. |
| 17-6042 |
| SHEET NO. |
| 204 |



A triangle with the number 1 above a horizontal line and the number 200 below the horizontal line.

SCALE: 1:50

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1. REMOVE RIP RAP MATERIAL ON INTERIOR OF CELL BERMS TO SUBBASE. TYPE I (75mm MINUS) GRANULAR MATERIAL.
2. THE SUBBASE SHALL BE UNIFORM AND FREE OF SHARP ROCK FRAGMENTS OR STONES, LARGE STONES AND OTHER DELETERIOUS MATTER SUCH AS CONSTRUCTION DEBRIS AND METALLIC OBJECTS. THE SURFACE SHALL NOT HAVE ANY NATURAL OR FOREIGN OBJECT THAT PROTRUDES ABOVE THE SURFACE OF THE SUBBASE.
3. ANY MODIFICATION/ADDITIONAL WORK TO THE BERM SUBBASE SHALL BE TYPE II (50mm MINUS) GRANULAR MATERIAL WITH 3:1 SIDE SLOPES.
4. ANY MODIFICATION/ADDITIONAL WORK TO THE TURNAROUND PAD SHALL BE TYPE II (50mm MINUS) GRANULAR MATERIAL WITH 2.5:1 SIDE SLOPES.
5. COMPACT SUBBASE TO 95% SPD.
6. LINER INSTALLERS TO APPROVE SAND BASE PREPARATION.
7. LINER MANUFACTURER TO PROVIDE LINER LAYOUT PLAN.
8. LINER MANUFACTURER TO APPROVE LINER PENETRATION.



2
205

SCALE: 1:20



3
205

SCALE: 1:20



4
205

SCALE: 1:10

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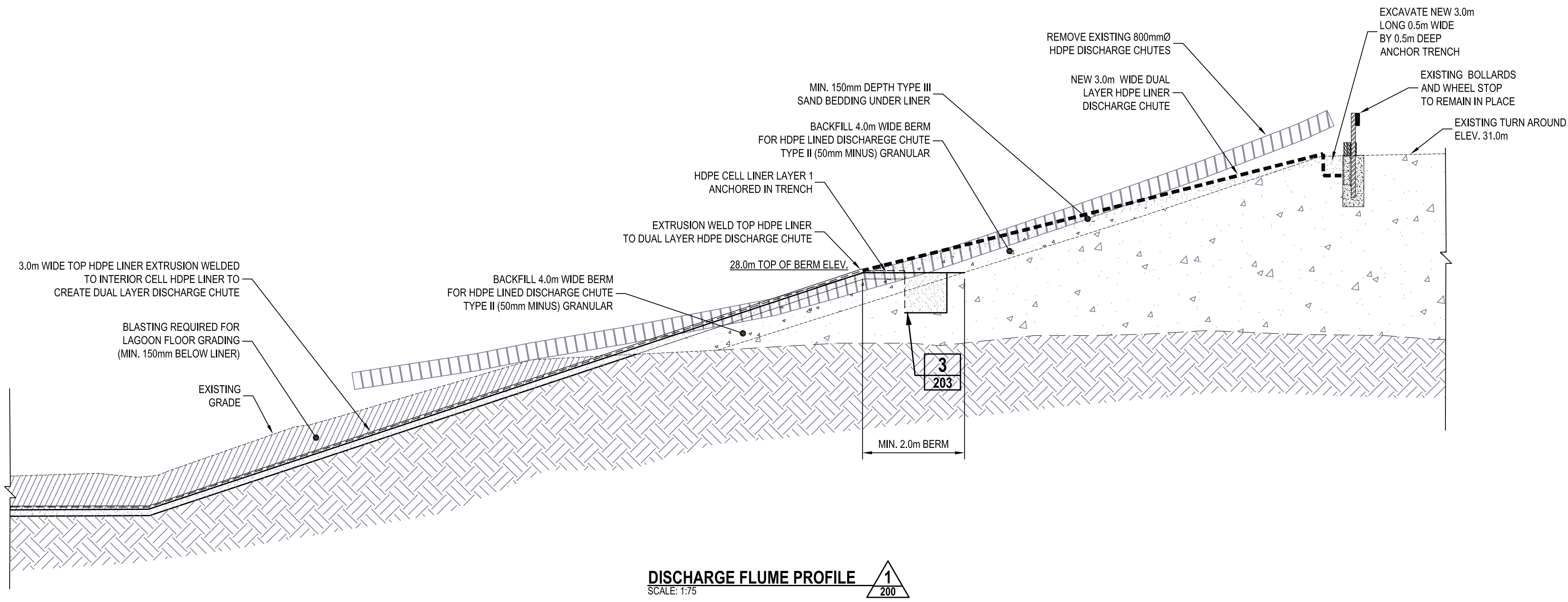


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CONSULTING

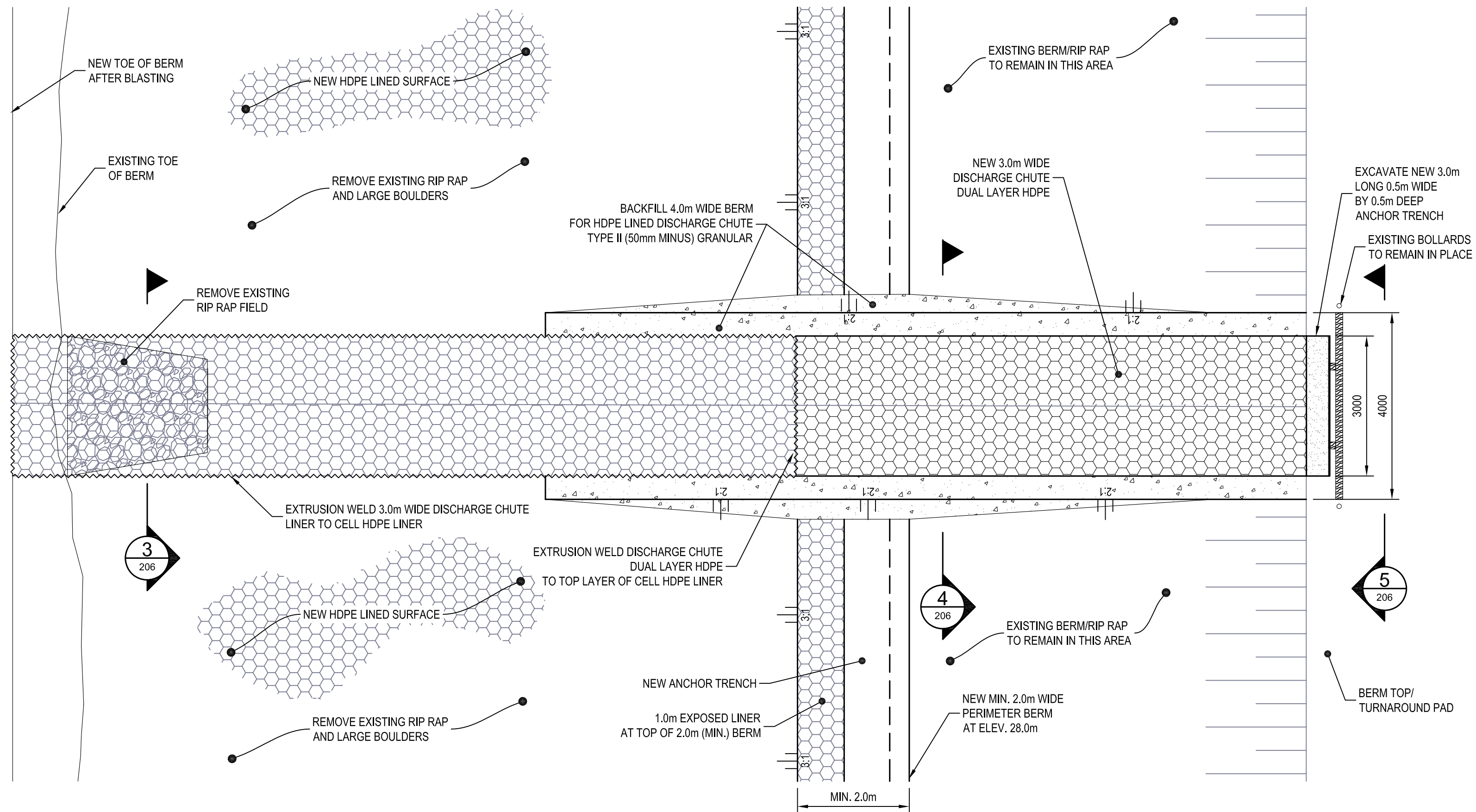
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				CS	KB		17-6042	
				DRAWN	CHECKED BY		ISSUED FOR TENDER LINER VENT DETAILS	SHEET NO. 205
				TPW	CS			
5	ISSUED FOR TENDER	05/08/18	GS	DATE	MAY 2018			
4	ISSUED FOR 100% REVIEW	03/19/18	KB					
3	ISSUED FOR 75% REVIEW	02/15/18	KB	SCALE	AS SHOWN			
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1	ISSUED FOR INTERNAL REVIEW	12/15/17	TPW					
No.	ISSUED FOR	DATE	BY					

DILLON CONSULTING LIMITED 4920 47TH STREET, YELLOWKNIFE, NORTHWEST TERRITORIES, X1A 2P1, PHONE (867) 920-4555, FAX (867) 973-3328

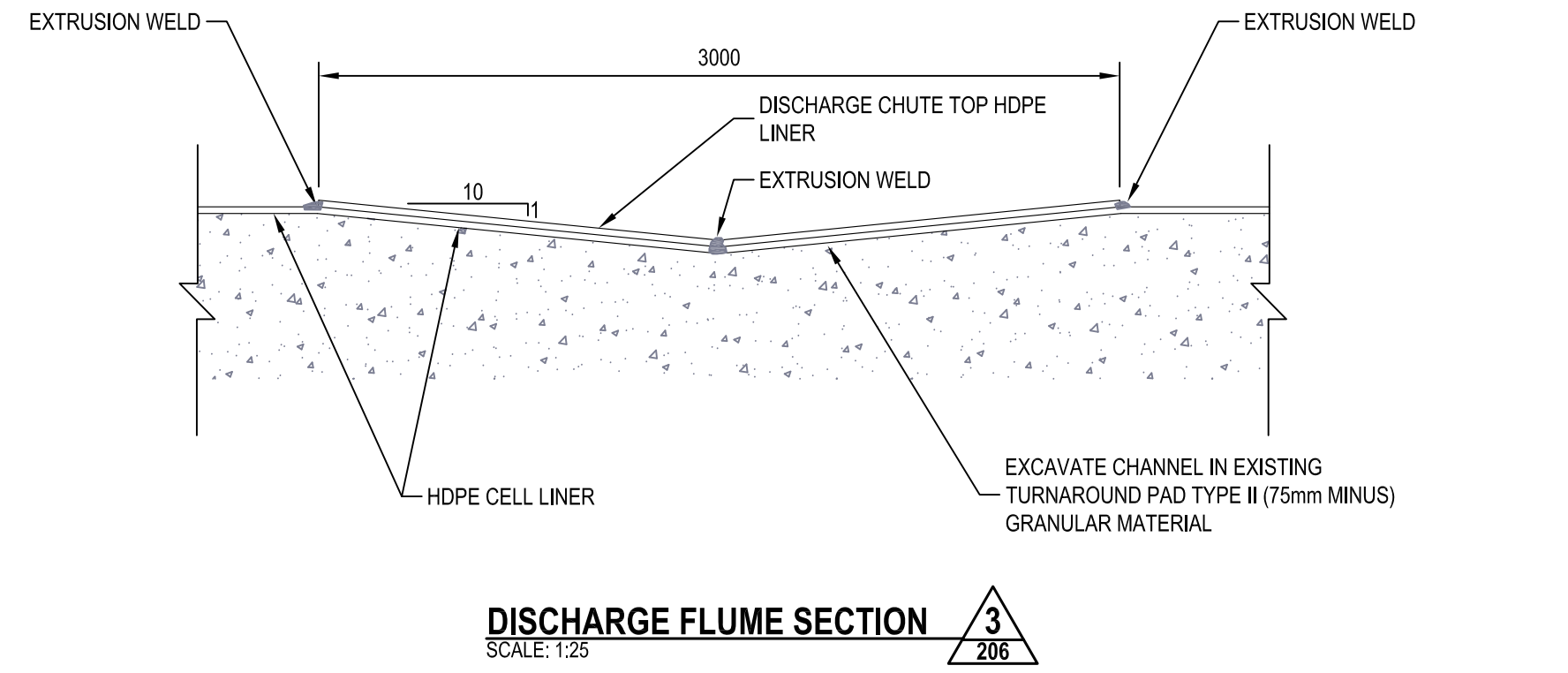
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DISCHARGE FLUME PROFILE 1
SCALE: 1:75

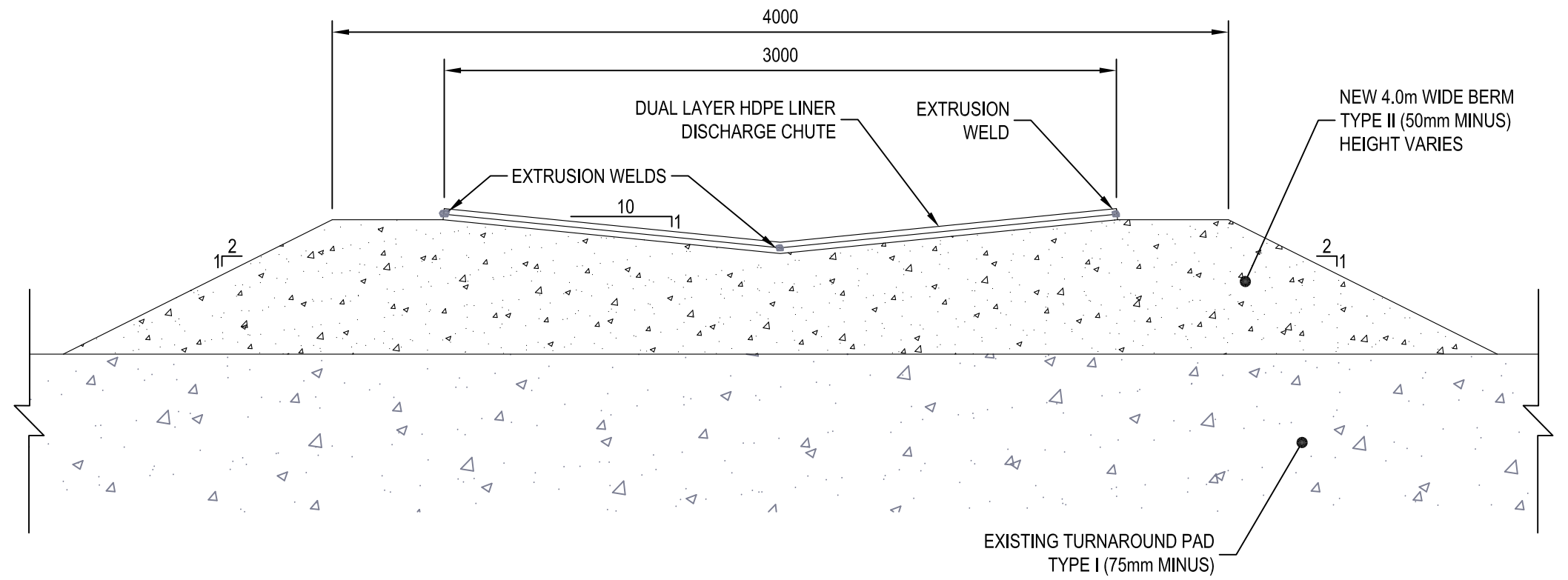


DISCHARGE FLUME PLAN 2
SCALE: 1:75



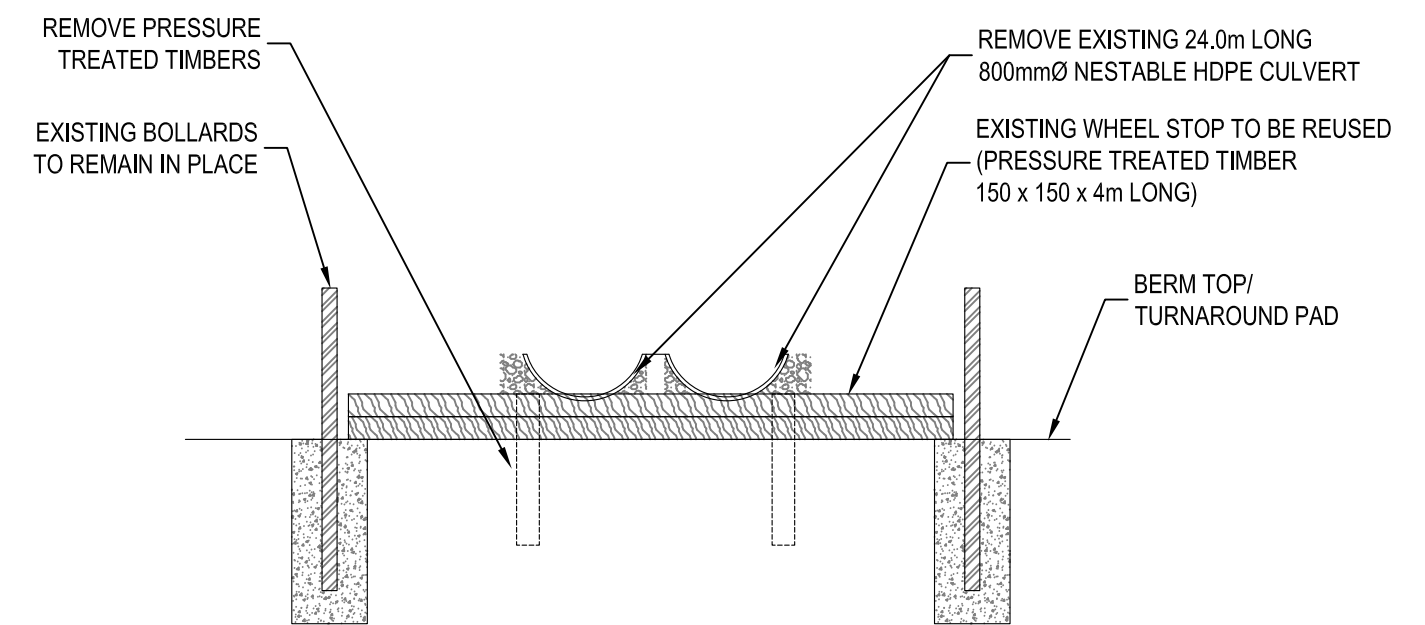
DISCHARGE FLUME SECTION 3
SCALE: 1:25

NOTE:
LINER CONFIGURATION AND WELDS MAY VARY
DEPENDING ON MANUFACTURERS REQUIREMENTS



DISCHARGE FLUME SECTION 4
SCALE: 1:25

NOTE:
LINER CONFIGURATION AND WELDS MAY VARY
DEPENDING ON MANUFACTURERS REQUIREMENTS



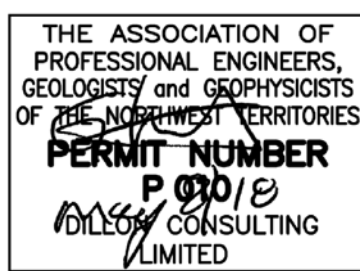
DISCHARGE FLUME SECTION 5
SCALE: 1:50

Conditions of Use

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DRAWN	TPW	CHECKED BY	CS
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KUGAARUK WASTEWATER TREATMENT
GOVERNMENT OF NUNAVUT

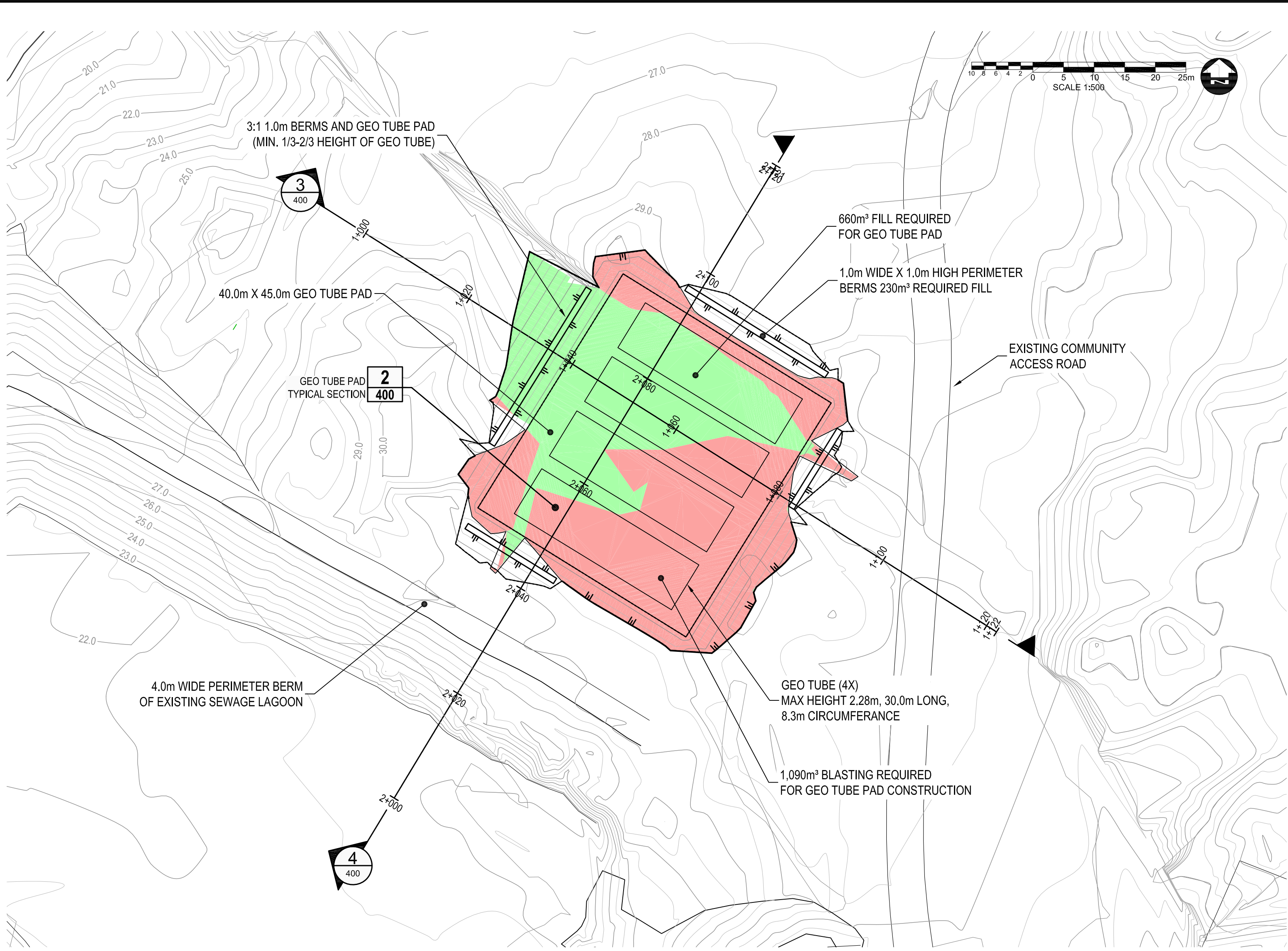
ISSUED FOR TENDER
DISCHARGE FLUME DETAILS

PROJECT NO.
17-6042

SHEET NO.
206

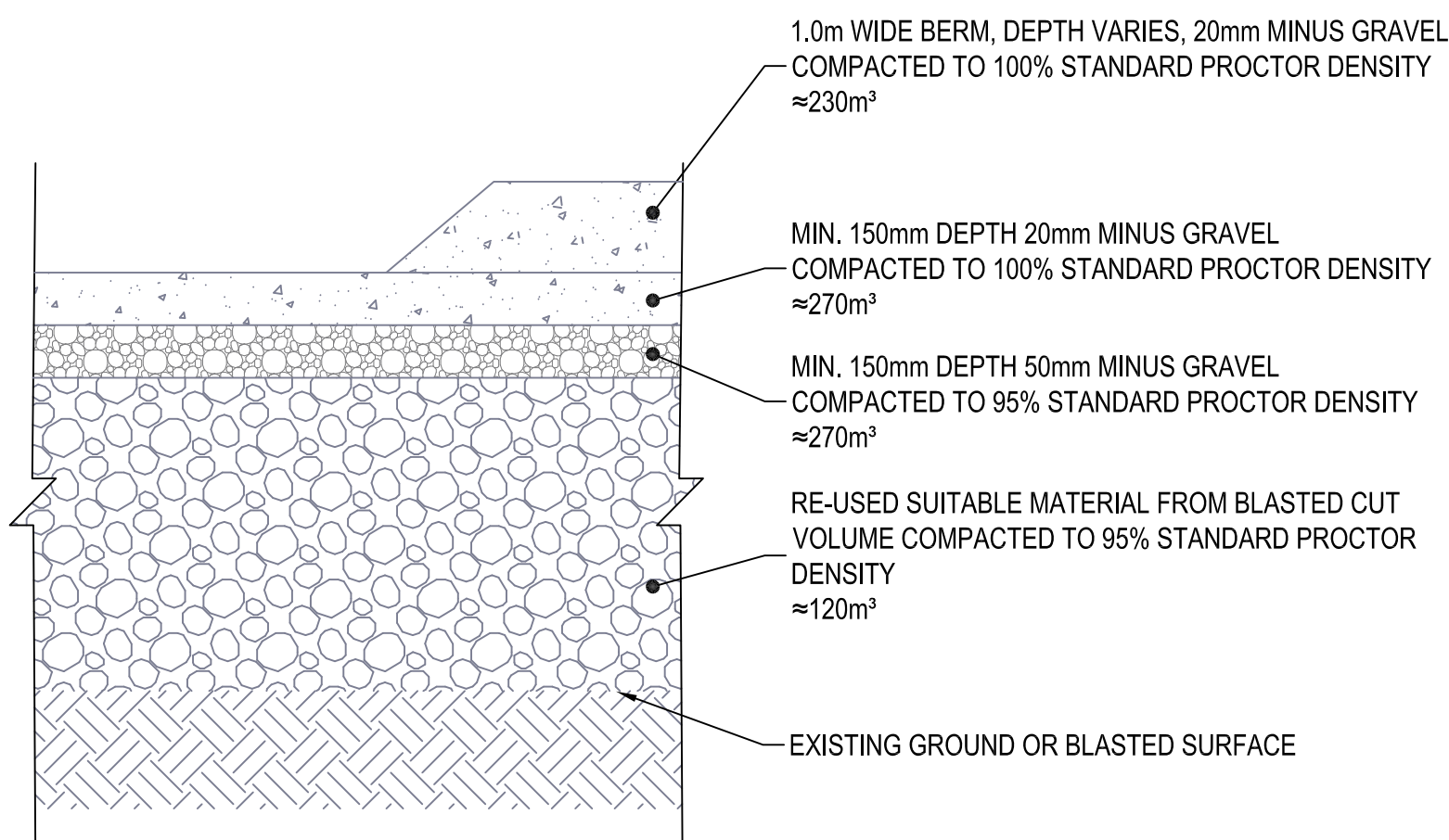
DILLON CONSULTING LIMITED 4920 47TH STREET, YELLOWKNIFE, NORTHWEST TERRITORIES, X1A 2P1, PHONE (867) 920-4555, FAX (867) 973-3323

FILENAME: C:\420\176042\176042_SWS - SLUDGE POND PAD - BALANCE.DWG
PLOT DATE: 2018-05-14 @ 15:53:54 PM PLOT SCALE: 1:1 PLOT STYLE: DILLON.CTB

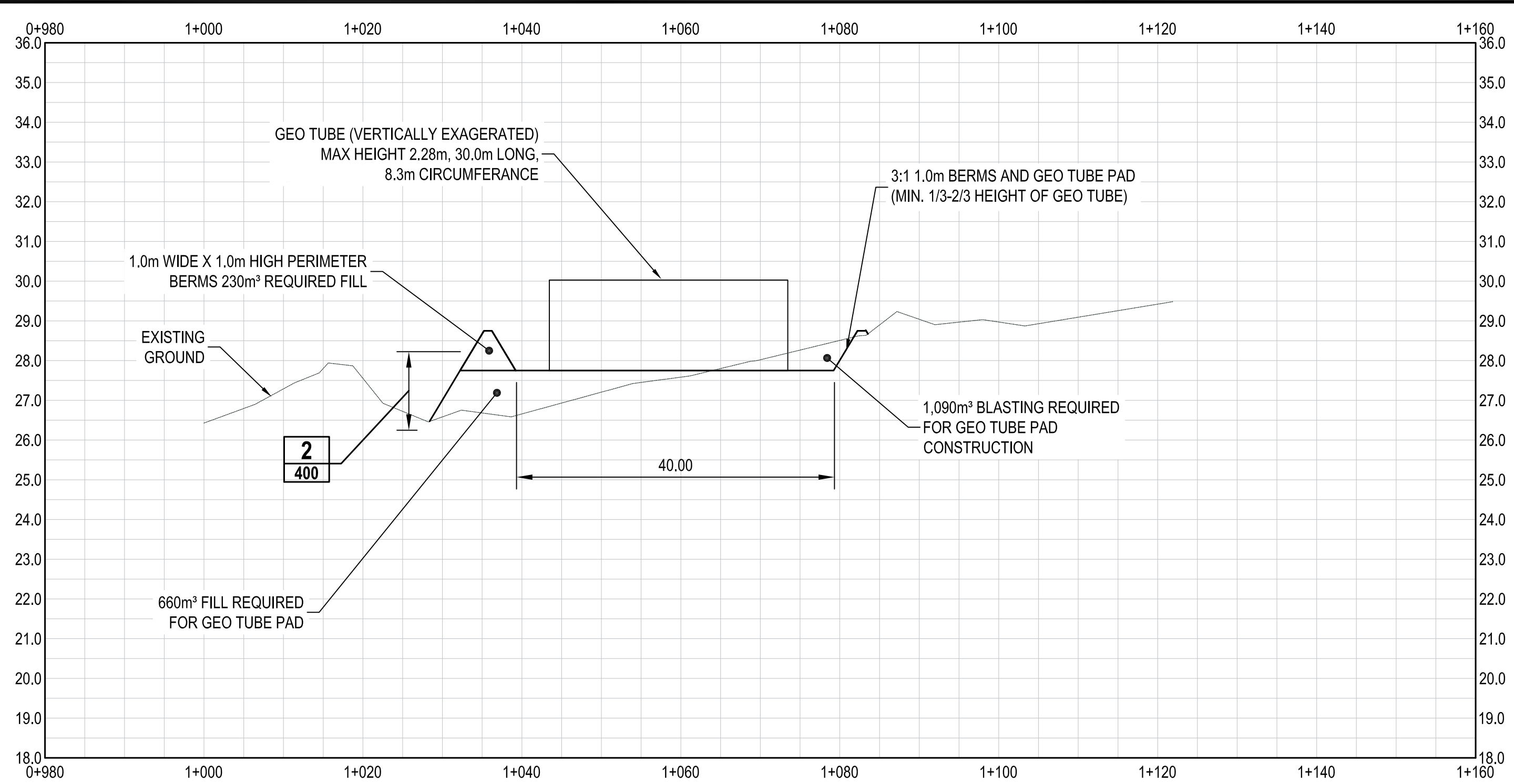


GEO TUBE PAD PLAN 1
SCALE: 1:500

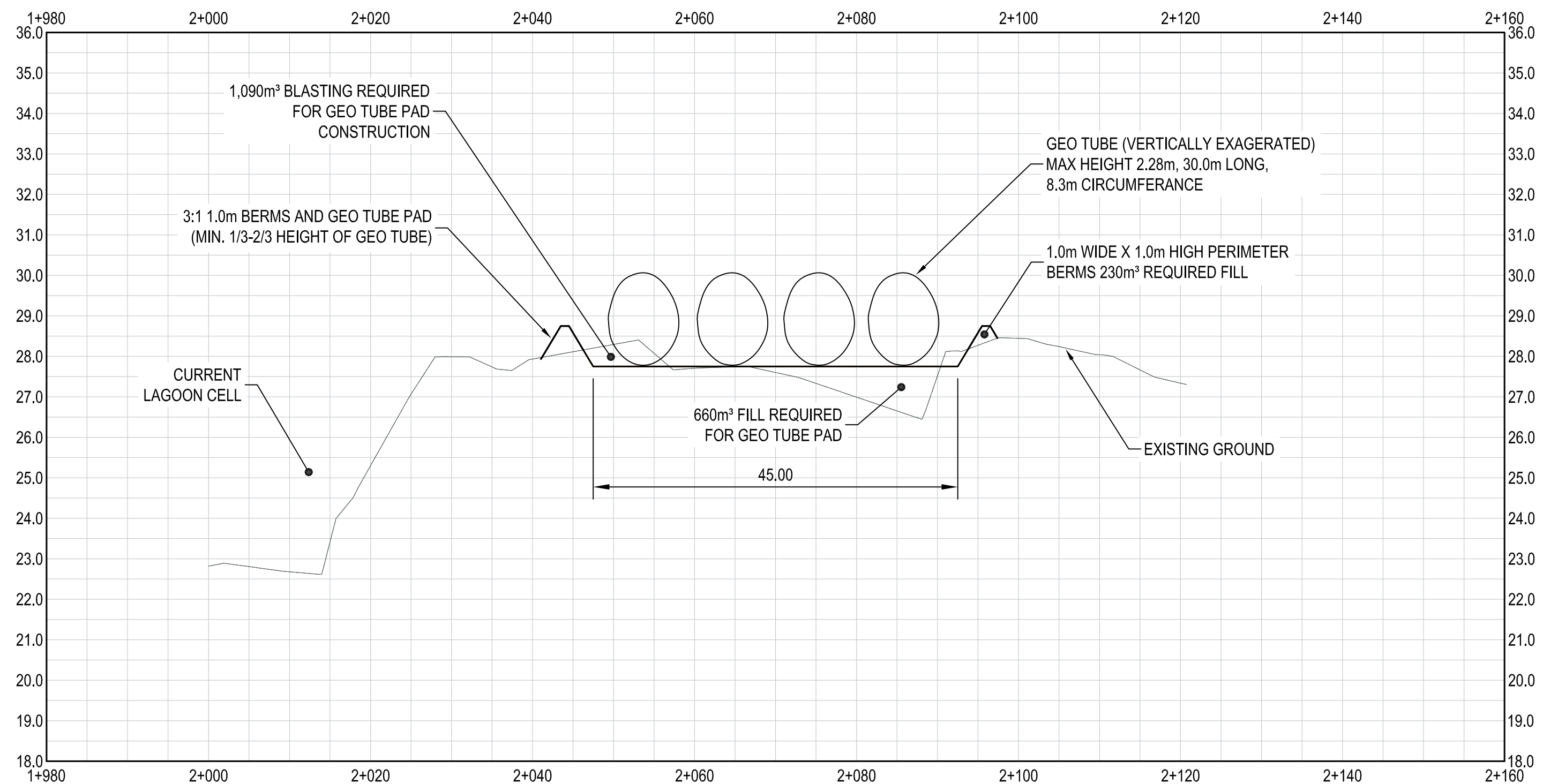
- NOTES:
1. QUANTITIES ASSUME THAT BLASTED ROCK CAN AND WILL BE CRUSHED TO PROVIDE LEVELLING FILL FOR THE PAD AND THE PERIMETER BERMS SEE SECTION 2 THIS DRAWING.
 2. THE GEO TUBE PAD DESIGN RELIES ON ELEVATION DATA AND TOPOGRAPHY PROVIDED BY OTHERS. THE LOCATION SHOWN AND DESIGN ELEVATIONS ARE SUBJECT TO CHANGE DEPENDING ON ACTUAL SITE CONDITIONS. A PRELIMINARY SURVEY SHOULD BE CONDUCTED TO CONFIRM DESIGN AND PROVIDE A REFERENCE FOR BLAST AND FILL QUANTITIES.
 3. THE GEO TUBE PAD ELEVATION MAY BE ADJUSTED PRIOR TO CONSTRUCTION TO PROVIDE A SURPLUS OF BLAST ROCK IF REQUIRED.
 4. GEO TUBE SUPPLY, INSTALLATION, AND USE AS PER MANUFACTURERS DIRECTIONS.
 5. CONFIRM GEOTUBE DIMENSIONS WITH SUPPLIER/INSTALLER PRIOR TO CONSTRUCTION OF PAD.
 6. DESLUDGING (DREDGING) AND PUMPING OPERATION TO BE EXECUTED BY QUALIFIED CONTRACTOR.



GEO TUBE PAD SECTION 2
SCALE: 1:20



GEO TUBE PAD SECTION 3
SCALE: 1:500h 1:100v



GEO TUBE PAD SECTION 4
SCALE: 1:500h 1:100v

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KUGAARUK WASTEWATER TREATMENT
GOVERNMENT OF NUNAVUT

ISSUED FOR TENDER

PROVISIONAL GEO TUBE PAD SITE PLAN

PROJECT NO.
17-6042

SHEET NO.
400