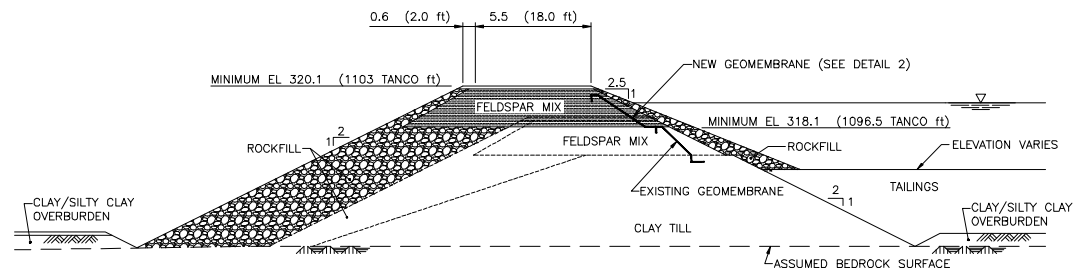
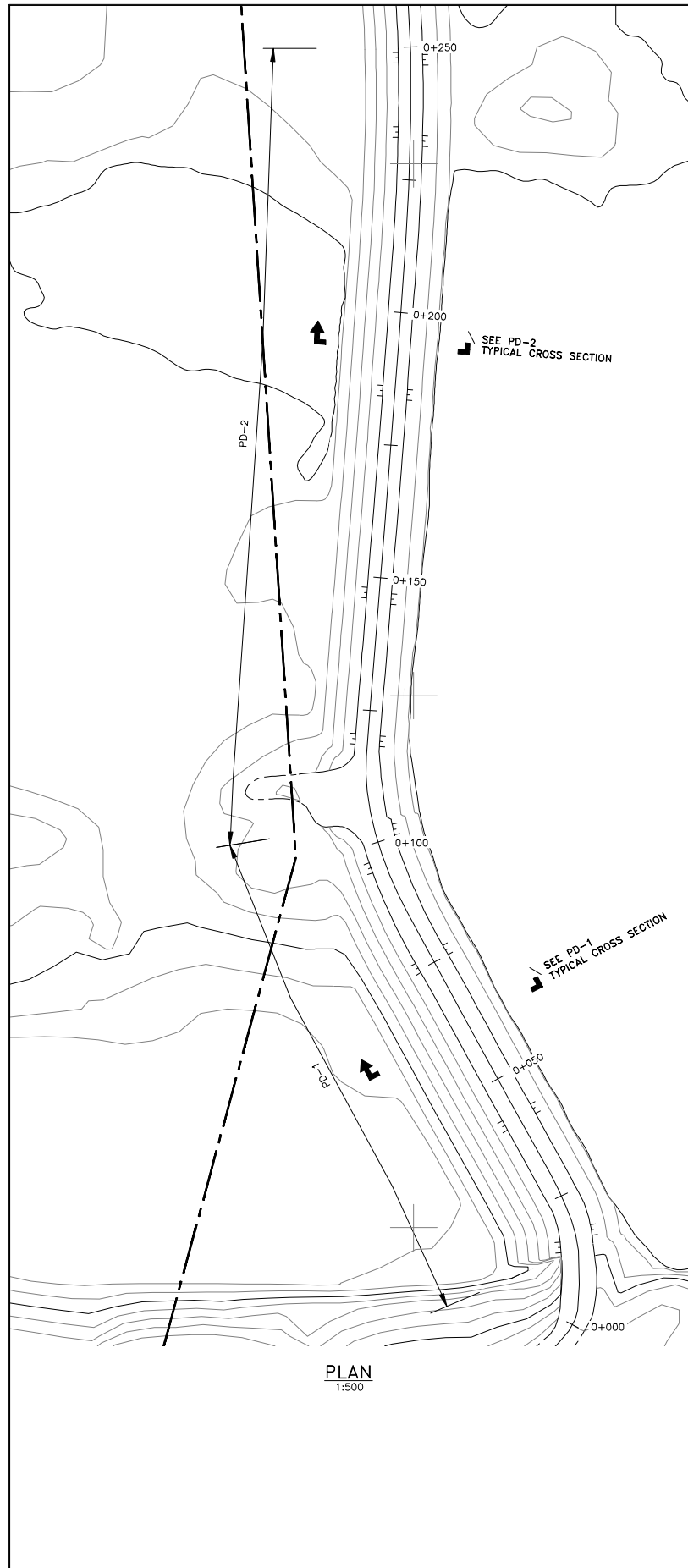
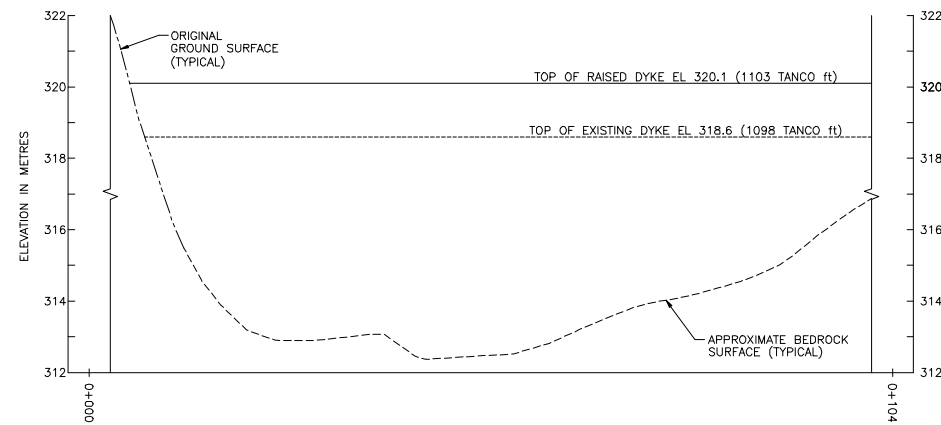


APPENDIX E

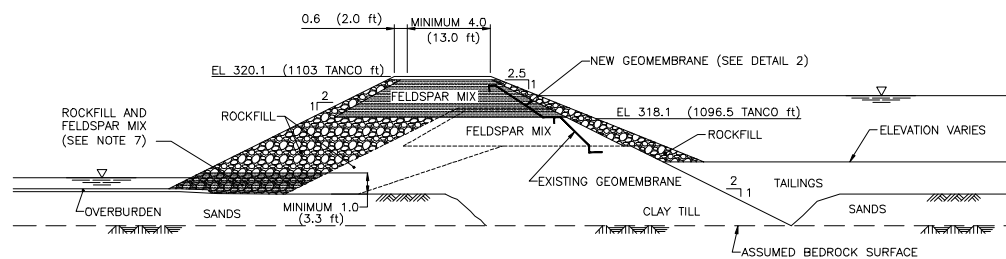
CONSTRUCTION DRAWINGS OF MAIN DAM AND PERIMETER DYKES



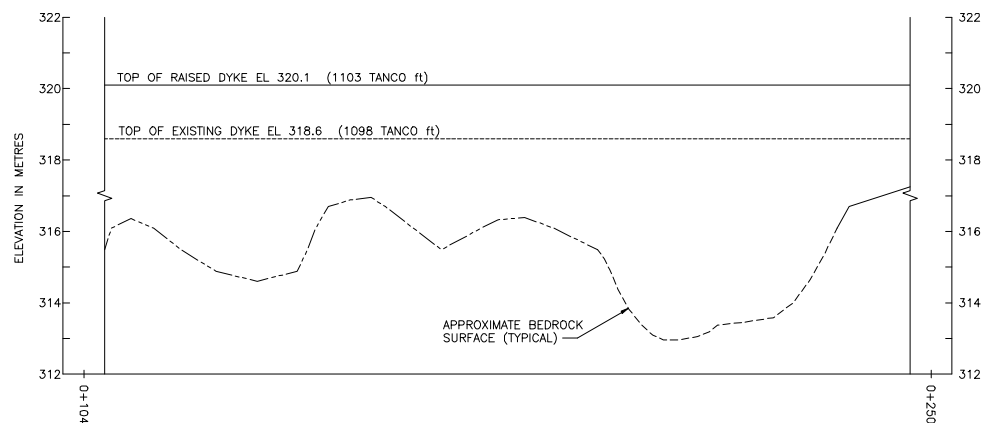
PD-1 TYPICAL CROSS SECTION



PD-1 PROFILE
N.T.S.



PD-2 TYPICAL CROSS SECTION



PD-2 PROFILE
N.T.S.



LEGEND:

	SHORELINE
	GROUND SURFACE ELEVATION CONTOUR
	GROUND SURFACE CONTOUR
	TRACK
	DAM/DYKE CREST
	OVERBURDEN/GROUND SURFACE
	BEDROCK SURFACE
	COORDINATE GRID MARKER
	NEW DYKE CREST
	TANCO 2004 MINERAL LEASE BOUNDARY

- NOTES:**
- CONTOUR INTERVAL IS 1 METRE.
 - SURFACE CONTOURS ARE BASED ON AERIAL PHOTOGRAPHY BY ATLAS GEOMATICS, PERFORMED ON JUNE 3, 2006 AT A SCALE OF 1:8000.
 - ALL CONTOURS AND ELEVATIONS GIVEN IN SECTION ARE IN UTM COORDINATES. TO CONVERT TO TANCO ELEVATIONS USE THE FOLLOWING EQUATION:
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 - COORDINATES, ELEVATIONS AND DIMENSIONS ARE IN METRES, UNLESS OTHERWISE NOTED.
 - ROAD TOPPING, FELDSPAR MIX AND ROCKFILL ARE AVAILABLE FROM THE MINE SITE. FOR MATERIAL REQUIREMENT SEE DRAWING 155108015-C-0006.
 - CROSS SECTIONS ON THIS PAGE ARE APPLICABLE FOR AREAS WHERE THE TOP OF BEDROCK IS BELOW EL. 318.6 M (1098 TANCO FT), AND FILL FOR THE RAISED SECTIONS WILL BE PLACED ON TOP OF THE EXISTING DYKES. FOR AREAS WHERE THE TOP OF BEDROCK IS ABOVE EL. 318.6 M (1098 TANCO FT) SEE DETAIL 1.
 - TO PROVIDE A WORKING BASE FOR PLACEMENT OF THE NEW FILL, ROCKFILL SHALL BE PLACED ALONG THE DOWNSTREAM TOE OF THE DYKES TO ABOVE THE EXISTING DOWNSTREAM WATER LEVEL. FELDSPAR MIX MAY BE ADDED TO FILL IN THE VOIDS IN THE ROCKFILL.

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NO.	DESCRIPTION	DATE	BY

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WINNIPEG
ACRES PROJECT NO. H-329446

TANCO
TANTALUM MINING CORPORATION
OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

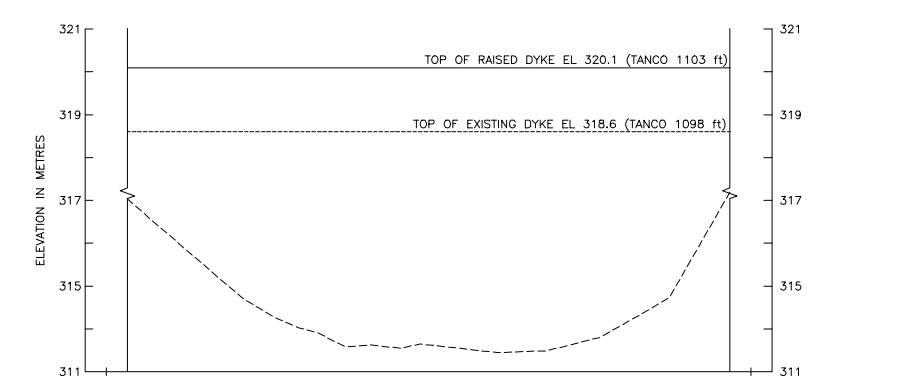
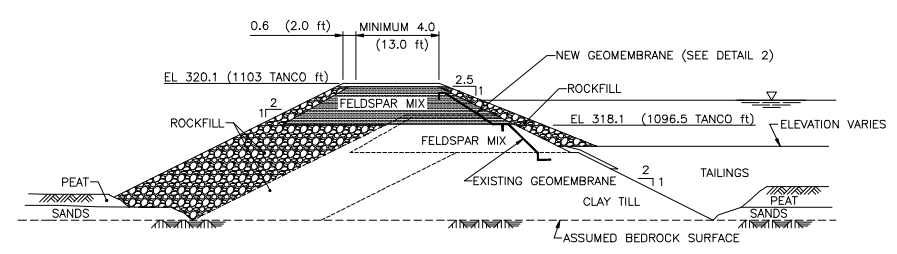
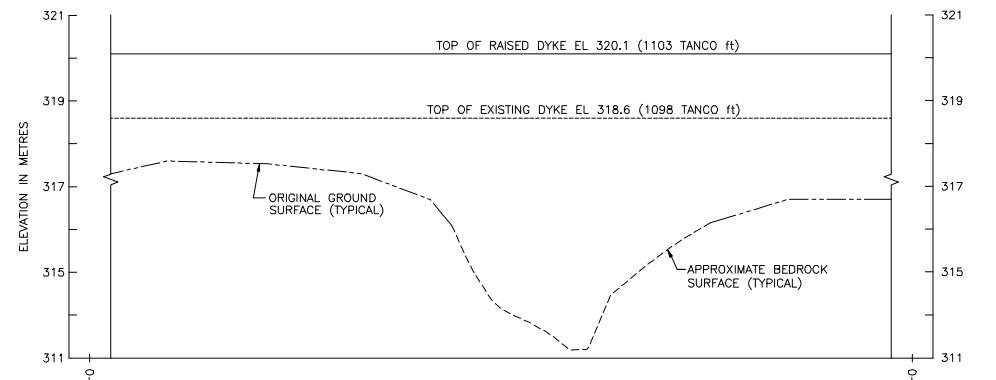
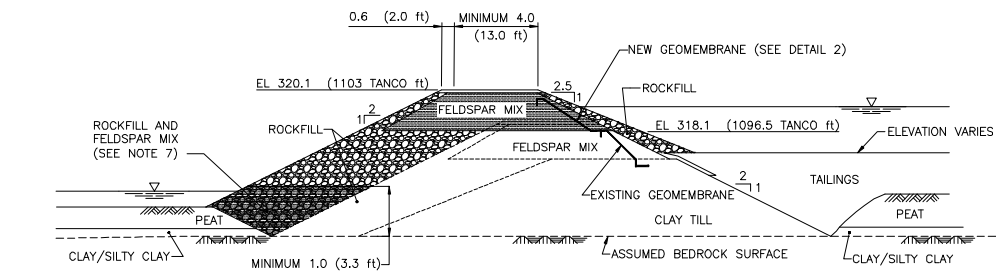
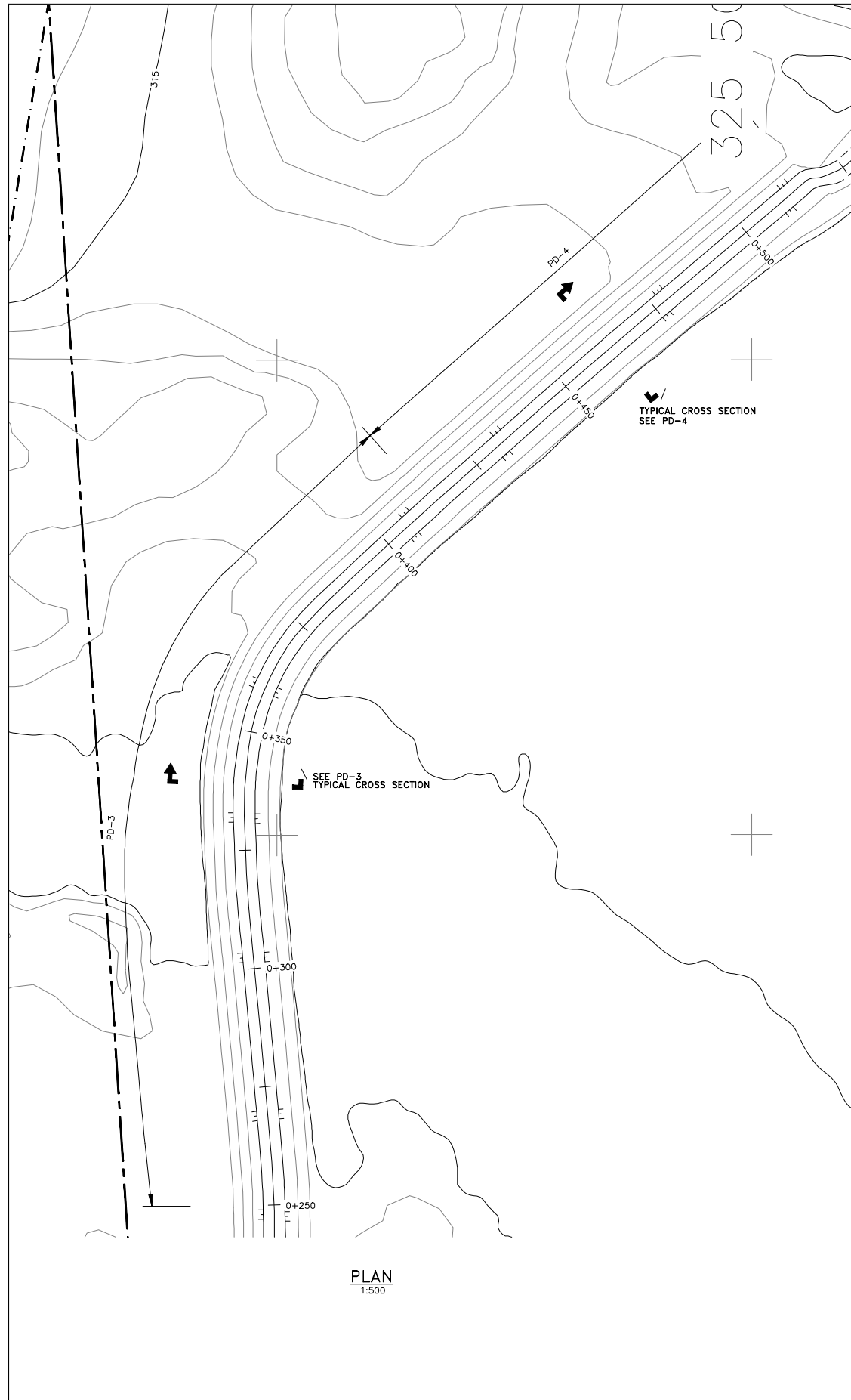
PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - PERIMETER DYKES

DWG. DESCRIPTION
TAILINGS MANAGEMENT AREA
PD-1 AND PD-2
PLAN AND TYPICAL SECTIONS

ENG. STAMP	DESIGNED BY: AMCL	DRAWN BY: CWS	CHECKED BY: RAH
THE ORIGINAL DRAWING SIGNED AND SEALED BY B. GARINGER ON 2008-05-16	APPROVED BY: BLAIR GARINGER	SCALE: AS SHOWN	DATE: 08-05-16
DRAWING NO: 155108015-C-0002	REV. 01		

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LEGEND:

	SHORELINE
	GROUND SURFACE ELEVATION CONTOUR
	GROUND SURFACE CONTOUR
	TRACK
	DAM/DYKE CREST
	OVERBURDEN/GROUND SURFACE
	BEDROCK SURFACE
	COORDINATE GRID MARKER
	NEW DYKE CREST
	TANCO 2004 MINERAL LEASE BOUNDARY
	TANCO 2006 MINERAL LEASE BOUNDARY

- NOTES:**
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 - 2) SURFACE CONTOURS ARE BASED ON AERIAL PHOTOGRAPHY BY ATLIS GEOMATICS, PERFORMED ON JUNE 3, 2006 AT A SCALE OF 1:8000.
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 - 6) CROSS SECTIONS ON THIS PAGE ARE APPLICABLE FOR AREAS WHERE THE TOP OF BEDROCK IS BELOW EL. 318.6 M (1098 TANCO ft), AND FILL FOR THE RAISED SECTIONS WILL BE PLACED ON TOP OF THE CLAY TILL OF THE EXISTING DYKES. FOR AREAS WHERE THE TOP OF BEDROCK IS ABOVE EL. 318.6 M (1098 TANCO ft) SEE DETAIL 1.
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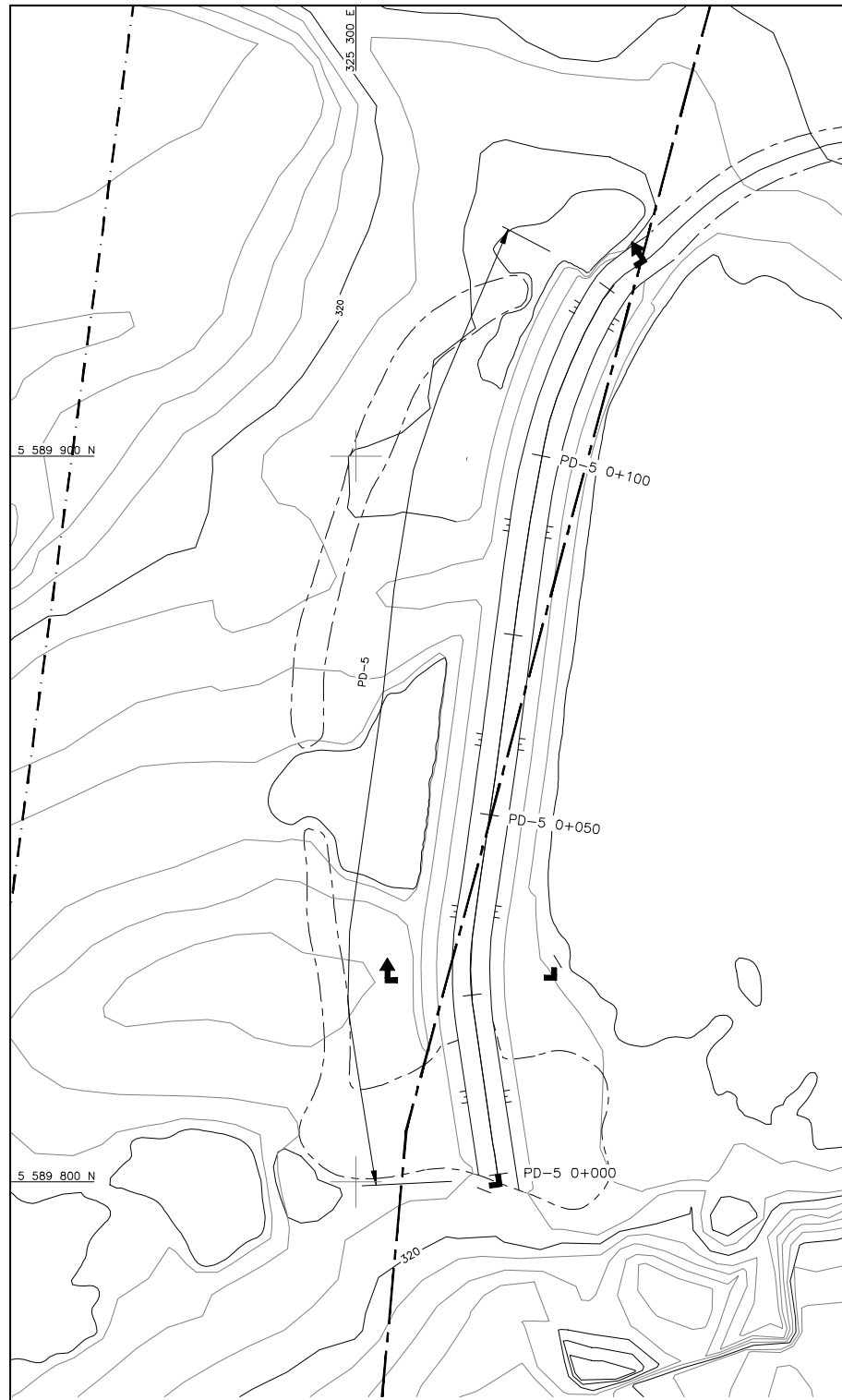
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WINNIPEG
ACRES PROJECT NO. H-329446

TANCO TANTALUM MINING CORPORATION OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

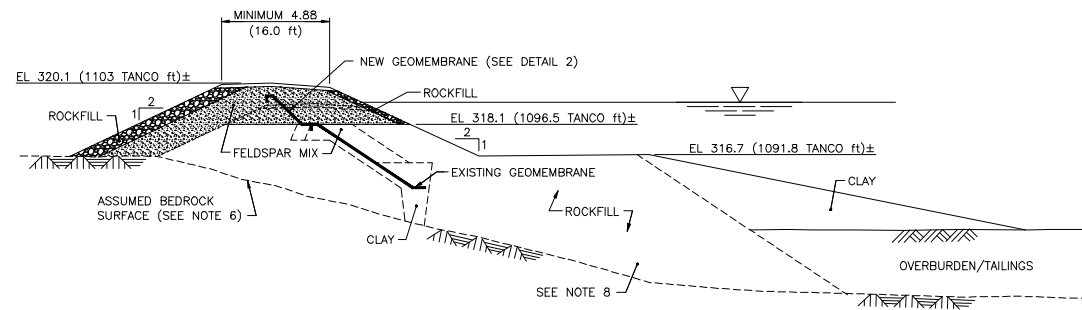
PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - PERIMETER DYKES

DWG. DESCRIPTION
TAILINGS MANAGEMENT AREA
PD-3 AND PD-4
PLAN AND TYPICAL SECTIONS

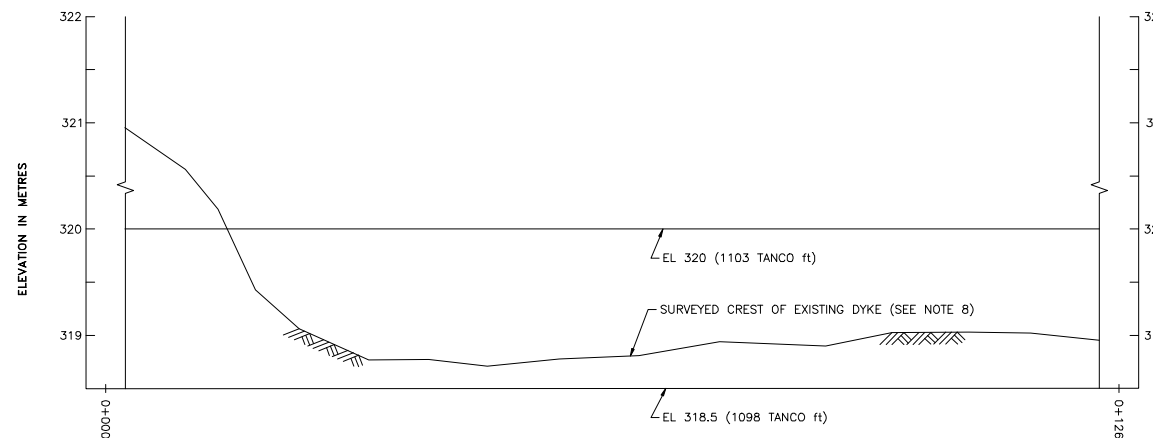
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THE ORIGINAL DRAWING SIGNED AND SEALED BY B. GARINGER ON 2008-05-16	APPROVED BY: BLAIR GARINGER		
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PLAN
1:400



PD-5 TYPICAL CROSS SECTION



PD-5 PROFILE
N.T.S.

LEGEND:

- SHORELINE
- 315 GROUND SURFACE ELEVATION CONTOUR
- GROUND SURFACE CONTOUR
- TRACK
- DAM/DYKE CREST
- OVERBURDEN/GROUND SURFACE
- BEDROCK SURFACE
- COORDINATE GRID MARKER
- NEW DYKE CREST
- TANCO 2004 MINERAL LEASE BOUNDARY
- TANCO 2006 MINERAL LEASE BOUNDARY

NOTES:

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- 6) THE BEDROCK SURFACE VARIES ALONG THE LENGTH AND WIDTH OF THE DYKE. SURFACE DEPICTED ON DRAWING WAS INFERRED FROM THE FIELD OBSERVATIONS AND INFORMATION OBTAINED FROM THE CONTRACTOR, AND REPRESENTS THE LOCATION OF THE DEEPEST KNOWN BEDROCK SURFACE ALONG THE LENGTH OF THE DYKE.
- 7) THE DETAILS OF THE CROSS SECTION FOR THE EXISTING DYKE ARE BASED ON INFORMATION OBTAINED FROM THE CONTRACTOR, AS SUCH ALL INTERIOR SLOPES AND LAYER THICKNESSES ARE APPROXIMATE. AS THE BEDROCK SURFACE VARIES ALONG THE LENGTH OF THE STRUCTURE, SO TOO WILL THE CROSS SECTION.
- 8) THE SURFACE ELEVATIONS AND SLOPES OF PD-5 BELOW EL. 318.6 ARE BASED ON A FIELD SURVEY CONDUCTED BY ACRES MANITOBA LIMITED, ON NOVEMBER 24, 2005.

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TANCO TANTALUM MINING CORPORATION
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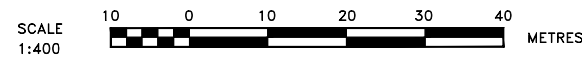
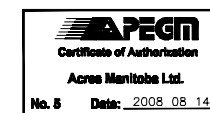
PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - PERIMETER DYKES

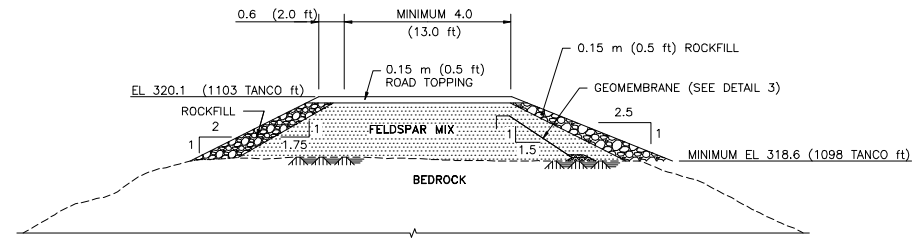
DWG. DESCRIPTION
TAILINGS MANAGEMENT AREA
PD-5
PLAN AND TYPICAL SECTION

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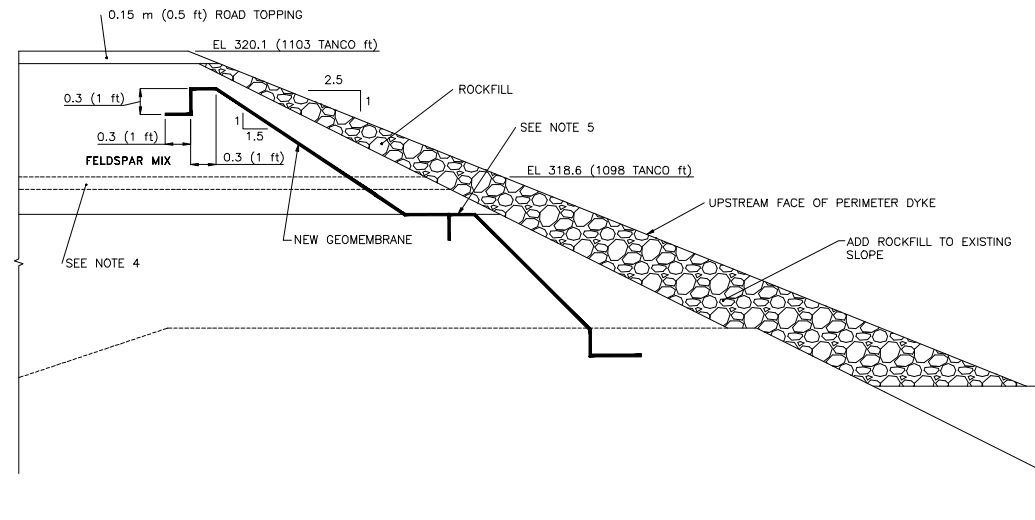
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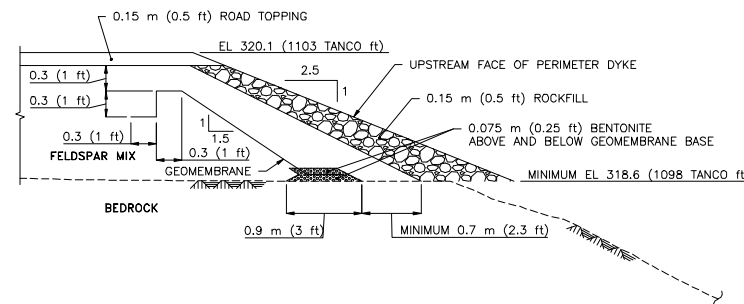




DETAIL 1
PD-1 TO PD-5 TYPICAL CROSS SECTION
BEDROCK SURFACE AT OR ABOVE EL 318.6 m (1098 TANCO FT)



DETAIL 2
GEOMEMBRANE TIE-IN WITH EXISTING LINER



DETAIL 3
GEOMEMBRANE PLACED ON BEDROCK BASE

LEGEND:

BEDROCK SURFACE

NOTES:

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- 3) GEOMEMBRANE PLACED AGAINST THE ROCK WALL AT THE SOUTH END OF PD-1 AS PER DIRECTION OF THE ENGINEER. ALLOW FOR A MINIMUM OF 1.5 m (5 ft) OVERLAP AGAINST THE ROCK.
- 4) REMOVE COVER SOIL AS PER THE SPECIFICATIONS GIVEN IN SECTION 6.2, DRAWING 155108015-C-0006.
- 5) SEAM REQUIRES HEAT WELD AS PER SPECIFICATIONS GIVEN IN SECTION 6.4, DRAWING 155108015-C-0006.

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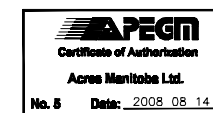
ACRES MANITOBA LIMITED
WINNIPEG
ACRES PROJECT NO. H-329446

TANTALUM MINING CORPORATION OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - PERIMETER DYKES

DWG. DESCRIPTION
TAILINGS MANAGEMENT AREA
DETAILS

ENG. STAMP	DESIGNED BY: AMCL	DRAWN BY: CWS	CHECKED BY: RAH
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SITE WORK

1.0 SCOPE OF WORK

RAISE THE CREST OF THE EXISTING PERIMETER DYKES PD-1 THROUGH PD-5, INCLUSIVE, TO ELEVATION 320.1 M AS ILLUSTRATED IN THE PLAN, SECTIONS AND DETAILS. THIS WORK SHALL INCLUDE THE REMOVAL OF REQUIRED COVER SOIL FROM THE CREST OF THE DYKES, CLEANING AND REPAIRING THE EXPOSED PORTION OF THE EXISTING GEOMEMBRANE, INSTALLATION OF THE NEW GEOMEMBRANE, AND PLACEMENT AND COMPACTION OF REQUIRED FILL MATERIALS, AS SPECIFIED HEREIN AND AS DIRECTED BY THE ENGINEER.

2.0 SITE CONDITIONS

THE CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXISTING CONDITIONS AND REQUIREMENTS FOR PROTECTION OF ADJACENT WORK, AND ACCEPT SITE AND EXISTING WORK, AS IT EXISTS AT TIME OF COMMENCEMENT OF WORK.

3.0 SURVEY CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE STRUCTURES ARE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS, INCLUDING PROVIDING THE NECESSARY SURVEY CONTROL DURING PLACEMENT OF FILL AND OTHER CONSTRUCTION MATERIALS.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY ALL SURVEY STAKES, RIBBON AND SURVEY EQUIPMENT REQUIRED TO COMPLETE THE PROJECT WORK.

4.0 SITE PREPARATION

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF ALL RUBBLE, TREES, LOGS, SHRUBS, FALLEN TIMBER, STUMPS, ROOTS AND ANY SURFACE LITTER, WHEREVER THEY OCCUR WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND ANY OTHER AREAS AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNEXPECTED SUB-SURFACE CONDITIONS, AND DISCONTINUE WORK IN THE AREA UNTIL THE ENGINEER PROVIDES DIRECTION.

4.1 CLEARING AND GRUBBING

CLEARING AND GRUBBING MAY BE REQUIRED ALONG THE DOWNSTREAM TOE OF THE DYKES WHERE FILL MATERIAL IS TO BE PLACED, AS DIRECTED BY THE ENGINEER. ALL TREES, BRUSH, FALLEN TIMBER, LOGS, STUMPS, ROOTS, GRASS AND BURNABLE LITTER SHALL BE COLLECTED AND HAULED TO AN APPROVED DUMPSITE AT THE COST OF THE CONTRACTOR, PRIOR TO PLACEMENT OF FILL.

TREES, IF ANY, SHALL BE FELLED TOWARDS THE CENTRE OF THE AREA TO BE CLEARED. ANY BRUSH OR TREES FALLING OUTSIDE OF THE AREA TO BE CLEARED SHALL BE MOVED BACK TO WITHIN THE RIGHT-OF-WAY AND DISPOSED OF. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS AGAINST DAMAGE TO OTHER TREES, DAMAGE TO STRUCTURES, OR PROPERTY IN THE FELLING OF TREES.

4.2 REMOVAL OF TOPSOIL

REMOVE ALL EXISTING TOPSOIL FROM THE AREAS WHERE FILL IS REQUIRED, NAMELY ALONG THE DOWNSTREAM TOE OF THE DYKES, PRIOR TO FILL PLACEMENT. ONCE THE AREA IS PREPARED THE CONTRACTOR SHALL MAKE THE AREA AVAILABLE TO THE ENGINEER FOR INSPECTION, PRIOR TO PLACEMENT OF ANY FILL.

5.0 FILL

5.1 MATERIAL PROPERTY REQUIREMENTS

GRANULAR FILL: THE FELDSPAR MIX FILL REFERENCED TO IN THE DRAWINGS CONSIST OF A MIXTURE OF BY-PRODUCT MATERIAL FROM THE MINE OPERATIONS (COARSE SAND TO GRAVEL SIZE PARTICLES) AND TAILINGS SAND. THE MIXTURE SHALL BE PREPARED TO MEET GRADATION LIMITS SHOWN BELOW:

GRADATION LIMITS FOR FELDSPAR MIX:

PARTICLE SIZE	% PASSING
16 mm	80-100
4.75 mm	40-70
2.0 mm	25-55
425 µm	15-30
75 µm	5-15

THE FELDSPAR MIX FILL SHALL BE FREE OF SHARP ANGULAR STONES, LARGE STONES, SHALE, CLAY LUMPS CEMENTATION, ORGANIC MATERIAL, FROZEN AND OTHER DELETERIOUS MATERIALS. THE LARGEST OR MAXIMUM PARTICLE SIZE SHALL NOT EXCEED 25 MM. THE FELDSPAR MIX FILL SHALL BE UTILIZED AS FILL WITHIN THE CORE OF THE DYKES AND AS COVER SOIL AROUND THE GEOMEMBRANE LINER TO PROVIDE PROTECTION AGAINST TEAR AND PUNCTURE OF THE LINER AFTER PLACEMENT.

ROCKFILL: SHALL BE COMPRISED OF BROKEN OR BLASTED SOUND, DURABLE ROCK, SOURCED ON-SITE. THE MAXIMUM PARTICLE SIZE SHALL NOT BE GREATER THAN 600 MM. INCLUSION OF GRADED PARTICLES WITH TRACE TO SOME FINES IS ACCEPTABLE, IF PREFERRED BY THE CONTRACTOR TO IMPROVE HANDLING AND FILTRATION PROPERTIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION OF THE BLASTING PROGRAM, INCLUDING ATTAINING ANY REQUIRED PERMITTING.

ROAD TOPPING: SHALL BE MEDIUM TO COARSE GRAINED SAND AND GRAVEL WITH TRACE TO SOME FINES. THE SPODUMENE TAILINGS, TYPICALLY UTILIZED FOR ON-SITE ROAD CONSTRUCTION, IS AN ACCEPTABLE SOURCE.

5.2 FILL PLACEMENT

ALL GRANULAR FILL SHOULD BE PLACED IN 6" TO 8" LIFTS, AND COMPACTED WITH A PUSH MOUNTED VIBRATORY ROLLER OR PLATE COMPACTOR, OR EQUIVALENT APPROVED BY THE ENGINEER.

THE DENSITY OF PLACED GRANULAR FILL SHALL NOT BE LESS THAN 95 PERCENT OF THE MAXIMUM STANDARD PROCTOR DENSITY, AS DETERMINED IN ACCORDANCE WITH ASTM D698.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE WATER FOR MOISTURE CONDITIONING OF THE FILL AS REQUIRED TO OBTAIN THE COMPACTION DENSITIES SPECIFIED HEREIN. THE CONTRACTOR SHALL STRIVE TO MAINTAIN THE MOISTURE CONTENT OF THE FILL TO WITHIN ±2% OF THE OPTIMUM MOISTURE CONTENT (AS DETERMINED BY ASTM D698) DURING PLACEMENT AND COMPACTION.

THE ENGINEER WILL BE RESPONSIBLE FOR COORDINATION OF AN INDEPENDENT LABORATORY TO PERFORM RANDOM TESTING OF THE PLACED FILL, TO VERIFY COMPLIANCE WITH THE SPECIFICATIONS PROVIDED HEREIN. WHILE THESE TESTS WILL BE THE RESPONSIBILITY OF THE ENGINEER, THE CONTRACTOR SHALL COOPERATE IN EVERY WAY TO ENSURE THAT THE TESTS CAN BE PERFORMED AT ALL LOCATIONS AND TIMES, AT THE DIRECTION OF THE ENGINEER.

6.0 GEOMEMBRANE LINER

THE GEOMEMBRANE MATERIAL SHALL CONSIST OF 60 MIL PVC, AS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLY AND INSTALLATION OF THE GEOMEMBRANE LINER, AND SUBMITTAL OF THE PRODUCT SHEET TO THE ENGINEER FOR ACCEPTANCE PRIOR TO USE. INSTALLATION SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR REPAIR, WELDING OF SEAMS, ANCHORING, HANDLING AND BACKFILLING, AS SPECIFIED HEREIN, IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.

6.1 PROTECTION

VEHICLES ARE NOT ALLOWED TO TRAVEL OVER THE UNPROTECTED LINERS AT ANY TIME.

CARE MUST BE TAKEN TO MAINTAIN THE APPROPRIATE THICKNESS OF FILL BENEATH THE CONSTRUCTION VEHICLES. THE FOLLOWING BACKFILL THICKNESS CAN ACCOMMODATE THE REFERENCED PLACEMENT EQUIPMENT:

FILL THICKNESS	PLACEMENT EQUIPMENT
150 MM OR LESS	HAND PLACEMENT
200 - 300 MM	D3-D4 LOP CAT
300 MM	BOBCAT, D4-D6 STYLE CAT
600 MM	D7-D9 STYLE CAT

6.2 REMOVAL OF COVER SOIL

TO FACILITATE WELDING OF THE NEW GEOMEMBRANE LINER TO THE EXISTING LINER, THE COVER SOIL THAT WAS PREVIOUSLY PLACED ON THE CREST OF THE DYKES WILL HAVE TO BE REMOVED. CARE SHALL BE TAKEN DURING REMOVAL TO PREVENT TEARING AND PUNCTURE OF THE LINER, BY WHATEVER MEANS ARE NECESSARY AND ARE APPROVED BY THE ENGINEER. NOTWITHSTANDING THE APPROVAL OF THE ENGINEER, THE CONDITION OF THE LINER SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND THE CONTRACTOR WILL BE REQUIRED TO REPAIR ANY DAMAGE AT NO ADDITIONAL COST TO THE OWNER.

AFTER REMOVAL OF THE COVER SOIL, AND PRIOR TO WELDING OF THE NEW LINER TO THE EXISTING, THE CONTRACTOR SHALL MAKE AVAILABLE TO THE ENGINEER FOR INSPECTION TO VERIFY THE LINER IS CLEAN, INTACT, AND THE SURFACE IS COMPLETELY FREE OF WATER, DEBRIS AND DELETERIOUS MATERIAL.

6.3 INSTALLATION OF LINER

INSTALLATION OF THE NEW LINER SHALL BE LIMITED TO ABOVE -5°C, OR AS PER MANUFACTURERS RECOMMENDATIONS AND ACCEPTED BY THE ENGINEER.

PRIOR TO INSTALLATION OF THE LINERS, THE SUBGRADE SURFACE SHALL BE FREE FROM DEBRIS, ANGULAR SOIL PARTICLES, SNOW, ICE, AND WATER, AND THE GROUND SURFACE SHALL NOT BE IN A FROZEN CONDITION.

APPROVAL SHALL BE OBTAINED FROM THE ENGINEER FOR THE SUBGRADE, PRIOR TO THE PLACEMENT OF THE LINER.

THE NEW LINER SHALL BE PLACED IN A MANNER AND AT THE LOCATIONS SHOWN ON THE DRAWINGS, AND AS ACCEPTED BY THE ENGINEER AND SPECIFIED HEREIN.

THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE CONSTRUCTION METHODOLOGY THAT WILL BE UTILIZED FOR THE PLACEMENT OF THE LINER AND SUBGRADE, PRIOR TO IMPLEMENTATION.

CONSTRUCTION EQUIPMENT (EG. LOADER, BOBCAT, FORKLIFT) MAY BE REQUIRED FOR INSTALLATION OF THE LINER, DEPENDING ON THE LINER PANEL WEIGHT.

CARE MUST BE TAKEN TO PREVENT TEARING OR PUNCTURING OF THE LINERS DURING AND AFTER PLACEMENT.

PRIOR TO PLACEMENT OF FILL OVER THE LINER, THE CONTRACTOR SHALL MAKE AVAILABLE TO THE ENGINEER FOR INSPECTION OF THE LINER FOR PUNCTURE MARKS AND TEARS. REPAIRS SHALL BE UNDERTAKEN BY THE CONTRACTOR IMMEDIATELY USING THE APPROPRIATE REPAIR KIT. THE ENGINEER SHALL INSPECT ALL REPAIRS PRIOR TO THE PLACEMENT OF FILL MATERIAL ONTO THE LINER.

ONCE THE LINER IS IN PLACE, SLACK SHALL BE EVENLY DISTRIBUTED OVER THE ENTIRE PLACEMENT AREA, AS PER THE ACCEPTANCE OF THE ENGINEER. THE LINER SHALL BE ANCHORED IN A TRENCH AS SHOWN ON THE DRAWINGS, AND AS APPROVED BY THE ENGINEER.

SEAMS BETWEEN PANELS OF THE NEW LINER SHALL BE ORIENTED DOWN SLOPE, NOT ACROSS, AND WILL REQUIRE A MINIMUM OVERLAP OF 0.15 M (6 INCHES). NO HORIZONTAL SEAMS SHALL BE ALLOWED ALONG THE SLOPE OF THE DYKES. IF PVC LINER MATERIAL IS UTILIZED CHEMICAL WELDING CAN BE UTILIZED TO WELD THESE PANELS TOGETHER; HOWEVER, USE OF AN HDPE LINER WILL REQUIRE HEAT WELDING.

THE OVERLAP BETWEEN THE NEW LINER AND THE EXISTING LINER SHALL BE A MINIMUM OF 0.3 M (12 INCHES), AS SHOWN ON THE DRAWINGS AND DIRECTED BY THE ENGINEER, SUCH THAT THE SEAM DOES OCCUR ON A SLOPE. HEAT WELDING WILL BE REQUIRED ALONG THIS SEAM.

6.4 WELDING

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ALL APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) INFORMATION PRIOR TO CONSTRUCTION.

CHEMICAL WELDS

CHEMICAL WELDS UTILIZE A VOLATILE SOLVENT TO CHEMICALLY FUSE THE LINER MATERIALS TOGETHER, AND IS AN ACCEPTABLE MEANS OF WELDING THE PANELS OF THE NEW PVC LINER TOGETHER. SOLVENT BONDING AGENTS DISSOLVES THE TWO LINER PIECES TOGETHER AND THEN EVAPORATES OFF, SUCH THAT AFTER APPROXIMATELY 24 HOURS A HOMOGENEOUS WELD WITH NO FOREIGN MATERIAL BETWEEN THE TWO LINER SURFACES IS CREATED. THE BOND FORMED IS VERY SIMILAR TO THE BOND ATTAINED THROUGH HEAT WELDING, AND WILL LAST AS LONG AS THE LINER MATERIAL. SOLVENT BONDING IS NOT RECOMMENDED AT TEMPERATURES BELOW +10°C.

THE SOLVENT UTILIZED SHALL BE TERAHYDRONFURAN (THF), OR EQUIVALENT AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLY OF THE SOLVENT BONDING AGENT, AND SUBMITTAL OF THE PRODUCT SHEET TO THE ENGINEER FOR ACCEPTANCE, PRIOR TO USE.

HEAT WELDS

BONDING OF THE NEW LINER TO THE EXISTING SHALL BE ACCOMPLISHED USING A HEAT WELD. HEAT WELDING CAN BE CONDUCTED AT ANY TEMPERATURE, AND SHOULD BE PERFORMED BY A TRAINED PROFESSIONAL EXPERIENCED IN HEAT WELDING.

PRIOR TO HEAT WELDING, AND AFTER THE EXISTING LINER HAS BEEN CLEARED OF DEBRIS, THE TOP LAYER OF THE EXISTING LINER SHALL BE GRINDING OFF USING SPECIALIZED EQUIPMENT, AS RECOMMENDED BY THE LINER MANUFACTURER AND ACCEPTED BY THE ENGINEER.

6.5 COVER SOIL PLACEMENT

THE CONTRACTOR SHALL ENSURE THE SURFACE OF THE LINER IS FREE FROM DEBRIS, SNOW, AND ICE PRIOR TO PLACEMENT OF FILL (COVER SOIL) OVER THE LINER. THE FOLLOWING MEASURES SHALL BE UNDERTAKEN PRIOR TO PLACEMENT OF COVER SOIL:

- REMOVE STANDING WATER.
- INSPECT LINER FOR PUNCTURES AND/OR TEARS AND REPORT FINDINGS TO THE ENGINEER. REPAIR LINER PRIOR TO PLACING FILL.
- OBTAIN APPROVAL FROM ENGINEER PRIOR TO PLACEMENT OF FILL.

FILL MATERIALS THAT CONTAIN LUMPS, CLOTS OR CEMENTED INCLUSIONS THAT REQUIRE ADDITIONAL EFFORT TO BREAK DOWN ARE NOT SUITABLE.

ALL SHARP STONES, LARGE STONES, ROCKS, ROOTS AND DELETERIOUS MATERIALS SHALL BE REMOVED FROM THE FILL EITHER AT THE SOURCE OR PRIOR TO WORKING THE MATERIAL. THE LARGEST PARTICLE SIZE, OR MAXIMUM PARTICLE SIZE, SHALL NOT EXCEED 25 MM.

PLACEMENT OF FROZEN FILL IS NOT PERMITTED. IF NECESSARY, HEAT THE BACKFILL STOCKPILE OR MAKE PROVISIONS FOR HEATING AND HOARDING AT THE BACKFILL LOCATION.

THE FILL MUST BE "FREE-FLOWING" AND PLACEMENT METHODS THAT PUSH FILL ONTO THE LINER SHALL BE ABLE TO "ROLL" THE FILL AHEAD. CARE SHALL BE TAKEN TO ENSURE THAT THE FILL BEING PLACED DOES NOT "SLIP" OR SHEAR ALONG THE TOP THE LINER. IF SLIPPAGE OR SHEARING OCCURS CHECK FOR DAMAGE UNDER THE FILL AND REPAIR IMMEDIATELY.

SCHEDULE OF QUANTITIES

STRUCTURE	MATERIAL REQUIREMENTS			
	ROAD TOPPING (m³)	FELDSPAR MIX (m³)	ROCKFILL (m³)	GEOMEMBRANE (m²)
PD-1	100	1650	4100	700
PD-2	120	2250	4300	1100
PD-3	135	2500	6300	1250
PD-4	85	1600	3800	800
PD-5	110	2300	800	750

NOTE:

1) QUANTITIES PROVIDED ABOVE ARE ESTIMATIONS, BASED ON THE CROSS SECTIONS SHOWN IN DRAWINGS 155108015-C-0002 TO 155108015-C-0004, WITH A 10% CONTINGENCY INCORPORATED.



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TOLERANCES :
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± .040" MACHINED

01	ISSUED FOR CONSTRUCTION	08-08-14	BDG
00	ISSUED FOR TENDER	08-05-16	BDG
NO.	DESCRIPTION	DATE	BY

REVISIONS/ISSUE



ACRES MANITOBA LIMITED

WINNIPEG

ACRES PROJECT NO. H-329446



TANTALUM MINING CORPORATION OF CANADA LIMITED

BOX 2000, LAC DU BONNET, MANITOBA

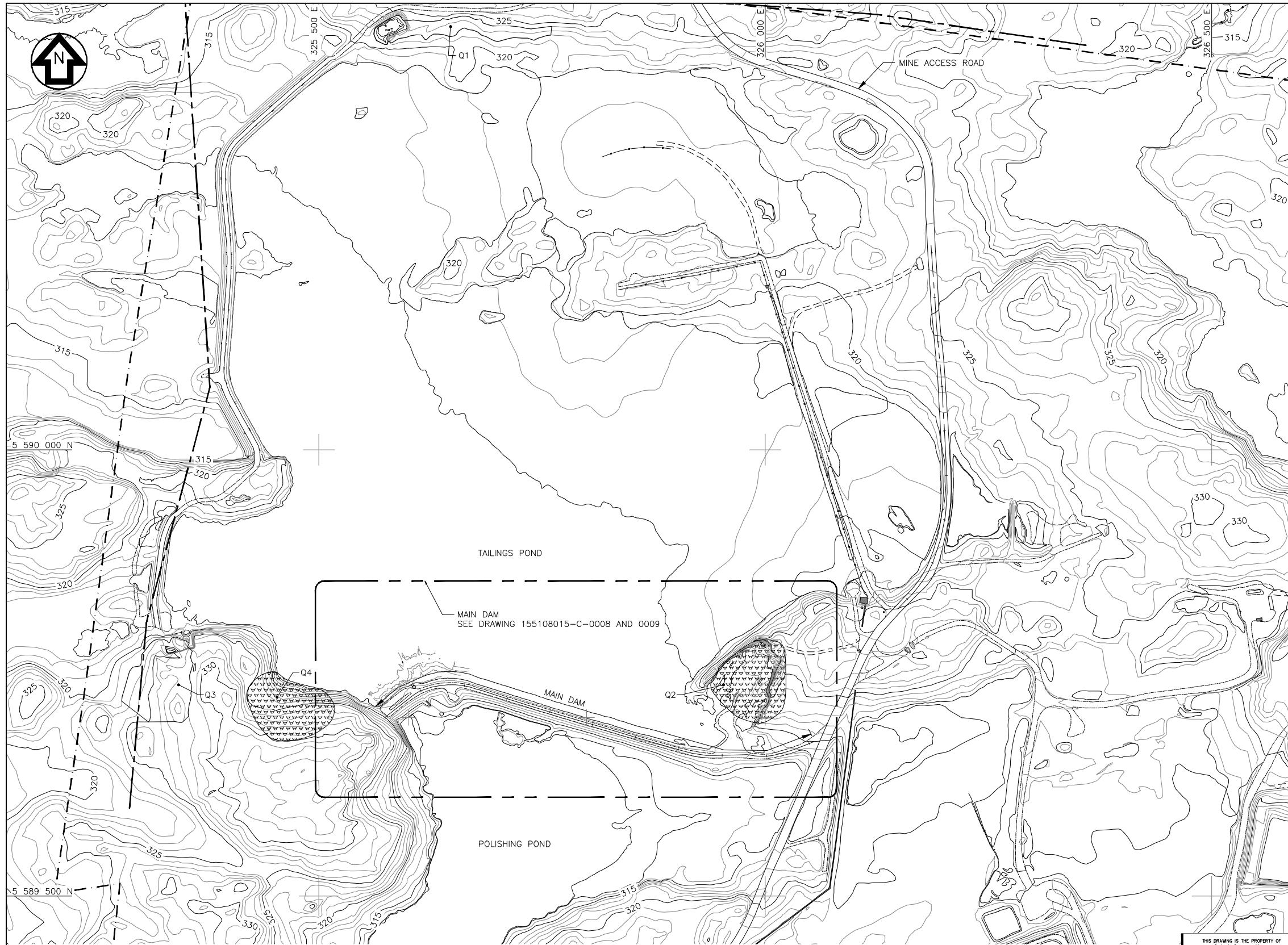
PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - PERIMETER DYKES

DWG. DESCRIPTION

TAILINGS MANAGEMENT AREA
SPECIFICATIONS

ENG. STAMP	DESIGNED BY: AMCL	DRAWN BY: CWS	CHECKED BY: RAH
APPROVED BY: BLAIR GARINGER			
SCALE: AS SHOWN	DATE: 08-05-16		REV.
DRAWING NO: 155108015-C-0006			01

THE ORIGINAL
DRAWING SIGNED
AND SEALED BY
B. GARINGER
ON 2008-05-16



LEGEND:

	SHORELINE
	GROUND SURFACE ELEVATION CONTOUR
	GROUND SURFACE CONTOUR
	TRACK
	DAM/DYKE CREST
	BUILDING
	PIPELINE
	FENCE
	COORDINATE GRID MARKER
	NEW DYKE CREST
	POTENTIAL QUARRY EXPANSION
	TANCO 2004 MINERAL LEASE BOUNDARY
	TANCO 2006 MINERAL LEASE BOUNDARY

- NOTES:**
- 1) CONTOUR INTERVAL IS 1 METRE.
 - 2) SURFACE CONTOURS ARE BASED ON AERIAL PHOTOGRAPHY BY ATLAS GEOMATICS, PERFORMED ON JUNE 3, 2006 AT A SCALE OF 1:8000.
 - 3) ALL CONTOURS AND ELEVATIONS GIVEN IN SECTION ARE IN UTM COORDINATES. TO CONVERT TO TANCO ELEVATIONS USE THE FOLLOWING EQUATION:
TANCO FT = (UTM/0.3048)+52.84
 - 4) COORDINATES, ELEVATIONS AND DIMENSIONS ARE IN METRES, UNLESS OTHERWISE NOTED.

00	ISSUED FOR CONSTRUCTION	08-08-14	BDG
A	ISSUED FOR TENDER	08-07-25	BDG
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WINNIPEG
ACRES PROJECT NO. H-329446

TANCO TANTALUM MINING CORPORATION OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

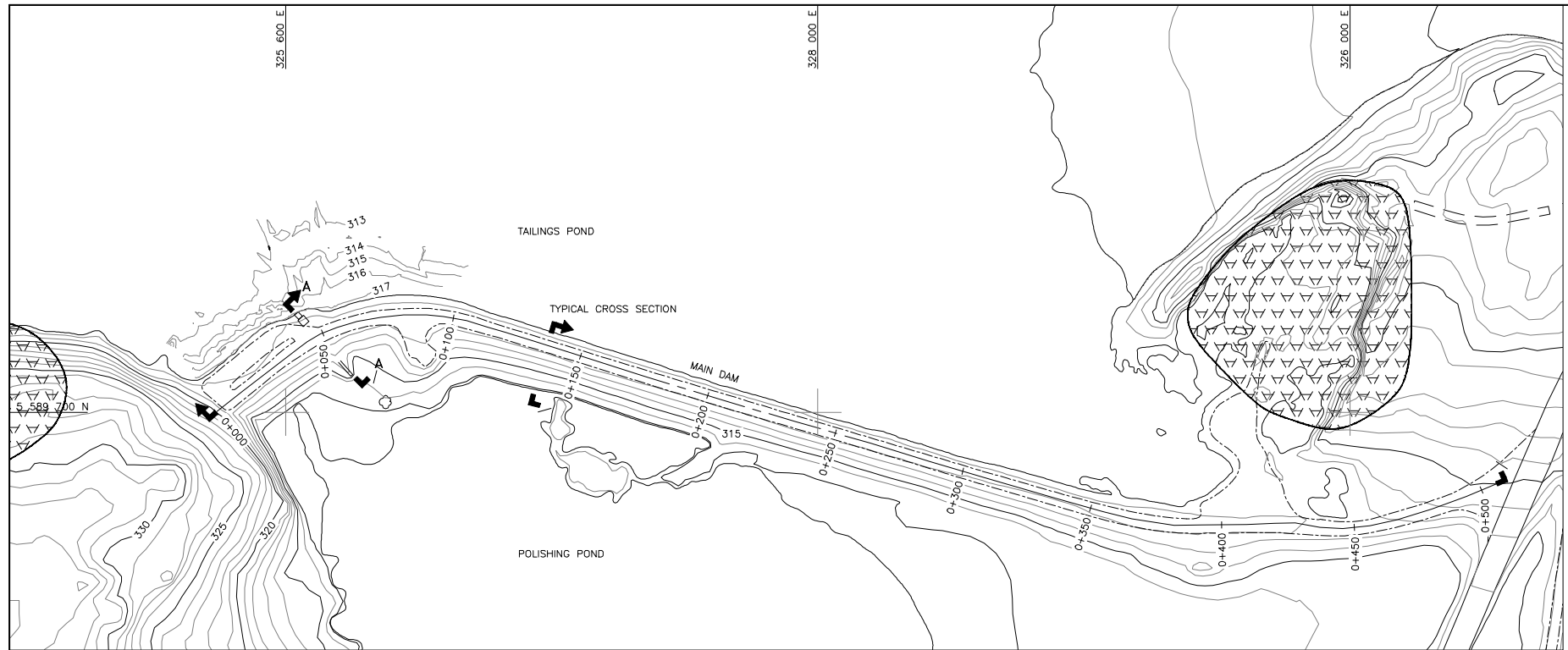
PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - MAIN DAM AND MINE ACCESS ROAD
DWG. DESCRIPTION
TAILING MANAGEMENT AREA
LOCATION PLAN

ENG. STAMP	DESIGNED BY: BDG	DRAWN BY: CWS/LMA	CHECKED BY: RAH
THE ORIGINAL DRAWING SIGNED AND SEALED BY B. GARINGER ON 2008-08-14	APPROVED BY: BLAIR GARINGER		
SCALE: 1:1500	DATE: 08-07-25		
DRAWING NO: 155108015-C-0007	REV. 00		

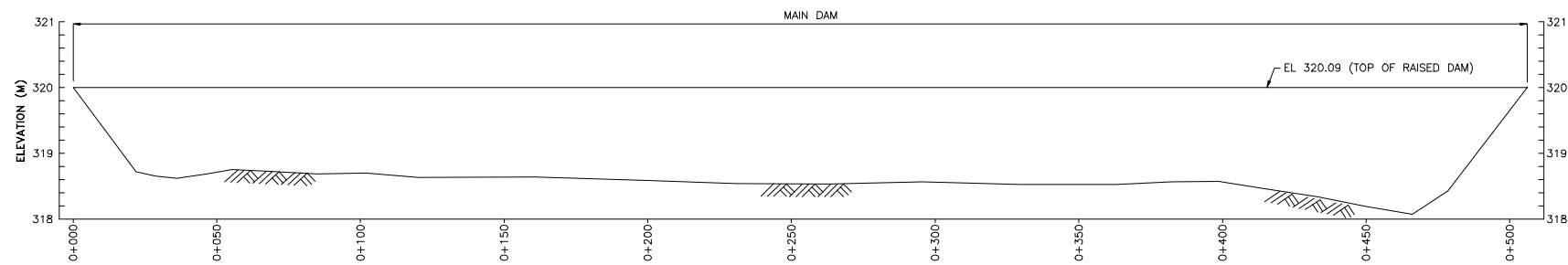


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PLAN



PROFILE

LEGEND:

- SHORELINE
- 315 GROUND SURFACE ELEVATION CONTOUR
- GROUND SURFACE CONTOUR
- TRACK
- DAM/DYKE CREST
- OVERBURDEN/GROUND SURFACE
- BEDROCK SURFACE
- COORDINATE GRID MARKER
- NEW DYKE CREST
- TANCO 2004 MINERAL LEASE BOUNDARY

NOTES:

- 1) CONTOUR INTERVAL IS 1 METRE.
- 2) SURFACE CONTOURS ARE BASED ON AERIAL PHOTOGRAPHY BY ATLAS GEOMATICS, PERFORMED ON JUNE 3, 2006 AT A SCALE OF 1:8000.
- 3) ALL CONTOURS AND ELEVATIONS GIVEN IN SECTION ARE IN UTM COORDINATES. TO CONVERT TO TANCO ELEVATIONS USE THE FOLLOWING EQUATION:
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- 4) COORDINATES, ELEVATIONS AND DIMENSIONS ARE IN METRES, UNLESS OTHERWISE NOTED.

00	ISSUED FOR CONSTRUCTION	08-08-14	BDG
A	ISSUED FOR TENDER	08-07-25	BDG
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REVISIONS/ISSUE

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WINNIPEG
ACRES PROJECT NO. H-329446

TANTALUM MINING CORPORATION OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - MAIN DAM AND MINE ACCESS ROAD

DWG. DESCRIPTION

TAILINGS MANAGEMENT AREA
MAIN DAM
PLAN AND PROFILE

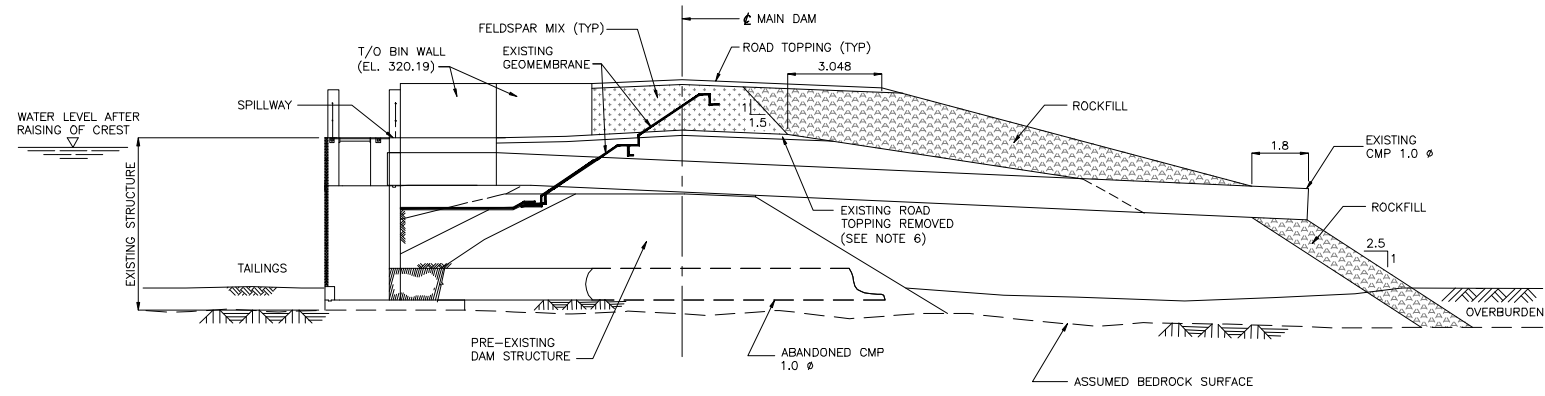
ENG. STAMP

DESIGNED BY: BDG	DRAWN BY: CWS	CHECKED BY: RAH
APPROVED BY: BLAIR GARINGER		
SCALE: 1:1000	DATE: 08-07-25	
DRAWING NO: 155108015-C-0008	REV. 00	

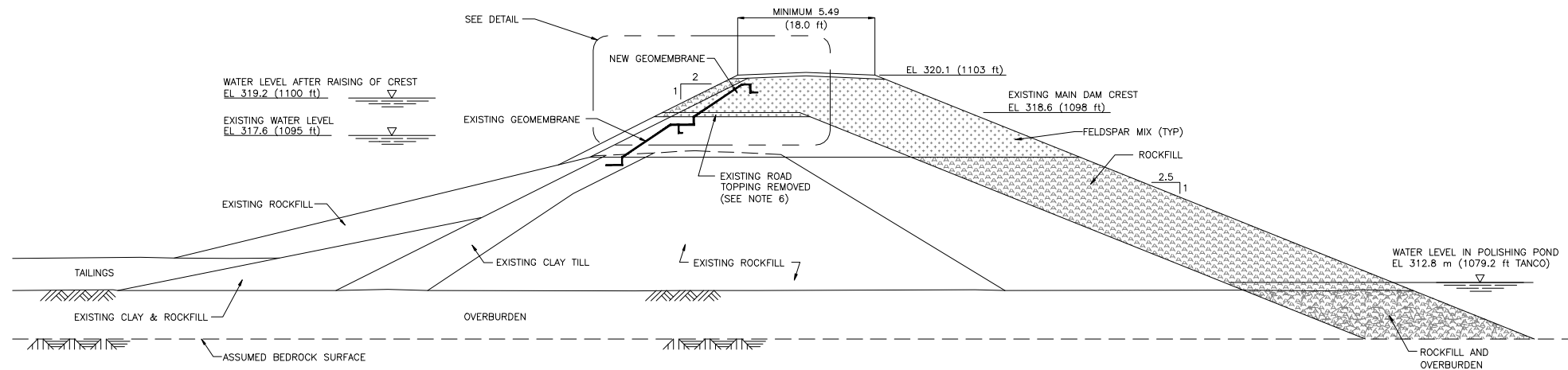
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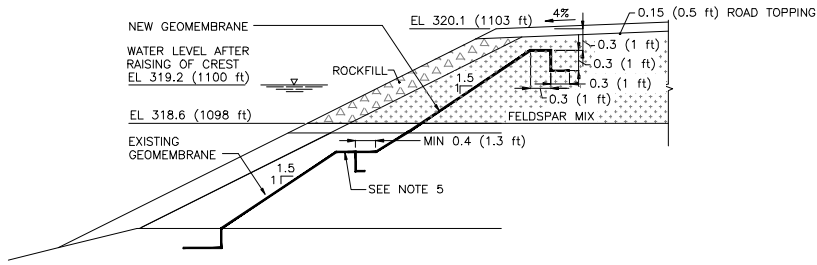




SECTION A-A
(SEE NOTE 7)



MAIN DAM TYPICAL CROSS SECTION-EAST OF CONTROL STRUCTURE



DETAIL

LEGEND:

	SHORELINE
	GROUND SURFACE ELEVATION CONTOUR
	GROUND SURFACE CONTOUR
	TRACK
	DAM/DYKE CREST
	OVERBURDEN/GROUND SURFACE
	BEDROCK SURFACE
	COORDINATE GRID MARKER
	NEW DYKE CREST
	TANCO 2004 MINERAL LEASE BOUNDARY
	TANCO 2006 MINERAL LEASE BOUNDARY

- NOTES:**
- 1) ALL CONTOURS AND ELEVATIONS GIVEN IN SECTION ARE IN UTM COORDINATES. TO CONVERT TO TANCO ELEVATIONS USE THE FOLLOWING EQUATION:
TANCO FT = (UTM/0.3048)+52.84
 - 2) COORDINATES, ELEVATIONS AND DIMENSIONS ARE IN METRES, UNLESS OTHERWISE NOTED.
 - 3) ROAD TOPPING, FELDSPAR MIX AND ROCKFILL ARE AVAILABLE FROM THE MINE SITE. FOR MATERIAL REQUIREMENT SEE DRAWING 155108015-C-0010.
 - 4) TO PROVIDE A WORKING BASE FOR PLACEMENT OF THE NEW FILL, ROCKFILL SHALL BE PLACED ALONG THE DOWNSTREAM TOE OF THE DYKES TO ABOVE THE EXISTING DOWNSTREAM WATER LEVEL. FELDSPAR MIX MAY BE ADDED TO FILL IN THE VOIDS IN THE ROCKFILL.
 - 5) SEAM REQUIRES HEAT WELD AS PER SPECIFICATIONS GIVEN IN SECTION 6.4, DRAWING 155108015-C-0010.
 - 6) REMOVE COVER SOIL AS PER THE SPECIFICATIONS GIVEN IN SECTION 6.2, DRAWING 155108015-C-0010.
 - 7) CREST ELEVATION OF MAIN DAM TO BE RAISED AT CONTROL STRUCTURE TO EL. 320.19 TO MATCH TOP OF BIN WALL AND SLOPE DOWN TO TOP OF CONCRETE STRUCTURE.

00	ISSUED FOR CONSTRUCTION	08-08-14	BDG
A	ISSUED FOR TENDER	08-07-25	BDG
NO.	DESCRIPTION	DATE	BY

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ACRES MANITOBA LIMITED
WINNIPEG
ACRES PROJECT NO. H-329446

TANCO
TANTALUM MINING CORPORATION OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
TAILINGS MANAGEMENT AREA
2008 DAM RAISE - MAIN DAM AND MINE ACCESS ROAD

DWG. DESCRIPTION
TAILINGS MANAGEMENT AREA
MAIN DAM
TYPICAL SECTIONS

DESIGNED BY: BDG	DRAWN BY: CWS	CHECKED BY: RAH
APPROVED BY: BLAIR GARINGER		
SCALE: N.T.S.	DATE: 08-07-25	REV.
DRAWING NO: 155108015-C-0009	REV.	00



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± .040" MACHINED

SITE WORK

1.0 SCOPE OF WORK

RAISE THE CREST OF THE EXISTING MAIN DAM TO ELEVATION 320.1 M AS ILLUSTRATED IN THE PLAN, SECTIONS AND DETAILS. THIS WORK SHALL INCLUDE THE REMOVAL OF REQUIRED COVER SOIL FROM THE CREST OF THE MAIN DAM, CLEANING AND REPAIRING THE EXPOSED PORTION OF THE EXISTING GEOMEMBRANE, INSTALLATION OF THE NEW GEOMEMBRANE AT THE MAIN DAM, PLACEMENT AND COMPACTION OF REQUIRED FILL MATERIALS AND INSTALLATION OF THE NEW SHEET PILING AT THE MINE ACCESS ROAD AS SPECIFIED HEREIN AND AS DIRECTED BY THE ENGINEER.

2.0 SITE CONDITIONS

THE CONTRACTOR SHALL EXAMINE THE SITE TO DETERMINE THE EXISTING CONDITIONS AND REQUIREMENTS FOR PROTECTION OF ADJACENT WORK, AND ACCEPT SITE AND EXISTING WORK, AS IT EXISTS AT TIME OF COMMENCEMENT OF WORK.

3.0 SURVEY CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE STRUCTURES ARE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS, INCLUDING PROVIDING THE NECESSARY SURVEY CONTROL DURING PLACEMENT OF FILL AND OTHER CONSTRUCTION MATERIALS.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY ALL SURVEY STAKES, RIBBON AND SURVEY EQUIPMENT REQUIRED TO COMPLETE THE PROJECT WORK.

4.0 SITE PREPARATION

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF ALL RUBBLE, TREES, LOGS, SHRUBS, FALLEN TIMBER, STUMPS, ROOTS AND ANY SURFACE LITTER, WHEREVER THEY OCCUR WITHIN THE CONSTRUCTION RIGHT-OF-WAY AND ANY OTHER AREAS AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNEXPECTED SUB-SURFACE CONDITIONS, AND DISCONTINUE WORK IN THE AREA UNTIL THE ENGINEER PROVIDES DIRECTION.

4.1 CLEARING AND GRUBBING

CLEARING AND GRUBBING MAY BE REQUIRED ALONG THE DOWNSTREAM TOE OF THE MAIN DAM AND MINE ACCESS ROAD WHERE FILL MATERIAL IS TO BE PLACED, AS DIRECTED BY THE ENGINEER. ALL TREES, BRUSH, FALLEN TIMBER, LOGS, STUMPS, ROOTS, GRASS AND BURNABLE LITTER SHALL BE COLLECTED AND HAULED TO AN APPROVED DUMPSITE AT THE COST OF THE CONTRACTOR, PRIOR TO PLACEMENT OF FILL.

TREES, IF ANY, SHALL BE FELLED TOWARDS THE CENTRE OF THE AREA TO BE CLEARED. ANY BRUSH OR TREES FALLING OUTSIDE OF THE AREA TO BE CLEARED SHALL BE MOVED BACK TO WITHIN THE RIGHT-OF-WAY AND DISPOSED OF. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS AGAINST DAMAGE TO OTHER TREES, DAMAGE TO STRUCTURES, OR PROPERTY IN THE FELLING OF TREES.

4.2 REMOVAL OF TOPSOIL

REMOVE ALL EXISTING TOPSOIL FROM THE AREAS WHERE FILL IS REQUIRED, NAMELY ALONG THE DOWNSTREAM TOE OF THE MAIN DAM AND MINE ACCESS ROAD, PRIOR TO FILL PLACEMENT. ONCE THE AREA IS PREPARED THE CONTRACTOR SHALL MAKE THE AREA AVAILABLE TO THE ENGINEER FOR INSPECTION, PRIOR TO PLACEMENT OF ANY FILL.

5.0 FILL

5.1 MATERIAL PROPERTY REQUIREMENTS

GRANULAR FILL: THE FELDSPAR MIX FILL REFERENCED TO IN THE DRAWINGS CONSIST OF A MIXTURE OF BY-PRODUCT MATERIAL FROM THE MINE OPERATIONS (COARSE SAND TO GRAVEL SIZE PARTICLES) AND TAILINGS SAND, THE MIXTURE SHALL BE PREPARED TO MEET GRADATION LIMITS SHOWN BELOW:

GRADATION LIMITS FOR FELDSPAR MIX:

PARTICLE SIZE	% PASSING
16 mm	80-100
4.75 mm	40-70
2.0 mm	25-55
425 µm	15-30
75 µm	5-15

THE FELDSPAR MIX FILL SHALL BE FREE OF SHARP ANGULAR STONES, LARGE STONES, SHALE, CLAY LUMPS CEMENTATION, ORGANIC MATERIAL, FROZEN AND OTHER DELETERIOUS MATERIALS. THE LARGEST OR MAXIMUM PARTICLE SIZE SHALL NOT EXCEED 25 MM. THE FELDSPAR MIX FILL SHALL BE UTILIZED AS FILL WITHIN THE CORE OF THE MAIN DAM AND AS COVER SOIL AROUND THE GEOMEMBRANE LINER TO PROVIDE PROTECTION AGAINST TEAR AND PUNCTURE OF THE LINER AFTER PLACEMENT.

ROCKFILL: SHALL BE COMPRISED OF BROKEN OR BLASTED SOUND, DURABLE ROCK, SOURCED ON-SITE. THE MAXIMUM PARTICLE SIZE SHALL NOT BE GREATER THAN 600 MM. INCLUSION OF GRADED PARTICLES WITH TRACE TO SOME FINES IS ACCEPTABLE, IF PREFERRED BY THE CONTRACTOR TO IMPROVE HANDLING AND FILTRATION PROPERTIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION OF THE BLASTING PROGRAM, INCLUDING ATTAINING ANY REQUIRED PERMITTING.

ROAD TOPPING: SHALL BE MEDIUM TO COARSE GRAINED SAND AND GRAVEL WITH TRACE TO SOME FINES. THE SPODUMENE TAILINGS, TYPICALLY UTILIZED FOR ON-SITE ROAD CONSTRUCTION, IS AN ACCEPTABLE SOURCE.

5.2 FILL PLACEMENT

ALL GRANULAR FILL SHOULD BE PLACED IN 6" TO 8" LIFTS, AND COMPACTED WITH A PUSH MOUNTED VIBRATORY ROLLER OR PLATE COMPACTOR, OR EQUIVALENT APPROVED BY THE ENGINEER.

THE DENSITY OF PLACED GRANULAR FILL SHALL NOT BE LESS THAN 95 PERCENT OF THE MAXIMUM STANDARD PROCTOR DENSITY, AS DETERMINED IN ACCORDANCE WITH ASTM D698.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE WATER FOR MOISTURE CONDITIONING OF THE FILL AS REQUIRED TO OBTAIN THE COMPACTION DENSITIES SPECIFIED HEREIN. THE CONTRACTOR SHALL STRIVE TO MAINTAIN THE MOISTURE CONTENT OF THE FILL TO WITHIN ±2% OF THE OPTIMUM MOISTURE CONTENT (AS DETERMINED BY ASTM D698) DURING PLACEMENT AND COMPACTION.

THE ENGINEER WILL BE RESPONSIBLE FOR COORDINATION OF AN INDEPENDENT LABORATORY TO PERFORM RANDOM TESTING OF THE PLACED FILL, TO VERIFY COMPLIANCE WITH THE SPECIFICATIONS PROVIDED HEREIN. WHILE THESE TESTS WILL BE THE RESPONSIBILITY OF THE ENGINEER, THE CONTRACTOR SHALL COOPERATE IN EVERY WAY TO ENSURE THAT THE TESTS CAN BE PERFORMED AT ALL LOCATIONS AND TIMES, AT THE DIRECTION OF THE ENGINEER.

6.0 GEOMEMBRANE LINER

THE GEOMEMBRANE MATERIAL SHALL CONSIST OF PVC 60 MIL, AS APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLY AND INSTALLATION OF THE GEOMEMBRANE LINER, AND SUBMITTAL OF THE PRODUCT SHEET TO THE ENGINEER FOR ACCEPTANCE PRIOR TO USE. INSTALLATION SHALL INCLUDE ALL LABOR AND MATERIALS REQUIRED FOR REPAIR, WELDING OF SEAMS, ANCHORING, HANDLING AND BACKFILLING, AS SPECIFIED HEREIN, IN THE DRAWINGS AND DIRECTED BY THE ENGINEER.

6.1 PROTECTION

VEHICLES ARE NOT ALLOWED TO TRAVEL OVER THE UNPROTECTED LINERS AT ANY TIME.

CARE MUST BE TAKEN TO MAINTAIN THE APPROPRIATE THICKNESS OF FILL BENEATH THE CONSTRUCTION VEHICLES. THE FOLLOWING BACKFILL THICKNESS CAN ACCOMMODATE THE REFERENCED PLACEMENT EQUIPMENT:

FILL THICKNESS	PLACEMENT EQUIPMENT
150 MM OR LESS	HAND PLACEMENT
200 - 300 MM	D3-D4 LGP CAT
300 MM	BOBCAT, D4-D6 STYLE CAT
600 MM	D7-D9 STYLE CAT

6.2 REMOVAL OF COVER SOIL

TO FACILITATE WELDING OF THE NEW GEOMEMBRANE LINER TO THE EXISTING LINER, THE COVER SOIL THAT WAS PREVIOUSLY PLACED ON THE CREST OF THE MAIN DAM WILL HAVE TO BE REMOVED. CARE SHALL BE TAKEN DURING REMOVAL TO PREVENT TEARING AND PUNCTURE OF THE LINER, BY WHATEVER MEANS ARE NECESSARY AND ARE APPROVED BY THE ENGINEER. NOTWITHSTANDING THE APPROVAL OF THE ENGINEER, THE CONDITION OF THE LINER SHALL REMAIN THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND THE CONTRACTOR WILL BE REQUIRED TO REPAIR ANY DAMAGE AT NO ADDITIONAL COST TO THE OWNER.

AFTER REMOVAL OF THE COVER SOIL, AND PRIOR TO WELDING OF THE NEW LINER TO THE EXISTING, THE CONTRACTOR SHALL MAKE AVAILABLE TO THE ENGINEER FOR INSPECTION TO VERIFY THE LINER IS CLEAN, INTACT, AND THE SURFACE IS COMPLETELY FREE OF WATER, DEBRIS AND DELETERIOUS MATERIAL.

6.3 INSTALLATION OF LINER

INSTALLATION OF THE NEW LINER SHALL BE LIMITED TO ABOVE -5'C, OR AS PER MANUFACTURERS RECOMMENDATIONS AND ACCEPTED BY THE ENGINEER.

PRIOR TO INSTALLATION OF THE LINERS, THE SUBGRADE SURFACE SHALL BE FREE FROM DEBRIS, ANGULAR SOIL PARTICLES, SNOW, ICE, AND WATER, AND THE GROUND SURFACE SHALL NOT BE IN A FROZEN CONDITION.

APPROVAL SHALL BE OBTAINED FROM THE ENGINEER FOR THE SUBGRADE, PRIOR TO THE PLACEMENT OF THE LINER.

THE NEW LINER SHALL BE PLACED IN A MANNER AND AT THE LOCATIONS SHOWN ON THE DRAWINGS, AND AS ACCEPTED BY THE ENGINEER AND SPECIFIED HEREIN.

THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE CONSTRUCTION METHODOLOGY THAT WILL BE UTILIZED FOR THE PLACEMENT OF THE LINER AND SUBGRADE, PRIOR TO IMPLEMENTATION.

CONSTRUCTION EQUIPMENT (EG. LOADER, BOBCAT, FORKLIFT) MAY BE REQUIRED FOR INSTALLATION OF THE LINER, DEPENDING ON THE LINER PANEL WEIGHT.

CARE MUST BE TAKEN TO PREVENT TEARING OR PUNCTURING OF THE LINERS DURING AND AFTER PLACEMENT.

PRIOR TO PLACEMENT OF FILL OVER THE LINER, THE CONTRACTOR SHALL MAKE AVAILABLE TO THE ENGINEER FOR INSPECTION OF THE LINER FOR PUNCTURE MARKS AND TEARS. REPAIRS SHALL BE UNDERTAKEN BY THE CONTRACTOR IMMEDIATELY USING THE APPROPRIATE REPAIR KIT. THE ENGINEER SHALL INSPECT ALL REPAIRS PRIOR TO THE PLACEMENT OF FILL MATERIAL ONTO THE LINER.

ONCE THE LINER IS IN PLACE, SLACK SHALL BE EVENLY DISTRIBUTED OVER THE ENTIRE PLACEMENT AREA, AS PER THE ACCEPTANCE OF THE ENGINEER. THE LINER SHALL BE ANCHORED IN A TRENCH AS SHOWN ON THE DRAWINGS, AND AS APPROVED BY THE ENGINEER.

SEAMS BETWEEN PANELS OF THE NEW LINER SHALL BE ORIENTED DOWN SLOPE, NOT ACROSS, AND WILL REQUIRE A MINIMUM OVERLAP OF 0.15 M (6 INCHES). NO HORIZONTAL SEAMS SHALL BE ALLOWED ALONG THE SLOPE OF THE DYKES. CHEMICAL WELDING CAN BE UTILIZED TO WELD THESE PANELS TOGETHER.

THE OVERLAP BETWEEN THE NEW LINER AND THE EXISTING LINER SHALL BE A MINIMUM OF 0.3 M (12 INCHES), AS SHOWN ON THE DRAWINGS AND DIRECTED BY THE ENGINEER, SUCH THAT THE SEAM DOES OCCUR ON A SLOPE. HEAT WELDING WILL BE REQUIRED ALONG THIS SEAM.

6.4 WELDING

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ALL APPLICABLE MATERIAL SAFETY DATA SHEET (MSDS) INFORMATION PRIOR TO CONSTRUCTION.

CHEMICAL WELDS

CHEMICAL WELDS UTILIZE A VOLATILE SOLVENT TO CHEMICALLY FUSE THE LINER MATERIALS TOGETHER, AND IS AN ACCEPTABLE MEANS OF WELDING THE PANELS OF THE NEW PVC LINER TOGETHER. SOLVENT BONDING AGENTS DISSOLVES THE TWO LINER PIECES TOGETHER AND THEN EVAPORATES OFF, SUCH THAT AFTER APPROXIMATELY 24 HOURS A HOMOGENEOUS WELD WITH NO FOREIGN MATERIAL BETWEEN THE TWO LINER SURFACES IS CREATED. THE BOND FORMED IS VERY SIMILAR TO THE BOND ATTAINED THROUGH HEAT WELDING, AND WILL LAST AS LONG AS THE LINER MATERIAL. SOLVENT BONDING IS NOT RECOMMENDED AT TEMPERATURES BELOW +10°C.

THE SOLVENT UTILIZED SHALL BE TERAHYDRONFURAN (THF), OR EQUIVALENT AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLY OF THE SOLVENT BONDING AGENT, AND SUBMITTAL OF THE PRODUCT SHEET TO THE ENGINEER FOR ACCEPTANCE, PRIOR TO USE.

HEAT WELDS

BONDING OF THE NEW LINER TO THE EXISTING SHALL BE ACCOMPLISHED USING A HEAT WELD. HEAT WELDING CAN BE CONDUCTED AT ANY TEMPERATURE, AND SHOULD BE PERFORMED BY A TRAINED PROFESSIONAL EXPERIENCED IN HEAT WELDING.

PRIOR TO HEAT WELDING, AND AFTER THE EXISTING LINER HAS BEEN CLEARED OF DEBRIS, THE TOP LAYER OF THE EXISTING LINER SHALL BE GRINDED OFF USING SPECIALIZED EQUIPMENT, AS RECOMMENDED BY THE LINER MANUFACTURER AND ACCEPTED BY THE ENGINEER.

6.5 COVER SOIL PLACEMENT

THE CONTRACTOR SHALL ENSURE THE SURFACE OF THE LINER IS FREE FROM DEBRIS, SNOW, AND ICE PRIOR TO PLACEMENT OF FILL (COVER SOIL) OVER THE LINER. THE FOLLOWING MEASURES SHALL BE UNDERTAKEN PRIOR TO PLACEMENT OF COVER SOIL:

- REMOVE STANDING WATER.
- INSPECT LINER FOR PUNCTURES AND/OR TEARS AND REPORT FINDINGS TO THE ENGINEER. REPAIR LINER PRIOR TO PLACING FILL.
- OBTAIN APPROVAL FROM ENGINEER PRIOR TO PLACEMENT OF FILL.

FILL MATERIALS THAT CONTAIN LUMPS, CLOTS OR CEMENTED INCLUSIONS THAT REQUIRE ADDITIONAL EFFORT TO BREAK DOWN ARE NOT SUITABLE.

ALL SHARP STONES, LARGE STONES, ROCKS, ROOTS AND DELETERIOUS MATERIALS SHALL BE REMOVED FROM THE FILL EITHER AT THE SOURCE OR PRIOR TO WORKING THE MATERIAL. THE LARGEST PARTICLE SIZE, OR MAXIMUM PARTICLE SIZE, SHALL NOT EXCEED 25 MM.

PLACEMENT OF FROZEN FILL IS NOT PERMITTED. IF NECESSARY, HEAT THE BACKFILL STOCKPILE OR MAKE PROVISIONS FOR HEATING AND HOARDING AT THE BACKFILL LOCATION.

THE FILL MUST BE "FREE-FLOWING" AND PLACEMENT METHODS THAT PUSH FILL ONTO THE LINER SHALL BE ABLE TO "ROLL" THE FILL AHEAD. CARE SHALL BE TAKEN TO ENSURE THAT THE FILL BEING PLACED DOES NOT "SLIP" OR SHEAR ALONG THE TOP OF THE LINER. IF SLIPPAGE OR SHEARING OCCURS CHECK FOR DAMAGE UNDER THE FILL AND REPAIR IMMEDIATELY.

SCHEDULE OF QUANTITIES

STRUCTURE	MATERIAL REQUIREMENTS				
	ROAD TOPPING (m³)	FELDSPAR MIX (m³)	ROCKFILL (m³)	GEOMEMBRANE (m²)	STEEL SHEET PILING (m²)
MAIN DAM	500	13600	19800	2700	-
ADDITIONAL CONTINGENCY	-	-	4000	-	-

NOTE:

1) QUANTITIES PROVIDED ABOVE ARE ESTIMATIONS, BASED ON THE CROSS SECTIONS SHOWN IN DRAWING 155108015-C-0009 WITH A 10% CONTINGENCY INCORPORATED.

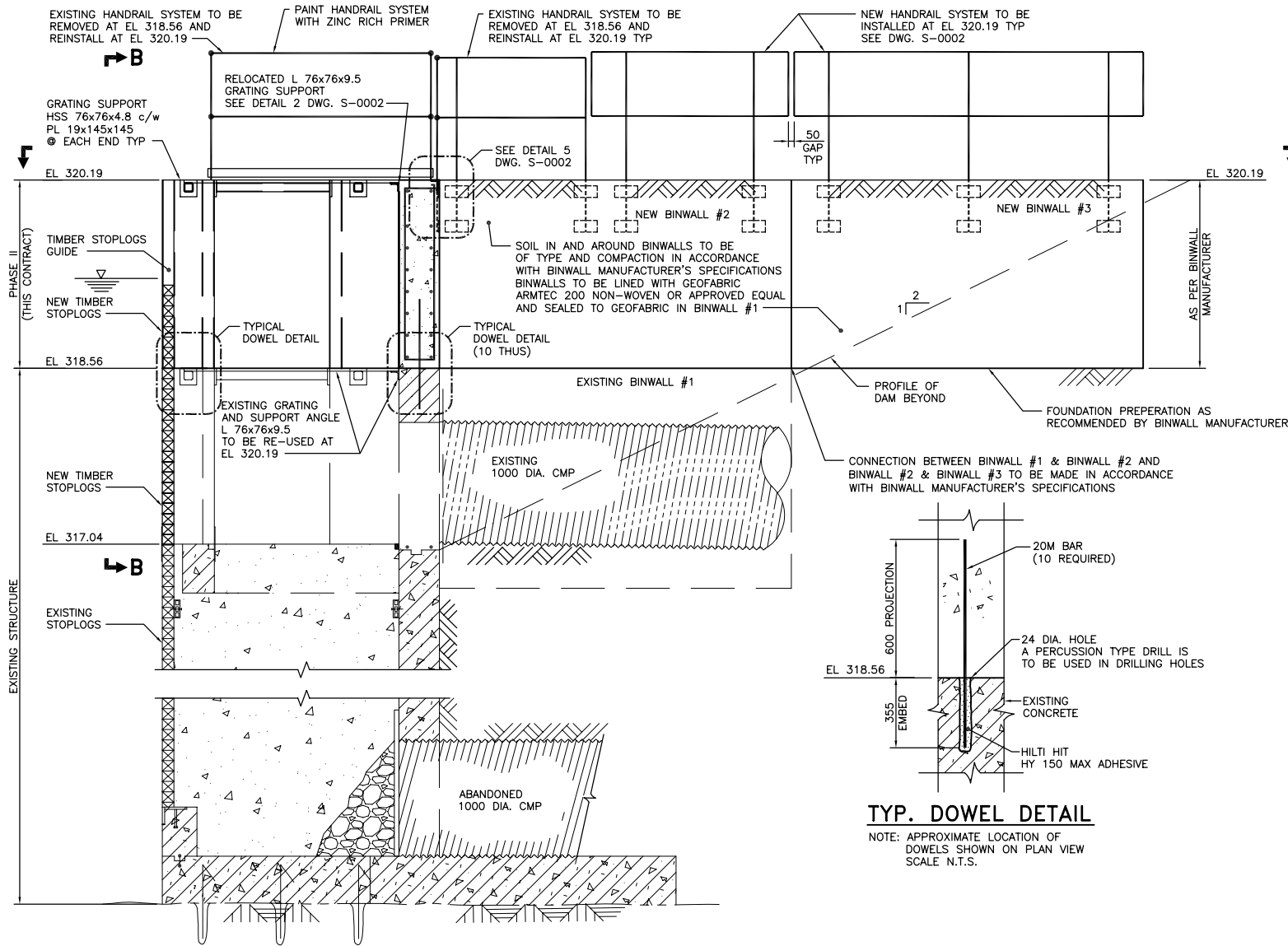
2) ADDITIONAL CONTINGENCY OF 20% IS PROVIDED FOR MAIN DAM ROCKFILL DUE TO MIXING OF ROCKFILL IN OVERBURDEN AT DOWNSTREAM SLOPE.



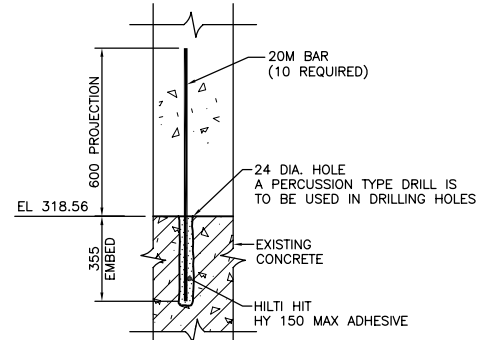
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TOLERANCES :
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± .040" MACHINED

00	ISSUED FOR CONSTRUCTION	08-08-14	BDG
A	ISSUED FOR TENDER	08-07-25	BDG
NO.	DESCRIPTION	DATE	BY
REVISIONS/ISSUE			
ACRES MANITOBA LIMITED WINNIPEG ACRES PROJECT NO. H-329446			
TANTALUM MINING CORPORATION OF CANADA LIMITED BOX 2000, LAC DU BONNET, MANITOBA			
PROJECT NAME			
TAILINGS MANAGEMENT AREA			
2008 DAM RAISE - MAIN DAM AND MINE ACCESS ROAD			
DWG. DESCRIPTION			
TAILINGS MANAGEMENT AREA SPECIFICATIONS			
ENG. STAMP	DESIGNED BY: BDG	DRAWN BY: CWS/LMA	CHECKED BY: RAH
APPROVED BY: BLAIR GARINGER			
SCALE:	AS SHOWN	DATE:	08-07-25
DRAWING NO:	155108015-C-0010	REV.	00

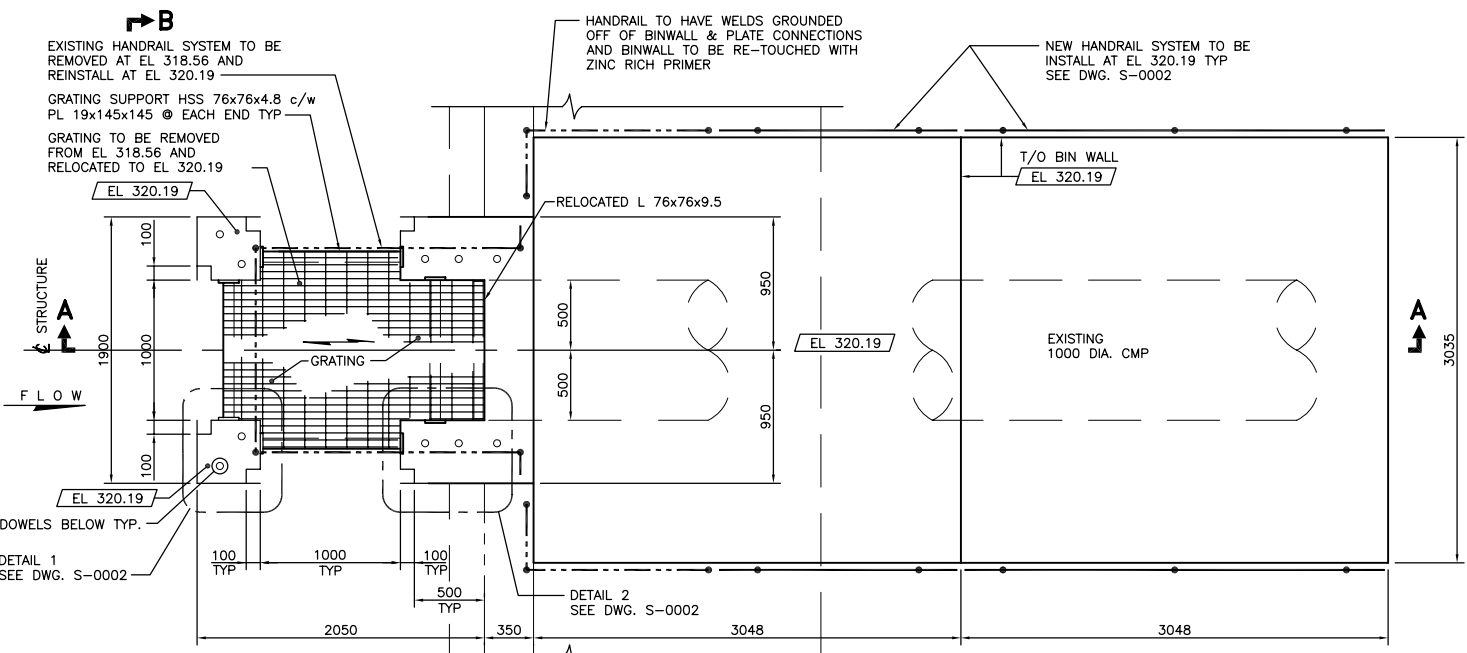


SECTION A-A



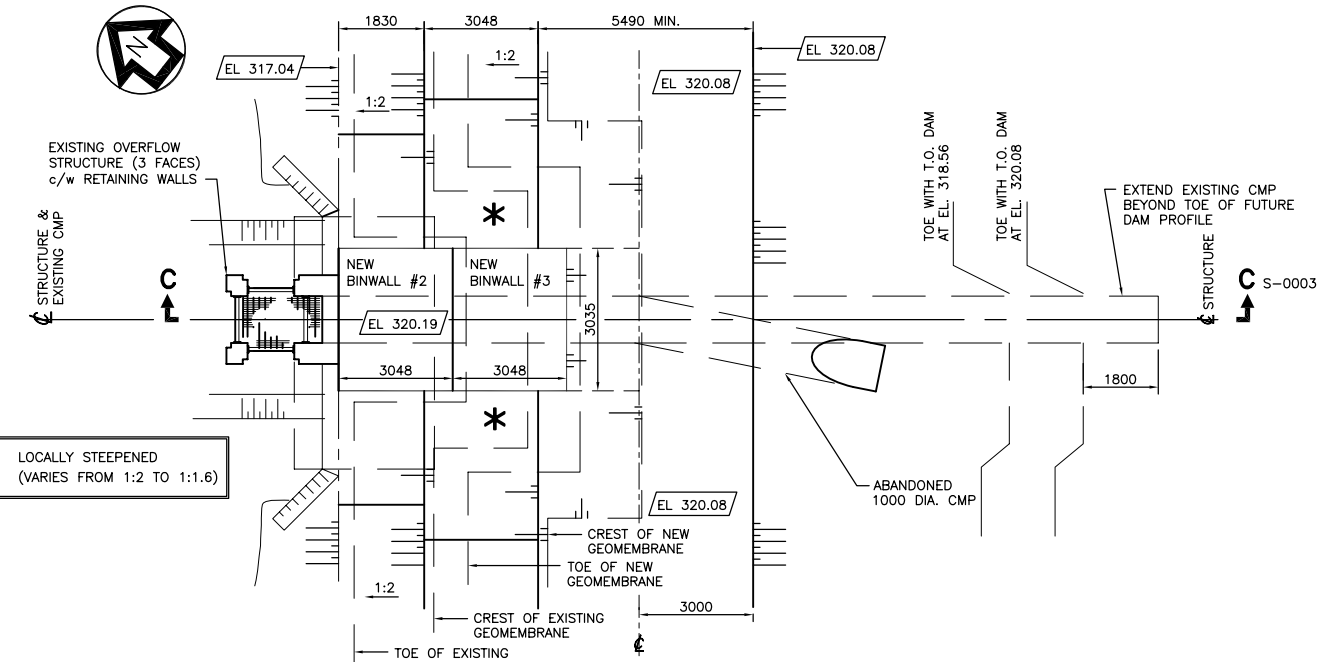
TYP. DOWEL DETAIL

NOTE: APPROXIMATE LOCATION OF DOWELS SHOWN ON PLAN VIEW SCALE N.T.S.



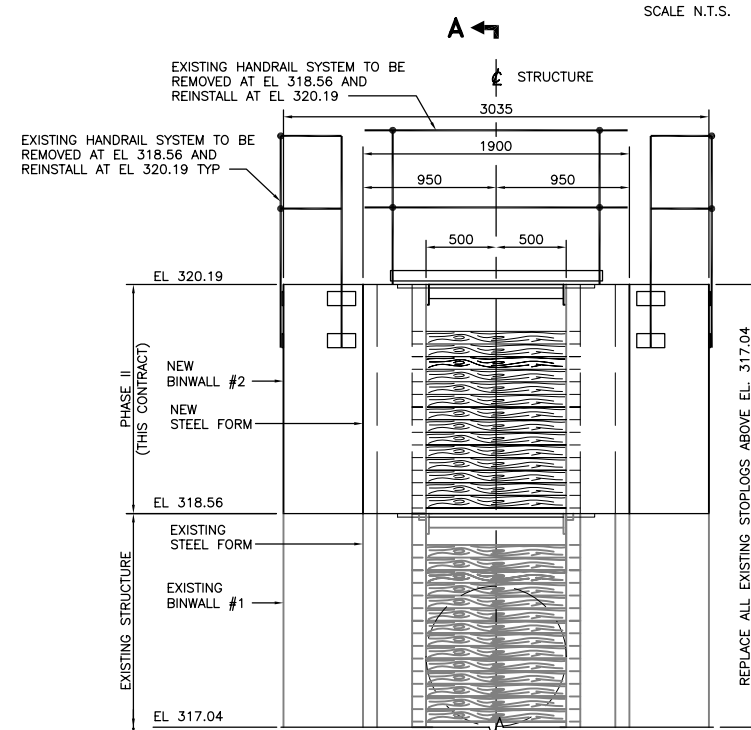
PLAN AT EL 320.19

NOTES:
1. ALL EXIST. CONC. SURFACES THAT ARE TO HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A FULL AMPLITUDE OF MIN. 5mm & CLEANED.



KEY PLAN

SCALE N.T.S.



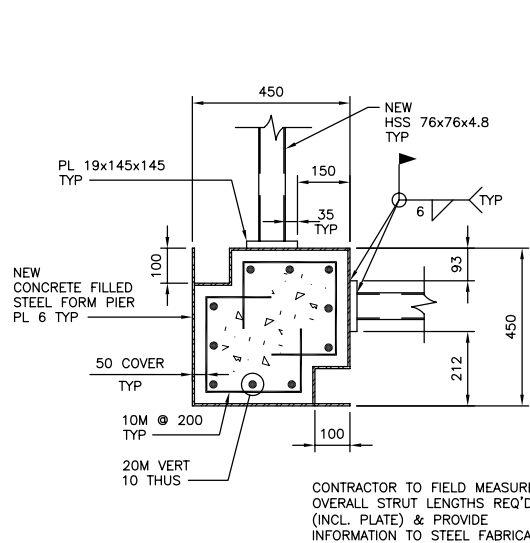
SECTION B-B

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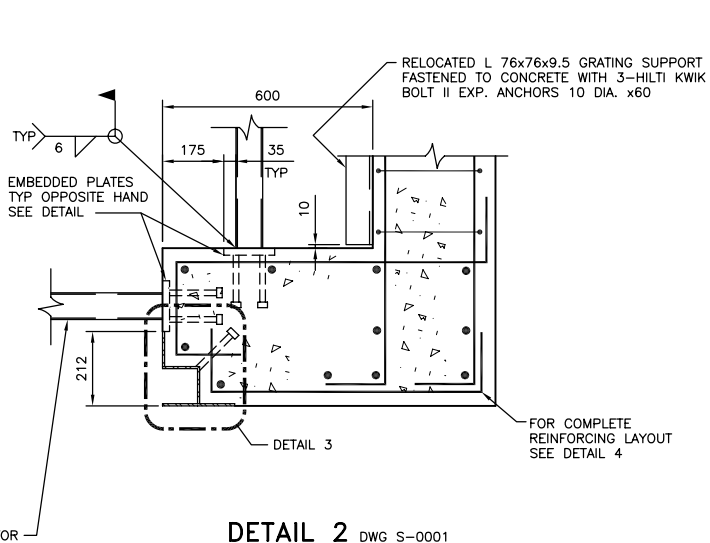
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REVISIONS/ISSUE			
ACRES PROJECT NO. H-329446			
BOX 2000, LAC DU BONNET, MANITOBA			
PROJECT NAME TAILINGS MANAGEMENT AREA 2008 DAM RAISE-MAIN DAM AND MINE ACCESS ROAD			
DWG. DESCRIPTION TAILINGS MANAGEMENT AREA CONTROL STRUCTURE PLAN & DETAILS			
ENG. STAMP	DESIGNED BY: DCZ	DRAWN BY: SWP	CHECKED BY: RM
APPROVED BY: BLAIR GARINGER			
SCALE: 1:25 U/NOTED		DATE: 2008-05-30	
DRAWING NO: 155108015-S-0001			REV. 0

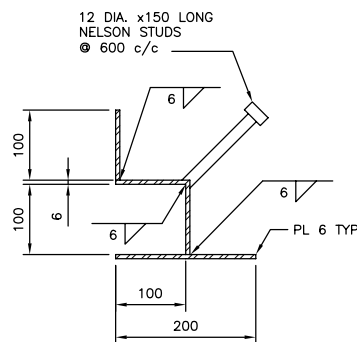


DETAIL 1 DWG S-0001

- NOTES:
- 13 DIA. DRAIN HOLE TO BE DRILLED IN ALL HSS. HOLES TO FACE DOWN
 - FIELD TOUCH-UP AT ALL FIELD CUT AND WELD LOCATIONS WITH ZINC RICH PRIMER



DETAIL 2 DWG S-0001

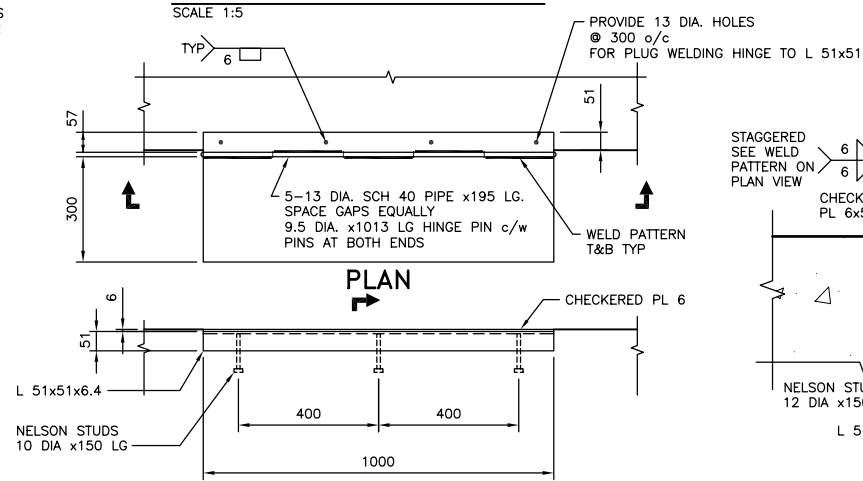


DETAIL 3

NOTE: TOUCH UP WELDS WITH ZINC RICH PRIMER SCALE 1:5

EMBEDDED PLATE-4 REQ'D

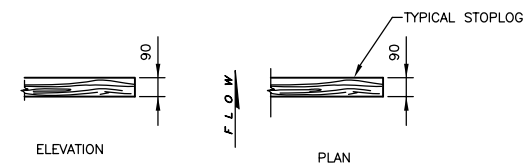
SCALE 1:5



ELEVATION

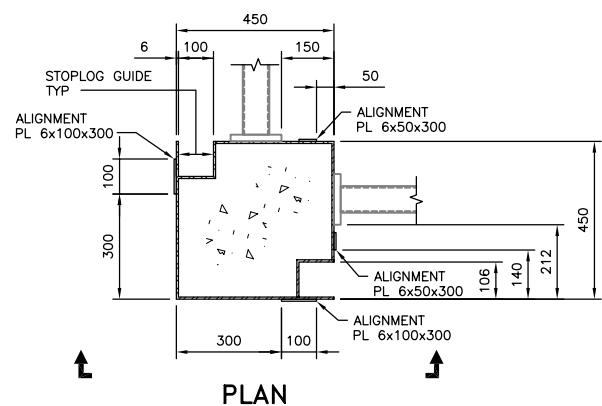
DETAIL 5

HINGE ASSEMBLY
ENTIRE HINGE ASSEMBLY TO BE GALVANIZED

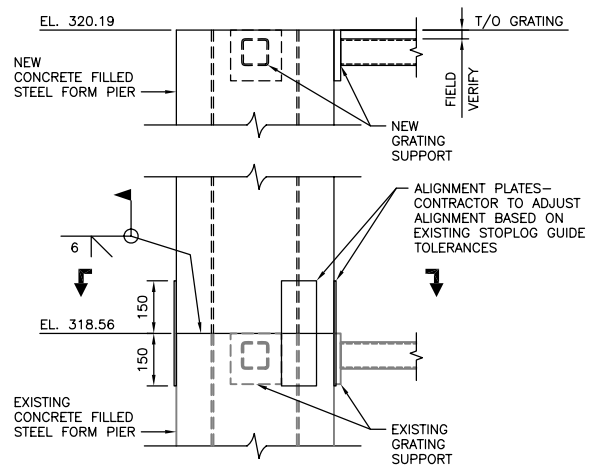


TIMBER STOPLOG DETAIL

SHOWING TIMBER STOPLOG (APPROX. 102 REQ'D @1180 mm LONG)
CONTRACTOR TO TAKE CARE DURING INSTALLATION OF STOPLOGS SO AS NOT TO DAMAGE THEM N.T.S.



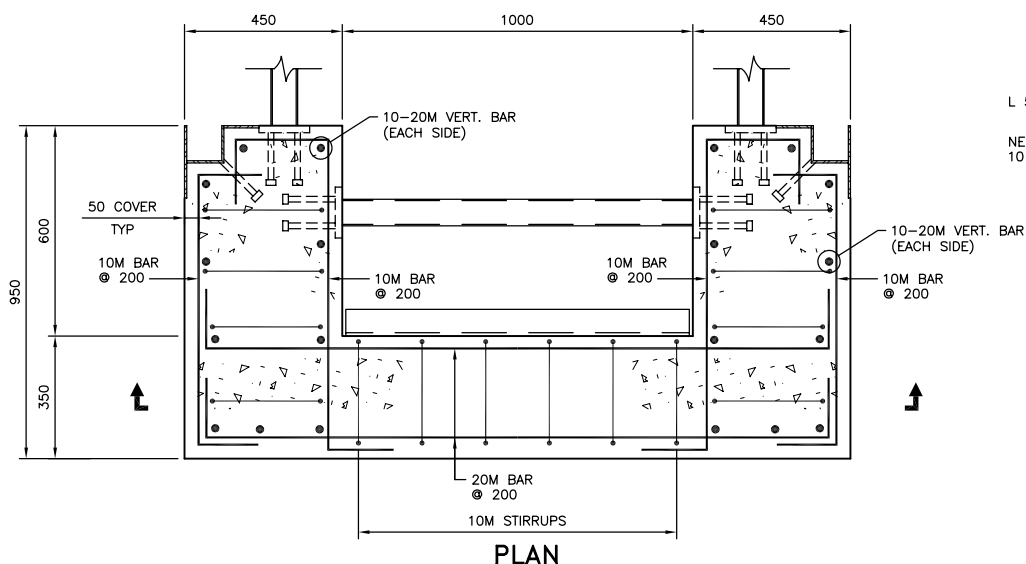
PLAN



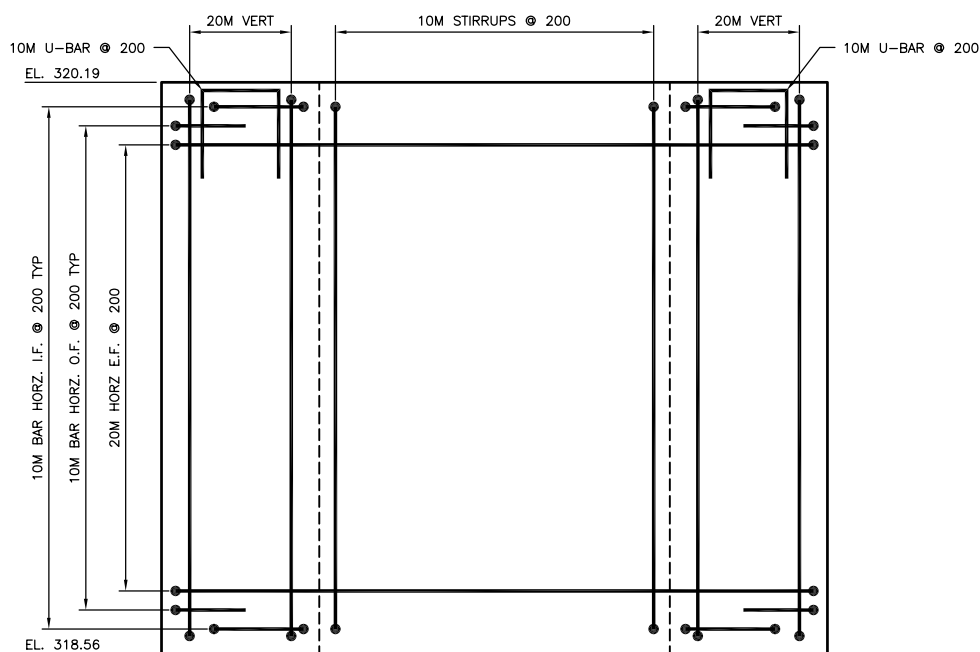
ELEVATION

JOINT DETAIL AT EL 318.56

- NOTES:
- ALL WELDS TO BE CONTINUOUS 6mm FILLET U.N.O
 - TOUCH-UP WELDS WITH ZINC RICH PRIMER AS REQUIRED

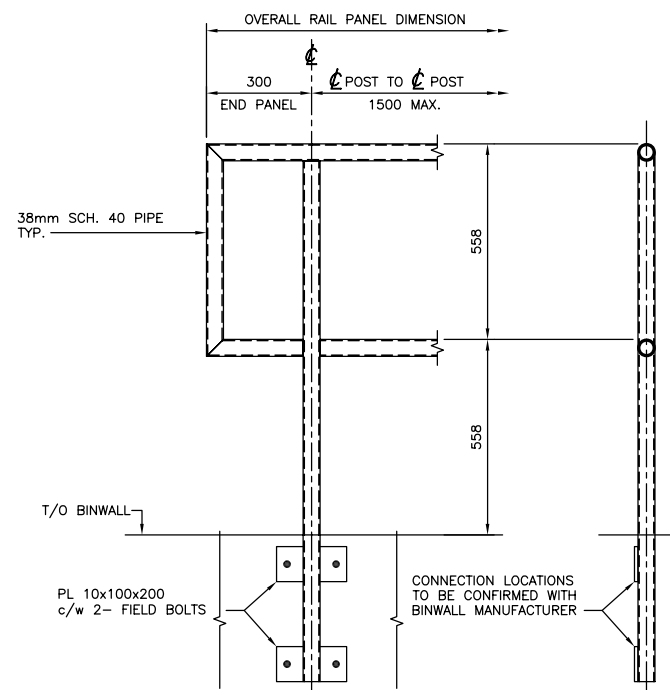


PLAN



ELEVATION

DETAIL 4



NEW HANDRAIL DETAIL

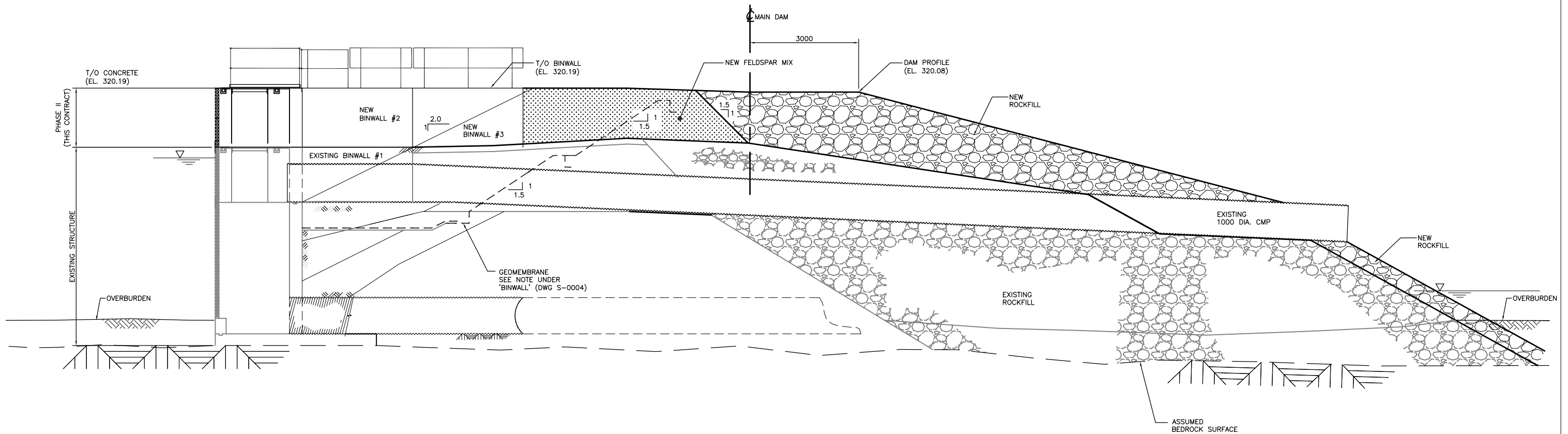
NOTE: ATTACH HANDRAIL PLATES TO BINWALL STRINGER STIFFENERS AND BINWALL STRINGERS



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REVISIONS/ISSUE			
ACRES MANITOBA LIMITED WINNIPEG ACRES PROJECT NO. H-329446			
TANTALUM MINING CORPORATION OF CANADA LIMITED BOX 2000, LAC DU BONNET, MANITOBA			
PROJECT NAME TAILINGS MANAGEMENT AREA 2008 DAM RAISE-MAIN DAM AND MINE ACCESS ROAD			
DWG. DESCRIPTION TAILINGS MANAGEMENT AREA CONTROL STRUCTURE DETAILS			
ENG. STAMP	DESIGNED BY: DCZ	DRAWN BY: SWP	CHECKED BY: RM
APPROVED BY: BLAIR GARINGER			
SCALE: 1:10 U/NOTED		DATE: 08-05-30	
DRAWING NO: 155108015-S-0002			REV. 0



CROSS SECTION C-C DWG S-0001
SCALE 1:50

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DWG. DESCRIPTION TAILINGS MANAGEMENT AREA CONTROL STRUCTURE CROSS SECTION			
ENG. STAMP	DESIGNED BY: DCZ	DRAWN BY: SWP	CHECKED BY: RM
APPROVED BY: BLAIR GARINGER			
SCALE: 1:50 U/NOTED		DATE: 08-05-30	
DRAWING NO: 155108015-S-0003			REV. 0

NOTES

GENERAL

1. ALL RELEVANT CSA CODES, PROVINCIAL BUILDING CODE, WORKMAN'S COMPENSATION BOARD, AND LOCAL BY-LAWS SHALL APPLY TO ALL WORK PERFORMED FOR THIS PROJECT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND SAFETY OF ALL TEMPORARY SHORING, BRACING, FORMWORK AND SCAFFOLDING DURING WORK ON THIS PROJECT.
3. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY SUCH DISCREPANCY. DO NOT SCALE DRAWINGS.
4. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONCRETE POUR.
5. PLACING OF FILL MATERIAL SHALL NOT BEGIN UNTIL CONCRETE HAS REACHED THE DESIGN STRENGTH.

EXCAVATION, BACKFILL AND SHORING.

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND SERVICES/ UTILITIES WITHIN THE BOUNDARIES OF THE WORK AREA PRIOR TO THE INSTALLATION OF SHORING AND PRIOR TO COMMENCING EXCAVATION.
2. EXCAVATION, ADJACENT PROPERTIES AND EXISTING STRUCTURES INCLUDING UTILITIES SHALL BE PROTECTED FROM CAVE-IN OR MOVEMENT BY ADEQUATE SHORING IF NECESSARY.
3. REMOVAL AND DISPOSAL OF ALL EXCAVATED MATERIAL, INCLUDING ANY REQUIRED CLEANING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DISPOSAL LOCATION AS DIRECTED BY TANCO.

CONCRETE

1. ALL MATERIALS, PROPORTIONING, BATCHING, DELIVERY, PLACING, CURING, AND TESTING SHALL SATISFY THE PROVISIONS OF THE LATEST EDITION OF CSA A23.1/2.
2. THE USE OF CALCIUM CHLORIDE IS NOT PERMITTED ON THIS PROJECT. ALL ADMIXTURES (INCLUDING AIR ENTRAINMENT, CHEMICAL & SUPERPLASTICIZERS) SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF CSA A23.1/2. ALL AGGREGATES SHALL BE ALKALI RESISTANT.
3. CONCRETE PERFORMANCE SPEC:

ITEM	EXPOSURE CLASS	MIN. SPECIFIED 28 DAY COMPRESSIVE STRENGTH (MPa)	CEMENT TYPE	MAX. AGGREGATE SIZE (mm)
WALLS & COLUMNS	F-1	30	GU	20

CONCRETE SUPPLIER TO SUBMIT CERTIFICATION FROM MANITOBA READY MIX ASSOCIATION
CONCRETE SUPPLIER TO SUBMIT PROPRIETARY MIX DESIGN PERFORMANCE RECORD

4. INSPECTION AND TESTING OF CONCRETE AND CONCRETE MATERIALS WILL BE CARRIED OUT BY A CONCRETE TESTING LABORATORY DESIGNATED BY THE OWNER IN ACCORDANCE WITH CSA A23.1 AND CSA A23.2.
5. OWNER WILL PAY FOR COSTS OF TESTS AS SPECIFIED.
6. MAKE THREE CYLINDERS FOR THE POUR. TWO CYLINDERS SHALL BE STORED AND CURED AS LABORATORY SPECIMENS AND TESTED AT 28 DAYS. THE THIRD CYLINDER SHALL BE TESTED AT 7 DAYS.
7. AIR CONTENT AND SLUMP SHALL BE DETERMINED ON SITE FOR EACH LOAD OF CONCRETE DELIVERED TO THE SITE.
8. THE METHOD OF STORAGE, CURING, TESTING AND REPORTING SHALL BE IN ACCORDANCE WITH CSA A23.2.
9. INTERPRETATION OF THE CONCRETE TEST DATA AND THE DETERMINATION OF ACCEPTABILITY OF THE CONCRETE SHALL BE BASED ON CSA A23.1.

REINFORCING

1. ALL REINFORCING STEEL SHALL BE NEW BILLET DEFORMED BARS TO CSA STANDARD G30.18. ALL REBAR SHALL BE 400 MPa YIELD.
2. ALL STEEL SHALL BE DETAILED, STORED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF CSA A23.1, A23.3 AND THE LATEST A.C.I. DETAILING MANUAL. ALL REBAR SHALL BE RIGIDLY HELD IN PLACE BY USE OF PROPER COMMERCIAL GRADE SPACERS, CHAIRS etc., PRIOR TO POURING CONCRETE. THE REINFORCING STEEL FABRICATOR SHALL SUPPLY ALL ACCESSORIES AS REQUIRED.
3. ALL REINFORCING STEEL SHALL BE STORED ABOVE GROUND IN DRY CONDITIONS AND CLEANED AND FREE OF ALL DIRT, GREASE AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING CONCRETE.
4. THE CONCRETE COVER TO THE REINFORCING STEEL SHALL BE:
 - (a) CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH = 75mm.
 - (b) EXPOSED TO EARTH = 50mm.
 - (c) EXPOSED TO FLOWING WATER = 50mm.
5. INSTALL BARS INTO EXISTING CONCRETE USING HILTI-HY 150 MAX INJECTION ADHESIVE ANCHOR SYSTEM. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS.
6. ALL EDGES AND CORNERS OF EXPOSED CONCRETE SHALL HAVE A 20mm CHAMFER.

SHOP DRAWINGS

1. SUBMIT THREE (3) COMPLETE SETS OF SHOP DRAWINGS TO THE OWNER FOR REVIEW MINIMUM TWO (2) WEEKS PRIOR TO REQUIRED MANUFACTURE DATE.
2. ALL SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
3. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
 - 1) REINFORCING STEEL
 - 2) BINWALL
 - 3) STEEL FORMWORK & MISC. STEEL (HANDRAIL etc.)

STRUCTURAL STEEL

1. STEEL TO CONFORM TO THE LATEST EDITION OF CAN/CSA-G40.20/G40.21.
2. ALL ROLLED OR STEEL STRUCTURAL SECTIONS AND PLATES SHALL BE G40.21-300W (HOT DIPPED GALVANIZED). ALL HOLLOW STRUCTURAL SECTIONS TO BE G40.21-350W CLASS C (HOT DIPPED GALVANIZED).
3. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF CSA-S16
4. ALL WELDING SHALL CONFORM TO THE LATEST EDITION OF CSA W59. FABRICATORS SHALL BE PROPERLY CERTIFIED IN ACCORDANCE WITH CSA W47.1.
5. ANCHOR BOLTS TO BE PROVIDED AND SET BY THE GENERAL CONTRACTOR.
6. THE STRUCTURAL STEEL SUPPLIER SHALL PROVIDE AND BE RESPONSIBLE FOR ALL HOLES IN STEEL SECTIONS REQUIRED BY OTHER TRADES. ANY CUTTING OF STEEL AT THE JOB SITE SHALL BE DONE ONLY AS DIRECTED AND APPROVED BY THE ENGINEER.
7. THE STEEL ERECTOR SHALL BE RESPONSIBLE FOR SUPPLYING, ERECTING AND MAINTAINING AND REMOVING ALL TEMPORARY GUYING AND BRACING TO PROVIDE STABILITY FOR THE STRUCTURE AS A WHOLE.
8. STEEL SUPPLIER IS TO SUBMIT ENGINEERING DRAWINGS BEARING THE SEAL OF A REGISTERED ENGINEER COVERING THE DESIGN OF CONNECTIONS, TO THE PROJECT DESIGN ENGINEER FOR REVIEW PRIOR TO FABRICATION.
9. ALL BOLTED CONNECTIONS TO USE M20 A325 HIGH STRENGTH BOLTS. ALL CONNECTIONS SHALL CONSIST OF MINIMUM 2 BOLTS.
10. TOUCH UP PRIMER ZINC RICH TO CGSB-GP-181
11. CONTRACTOR TO TAKE ALL NECESSARY SAFETY PRECAUTIONS DURING FIELD WELDING OPERATIONS.

FORMWORK

1. FORMWORK CONSTRUCTION AND REMOVAL SHALL BE IN ACCORDANCE WITH CSA A23.1, CSA S269 SERIES.
2. SIDE FORMS FOR WALLS AND POSTS SHALL REMAIN IN PLACE FOR A MINIMUM 48 HOURS.
3. FORMED SURFACES SHALL RECEIVE A SMOOTH FORM FINISH WITH ALL SMALL VOIDS, HONEYCOMBED AREAS, CRACKS, TIE HOLES, ETC., PATCHED WITH CEMENT/SAND MORTAR IN ACCORDANCE WITH CSA A23.1 AND AS PER ENGINEERS RECOMMENDATIONS.
4. EXPOSED UNFORMED SURFACES SHALL RECEIVE A SMOOTH DENSE TROWELLED SURFACE FREE FROM BLEMISHES TO CSA A23.1.
5. PLACING OF CONCRETE SHALL NOT COMMENCE UNTIL THE FORMWORK AND REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY THE ENGINEERING REPRESENTATIVE.

DAM

1. PERMANENT DAM TO BE CONSTRUCTED AS SHOWN ON DWGS 155108015-C-0007 TO 155108015-C-0010, INCLUSIVE.
2. PLACING OF FILL MATERIAL SHALL NOT BEGIN UNTIL CONCRETE HAS REACHED THE DESIGN STRENGTH.
3. PLACEMENT OF FILL MATERIAL AGAINST THE STRUCTURE SHALL BE DONE IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE TO ENSURE THAT COMPACTION/EQUIPMENT WILL NOT IMPOSE UNDUE LOADS ON THE STRUCTURE.
4. MAIN DAM WILL BE RAISED TO THE PHASE II DAM PROFILE.

STOPLOGS

1. TIMBER STOPLOGS TO BE STRUCTURAL SELECT GRADE S-P-F. TIMBERS SHALL BE FREE FROM KNOTS, CHECKS, SPLINTS OR FROM SWELLING OR TWISTING OR OTHER DEFECTS WHICH WOULD MAKE THEM UNFIT FOR THEIR INTENDED USE. BEARING SURFACES OF TIMBERS SHALL HAVE AT LEAST 75% OF THE ENTIRE CONTACT AREA IN FULL BEARING AND THE SEPARATION OF ANY REMAINING PORTION SHALL NOT EXCEED 2mm AT LOCALIZED SEPARATIONS.
2. ACTUAL FINISHED DIMENSIONS OF TIMBER STOPLOG TO BE 89mm x 89mm.
3. PRESERVATIVE TREATMENT - TIMBER STOPLOGS TO BE PRESSURE TREATED WITH CHROMATED COPPER ARSENATE (12kg OF PRESERVATIVE PER CUBIC METRE OF WOOD) IN CONFORMANCE WITH THE RECOMMENDATION OF CSA STANDARD O80 OR APPROVED EQUAL.

BINWALL

1. BINWALL SYSTEM TO BE ARMTEC BINWALL TYPE DESIGN 'C'.
2. BINWALL SYSTEM TO BE DESIGNED BY MANUFACTURER.
3. THICKNESS OF BINWALL MEMBERS TO BE AS PER MANUFACTURER'S SPECIFICATIONS.
4. HANDRAIL CONNECTION TO BINWALL SHALL BE AS PER BINWALL MANUFACTURER'S RECOMMENDATIONS.
5. BACKFILL BINWALLS WITH GRANULAR MATERIAL AS PER MFR'S SPEC'S.
6. GEOMEMBRANE INSTALLED ALONG THE MAIN DAM SHALL CONTINUE ACROSS THE CONTROL STRUCTURE AS SHOWN ON THE DRAWINGS TO PROVIDE UPSTREAM SEEPAGE BARRIER FOR THE MAIN DAM. THE LOWER END OF THE GEOMEMBRANE LINER SHALL BE WELDED TO THE EXISTING LINER AS PER SECTION 6.4 OF DWG 1551080155-C-0010. SLOPES FOR THE LINER AND CONSTRUCTION DETAILS AROUND THE BINWALL TO BE PLACED TO SUIT SITE CONDITIONS. BENTONITE POWDER MAY BE REQUIRED TO PROVIDE GOOD SEAL ALONG LINER INTERFACES.

CLEAN UP

1. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL TOOLS, EQUIPMENT, SURPLUS MATERIALS AND DEBRIS RESULTING FROM THEIR OPERATION AND LEAVE THE SITE IN A CLEAN ACCEPTABLE CONDITION.



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DWG. DESCRIPTION TAILINGS MANAGEMENT AREA CONTROL STRUCTURE NOTES			
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APPROVED BY: BLAIR GARINGER			
SCALE: 1:25		DATE: 08-05-30	
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