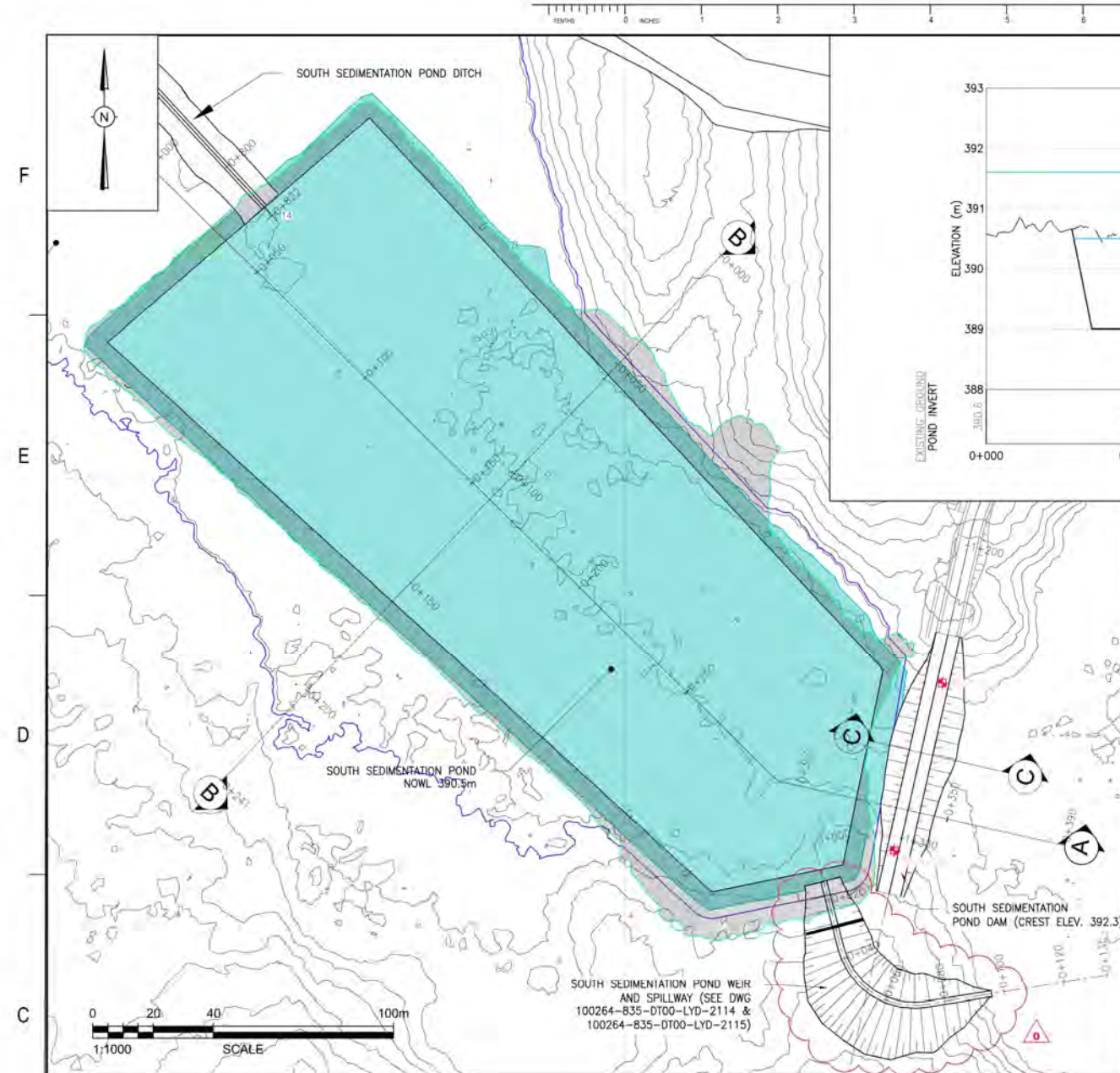


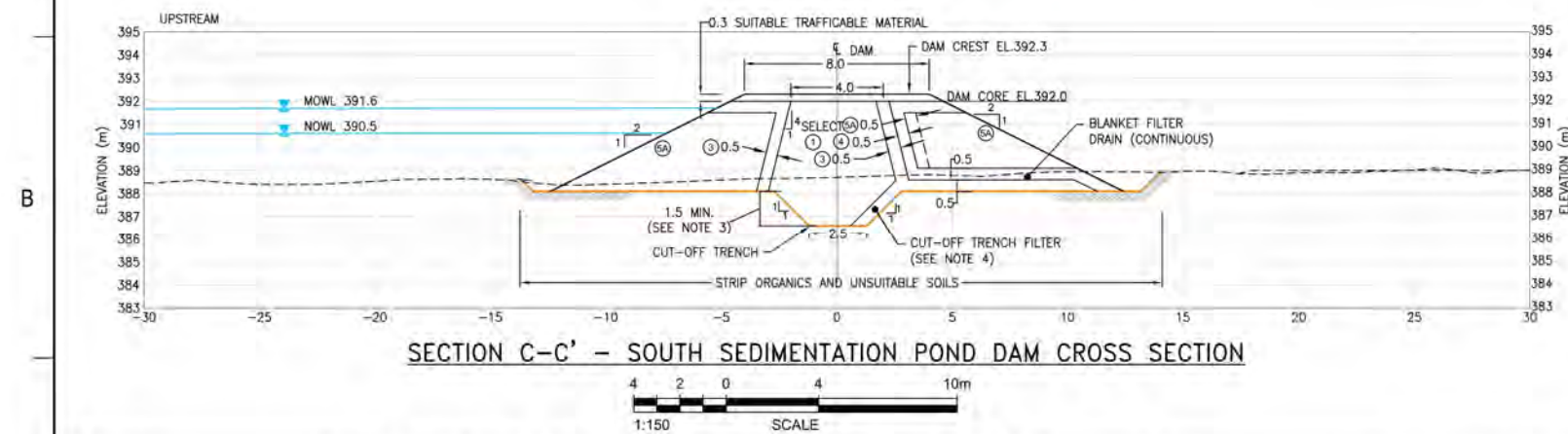


Appendix O Overburden Stockpile Sedimentation Containment Ponds Dam Design Report

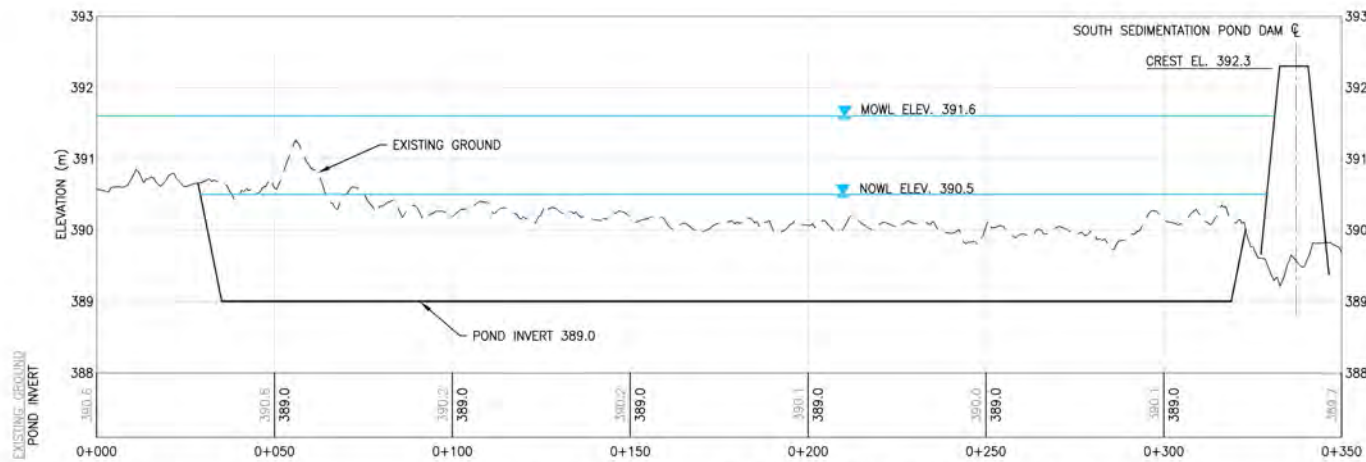
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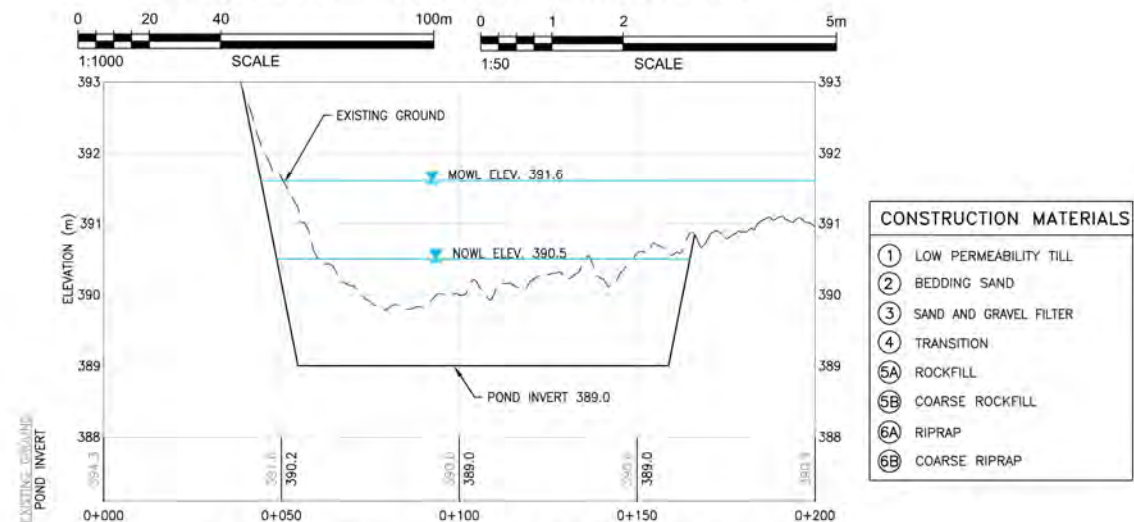
PLAN



SECTION C-C' - SOUTH SEDIMENTATION POND DAM CROSS SECTION

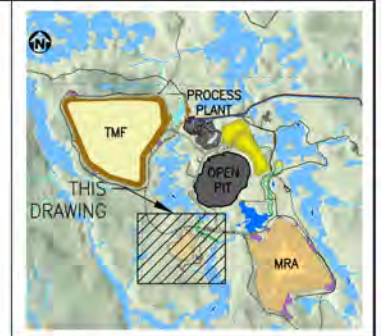


SECTION A-A' - NORTH SEDIMENTATION POND



SECTION B-B' - SOUTH SEDIMENTATION POND

CONSTRUCTION MATERIALS	
①	LOW PERMEABILITY TILL
②	BEDDING SAND
③	SAND AND GRAVEL FILTER
④	TRANSITION
⑤A	ROCKFILL
⑤B	COARSE ROCKFILL
⑥A	RIPRAP
⑥B	COARSE RIPRAP



KEY PLAN

NOTES:

- THIS DRAWING ILLUSTRATES THE PLAN, PROFILE AND SECTION VIEWS FOR SOUTH SEDIMENTATION POND.
- STRATIGRAPHY IS INFERRED BETWEEN AND BEYOND BOREHOLES AND TEST PITS AND ACTUAL STRATIGRAPHY MAY VARY FROM THAT SHOWN.
- CUT-OFF TRENCH TO EXTEND THROUGH PERMEABLE SOILS AND TERMINATE IN LOW PERMEABILITY FOUNDATION (SILT, TILL, OR BEDROCK). THE CUT-OFF TRENCH BOTTOM SHOULD EXTEND BELOW THE PREPARED FOUNDATION SURFACE. THE MINIMUM CUT-OFF TRENCH DEPTH IS 1.5 M OR BEDROCK, WHICHEVER IS ENCOUNTERED FIRST.
- ZONE 3 CUT-OFF TRENCH FILTER AND ZONES 3 AND 4 HORIZONTAL BLANKET FILTERS ARE NOT REQUIRED WHEN THE PREPARED FOUNDATION SURFACE IS IN SAND AND GRAVEL SOILS OR IN BEDROCK, OR WHEN HEIGHT OF THE DAM IS LESS THAN 1.5 M. THE OWNER'S REPRESENTATIVE TO PROVIDE FIELD DIRECTION ON FILTER REQUIREMENTS.
- FOUNDATION PREPARATION BY STRIPPING ORGANICS AND UNSUITABLE SOILS AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

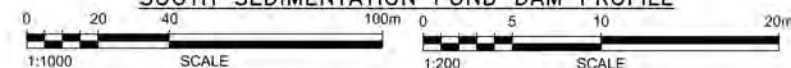
LEGEND:

- 384.0 CONTOURS
- EXISTING WATERSHED BOUNDARY
- PROPOSED ACCESS ROAD
- EXISTING ROAD
- FLOW DIRECTION
- EXISTING LAKE
- EXISTING WATER BODY
- CONTACT WATER BODIES

STRATIGRAPHY LEGEND:

- GROUND WATER LEVEL
- ORGANICS
- SANDY SILT TO SILT
- CLAY TO SILT
- SILTY SAND TO SAND
- SAND AND GRAVEL
- BEDROCK
- TILL
- SNOW / WATER / ICE
- COBBLES AND BOULDERS
- SILTY SAND AND GRAVEL

SOUTH SEDIMENTATION POND DAM PROFILE



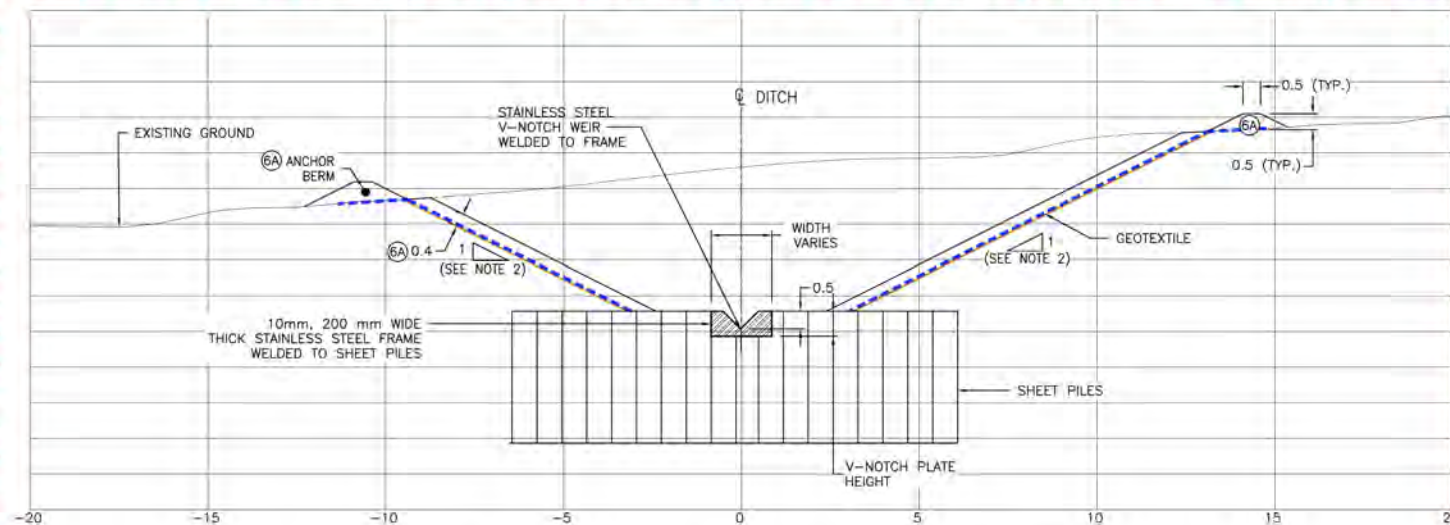
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2	04 DEC 19				ISSUED FOR BID / SUPERSEDING	2	04 DEC 19				ISSUED FOR BID / SUPERSEDING
3	04 DEC 19				DRAWING NO. 100264-835-DT00-2114	3	04 DEC 19				DRAWING NO. 100264-835-DT00-2114

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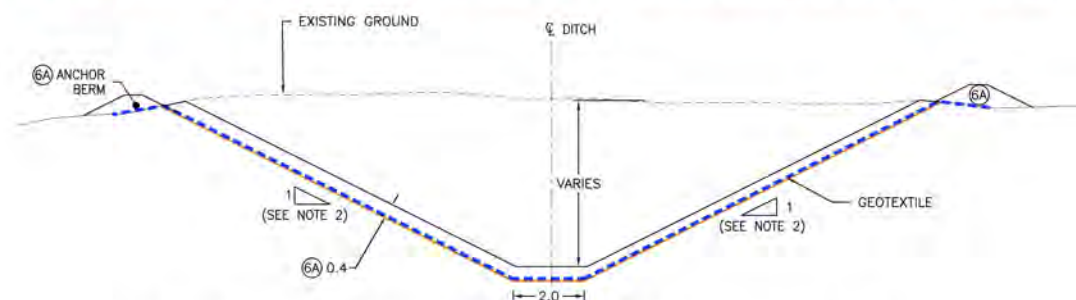
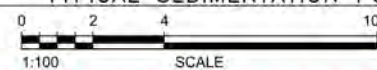
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SOUTH SEDIMENTATION POND DAM PLAN, PROFILE AND SECTION	CÔTÉ GOLD PROJECT CACO-A

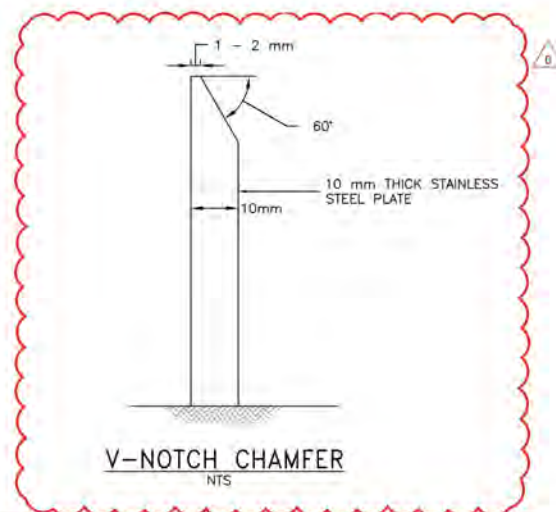
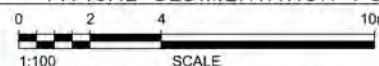
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SECTION A-A' - TYPICAL SEDIMENTATION POND WEIR



SECTION B-B' - TYPICAL SEDIMENTATION POND SPILLWAY



CONSTRUCTION MATERIALS	
①	LOW PERMEABILITY TILL
②	BEDDING SAND
③	SAND AND GRAVEL FILTER TRANSITION
④	ROCKFILL
⑤A	COARSE ROCKFILL
⑥A	RIPRAP
⑥B	COARSE RIPRAP
GEOSYNTHETICS	
---	GEOTEXTILE

NOTES:

- THIS DRAWING ILLUSTRATES THE NORTH AND SOUTH SEDIMENTATION POND WEIR AND SPILLWAY SECTIONS AND DETAILS.
- USE 8H:1V SLOPES FOR RUNOFF COLLECTION CHANNELS WHERE PEAT IS ENCOUNTERED AND 3H:1V SLOPES IN OVERBURDEN SOILS. IF SHALLOW WATER TABLE IS ENCOUNTERED ADDITIONAL LOCAL MAINTENANCE MAY BE REQUIRED.
- NO GEOTECHNICAL BOREHOLE OR TEST PIT INFORMATION IN THE VICINITY OF THE PROPOSED WEIR IS AVAILABLE.
- EXCAVATION LIMITS OF THE CONCRETE WEIR MAY VARY DEPENDING UPON THE FIELD CONDITIONS ENCOUNTERED.
- BACKFILL ON EITHER SIDE OF CONCRETE WEIR TO BE COMPACTED TO AT 95% SPMD.

GENERAL NOTES:

- SUPPLY, INSTALLATION, MONITORING, OPERATION AND REMOVAL SHALL COMPLY WITH THE PROJECT SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARD SPECIFICATION OPSS 903.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE APPLICABLE CURRENT EDITIONS OF CANADIAN STANDARDS, CODES OF PRACTICES AND ANY OTHER SPECIFIED STANDARDS EXCEPT WHERE THE REQUIREMENTS OF THESE STANDARDS OR CODES ARE IN CONFLICT WITH THIS SPECIFICATION WHICH SHALL TAKE PRECEDENCE.
- SAFETY PRECAUTIONS DURING SUPPLY, INSTALLATION, OPERATION AND REMOVAL SHALL ADHERE TO THE APPLICABLE OHSA OREG. 213/91 AND 252/14 ALONG WITH SITE SPECIFIC SAFETY REQUIREMENTS AS LAYOUT IN THE SPECIFICATIONS.

STRUCTURAL STEEL NOTES:

- ALL STRUCTURAL ROLLED OR WELDED STEEL SHALL CONFORM TO CSA STANDARD CAN/CSA-G40.20/G40.21 LATEST EDITION, GRADE 350W, UNLESS OTHERWISE NOTED.
- WELDING SHALL BE IN ACCORDANCE WITH CSA-W59 LATEST EDITION. WELDING ELECTRODES SHALL BE CSA WHB SERIES.
- SPICES SHALL DEVELOP FULL CAPACITY OF THE SHEET PILE. WELD METAL SHALL NOT ENCRATCH WITHIN THE INTERLOCK AREAS.

PRECONSTRUCTION SUBMITTALS AND SUPPLY NOTES:

- THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS SEALED BY PROFESSIONAL ENGINEERS LICENSED TO PRACTICE IN ONTARIO AND SUBMIT FOR INFORMATION AND APPROVAL BY THE OWNER.
- THE CONTRACTOR SHALL SUBMIT FOR INFORMATION AND APPROVAL ALL RELEVANT DETAILS OF THE CONSTRUCTION AND MONITORING METHODS ALONG WITH THE PROGRAM FOR INSTALLATION.
- SUPPLIED MATERIALS SHALL COMPLY WITH THE DIMENSIONS AND QUALITY SPECIFIED IN THE DESIGN. REPLACEMENT ALTERNATIVES SHALL NOT BE USED UNTIL THE CONTRACTOR HAS DEMONSTRATED THE NEW MATERIALS MEET ALL THE REQUIREMENTS OF THE SPECIFICATIONS AND OBTAIN WRITTEN APPROVAL FROM THE OWNER.
- ALL COMPONENTS OF THE SHORING SHALL BE MADE AVAILABLE FOR INSPECTION BEFORE INSTALLATION. DAMAGED ELEMENTS SHALL BE REPAIRED OR REPLACED.

INSTALLATION NOTES:

- THE CONTRACTOR SHALL SATISFY HIMSELF THAT THE SHEET PILES CAN BE INSTALLED ADEQUATELY TO THE TARGET ELEVATIONS.
- THE CONTRACTOR SHALL SATISFY HIMSELF WITH THE PROJECT INFORMATION AVAILABLE AND IS RESPONSIBLE TO ACQUIRE THE NECESSARY KNOWLEDGE OF THE SITE ACCESS, CONSTRAINTS, SURFACE AND SUBSURFACE CONDITIONS.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR FIELD CHECKING ALL DIMENSIONS, ELEVATIONS AND MARKING THE LOCATIONS OF THE SHEET PILE WALL, AND OBTAIN CONFIRMATION FROM THE CONTRACT ADMINISTRATOR PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE CONTRACT ADMINISTRATOR ANY CIRCUMSTANCES INDICATING THAT IN HIS OPINION THE GROUND CONDITIONS DIFFER FROM THOSE EXPECTED OR INFERRED FROM THE SUBSURFACE INVESTIGATIONS.

- THE SHEET PILES SHALL BE INSTALLED TO THE TARGET ELEVATIONS WITHOUT DAMAGE TO THE PILE ITSELF, PREVIOUSLY COMPLETED WALL AND ANY OTHER ADJACENT FACILITIES.

- IF THE PILES HAVE NOT PENETRATED TO THE TARGET ELEVATIONS DUE TO THE REACH OF "PRACTICAL REFUSAL", OR HAVE ENCOUNTERED OBSTRUCTIONS, THE CONTRACTOR SHALL SUBMIT DETAILS TO MITIGATE THE PROBLEM.

- TOLERANCES: UNLESS DEFLECTED BY OBSTRUCTIONS, SHEET PILE SHALL BE INSTALLED WITHIN THE FOLLOWING TOLERANCES:

- IN PLAN +/- 75 MM OF THE WALL LINE AT THE GROUND SURFACE
- INCLINATION FROM VERTICAL 1 IN 50
- LEVEL +/- 75 MM OF THE REQUIRED TOP LEVEL

PILING QUALITY CONTROL AND RECORDS NOTES:

- THE CONTRACTOR SHALL SUBMIT PRIOR TO COMMENCEMENT OF WORK THE QUALITY ASSURANCE AND QUALITY CONTROL PLAN FOR THE WORKS.
- THE CONTRACTOR SHALL PROVIDE COMPETENT FULL-TIME SITE SUPERVISION. A CURRICULUM VITAE OF THE SUPERVISORS SHALL BE SUBMITTED TO THE OWNER PRIOR TO COMMENCEMENT OF INSTALLATION. THE SUPERVISORS SHALL NOT BE REMOVED FROM THE SITE WITHOUT NOTIFICATION AND APPROVAL FROM THE OWNER.
- THE CONTRACTOR SHALL MAINTAIN UPDATED RECORDS OF THE PILING PROGRESS, INCLUDING, WITHOUT BEING LIMITED THE FOLLOWING:

- SHEET PILE TYPE AND STEEL GRADE
- SHEET PILE REFERENCE NUMBER AND LOCATION
- DRIVING EQUIPMENT
- PILE LENGTH DURING INSTALLATION
- PILE INSTALLATION DATES
- PILE DRIVING RECORDS
- GROUND SURFACE ELEVATION, PILE STICKUP
- ALL INFORMATION REGARDING INTERRUPTION, UNEXPECTED CHANGES, DRIVING OBSTRUCTIONS, TIMES TAKEN WITH SOLVING PROBLEMS.

TABLE 1: V-NOTCH WEIR DETAILS

NORTH SEDIMENTATION POND					
	HEIGHT (m)	TOTAL WIDTH (m)	ANGLE (DEGREES)	CHANNEL WIDTH AT TOP OF SHEET PILES (m)	TOP EL. (m)
SHEET PILES	4.0	14		MIN. 5.0	388.4
SHEET PILES AT V-NOTCH	3.0				387.4
V-NOTCH	0.5	1.0	90.0		388.4
V-NOTCH INVERT					387.9
V-NOTCH PLATE	1.0	1.7			
NATURAL GROUND MIN.					389.3
SOUTH SEDIMENTATION POND					
	HEIGHT (m)	TOTAL WIDTH (m)	ANGLE (DEGREES)	CHANNEL WIDTH AT TOP OF SHEET PILES (m)	TOP EL. (m)
SHEET PILES	4.2	14		MIN. 1.4	391.2
SHEET PILES AT V-NOTCH	3.0				390.0
V-NOTCH	0.7	1.4	90.0		391.2
V-NOTCH INVERT					390.5
V-NOTCH PLATE	1.2	2.1			390.5
NATURAL GROUND MIN.					392.3

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0	07 FEB 20	ISSUED FOR CONSTRUCTION																																	
1	06 DEC 19	RE-ISSUED FOR BID																																	
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AS SHOWN	CHK	CZ
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NORTH AND SOUTH SEDIMENTATION POND WEIR AND SPILLWAY SECTIONS AND DETAILS	

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