

STAGE OF OPERATION NOTES - DETAILED SEQUENCING

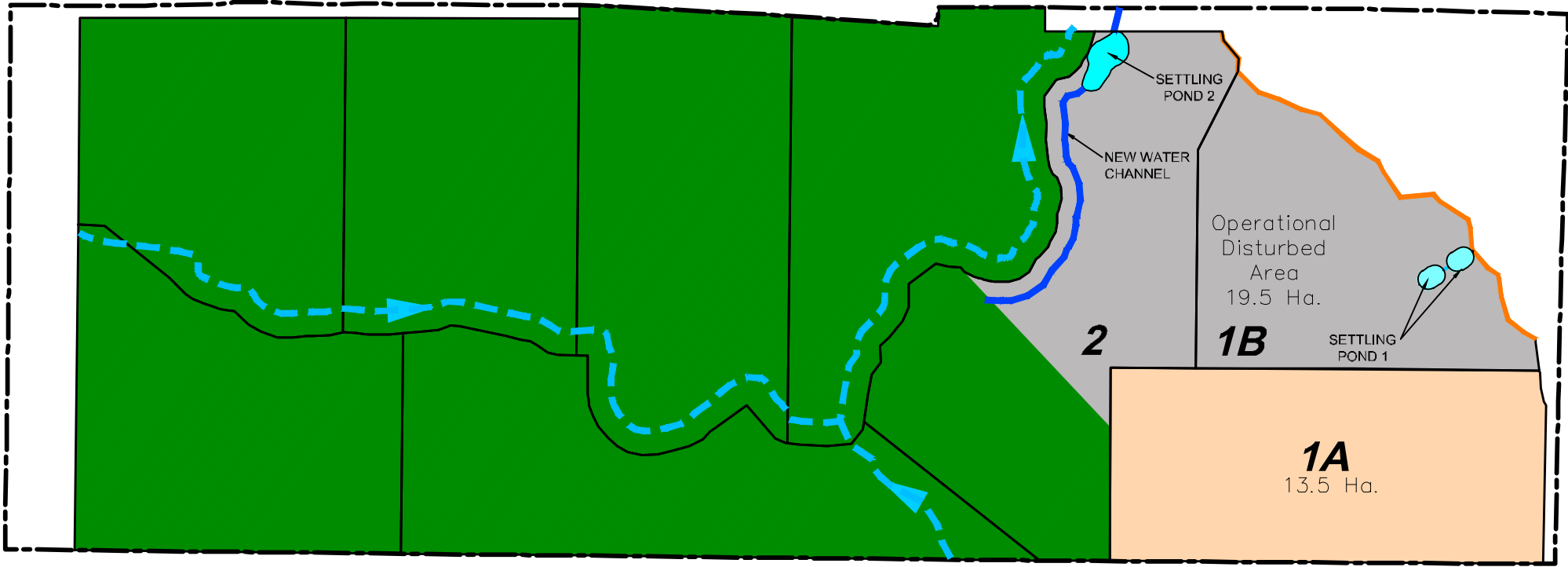
STAGE 1

PHASE 1A

1. FENCE THE WESTERLY 300 METRES OF THE SOUTH BOUNDARY OF THE SITE. MAINTAIN THE FENCE FOR THE LIFE OF THE QUARRY.
2. DELINEATE THE SOUTH EAST CORNER OF THE SITE ADJACENT TO THE PSW WITH MARKER POSTS AND SILTATION CONTROLS. MARKER POSTS AND SILTATION CONTROLS ARE TO BE MAINTAINED FOR THE LIFE OF THE QUARRY.
3. DEMARCATATE THE WEST, NORTH AND NORTH EAST LICENSED BOUNDARIES WITH MARKER POSTS. MARKER POSTS ARE TO BE MAINTAINED FOR THE LIFE OF THE QUARRY.
4. THE UNOPENED PORTION OF NICHOL'S LINE SHALL BE DESIGNED, APPROVED AND THEN CONSTRUCTED TO SERVICE THE SITE. CONSTRUCTION OF THIS PORTION OF THE DESIGNATED HAUL ROUTE, WILL BE DONE IN CONJUNCTION WITH THE CLEARING, STRIPPING AND PREPARATION OF THE PROCESSING/SHIPPING/RECYCLING AREA.
5. CONSTRUCT AND INSTALL NOISE BARRIERS ALONG THE EAST PORTIONS OF PHASE 1A AS SHOWN ON DETAIL E (SHEET 4 OF 8).
6. EXTRACT AND REMOVE AGGREGATE IN PHASE 1A TO AN ELEVATION OF 224.0 MASL.

PHASE 1B

CONSTRUCT SETTLING POND 1 ALONG THE SOUTH EAST BOUNDARY OF PHASE 1B ADJACENT TO THE PSW TO CONTROL RUNOFF AND PROTECT THE PSW FROM SILTATION.



STAGE 2

PHASE 1A

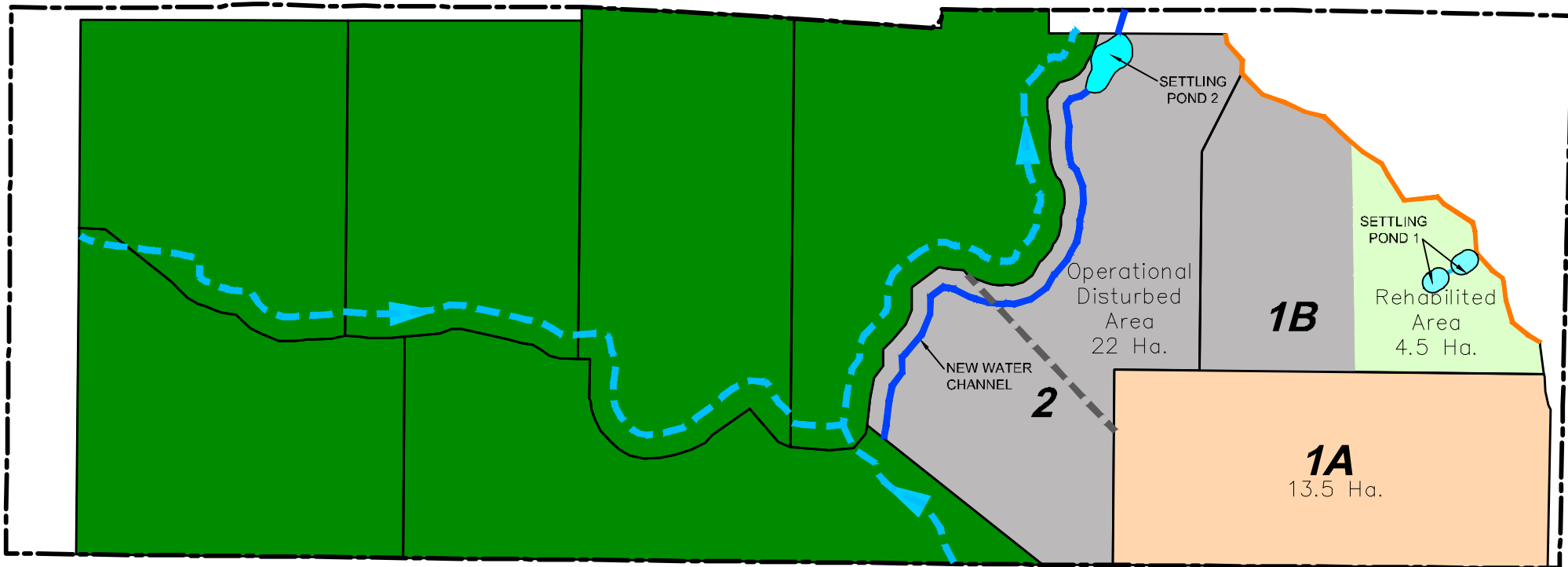
1. PROCESSING EQUIPMENT WILL BE LOCATED WITHIN THE PROCESSING/SHIPPING/RECYCLING AREA IN PHASE 1A.

PHASE 1B

1. CONSTRUCT NOISE BARRIERS ALONG THE EAST BOUNDARY OF PHASE 1B, 2 AND 4A AS SHOWN ON DETAIL E (SHEET 4 OF 8).
2. COMMENCE CLEARING, TREE REMOVAL, STRIPPING OF SOILS, THEN STOCKPILE WITHIN THE PHASE.
3. EXTRACT AND REMOVE AGGREGATE ALONG THE SOUTHERN EXTRACTION LIMIT AND PROCEED IN A NORTHERLY DIRECTION.
4. CREATE TEMPORARY MINOR DRAINAGE DITCHES WHERE NECESSARY TO CATCH PRECIPITATION AND GROUNDWATER AND DIRECT THE WATER TO SETTLING POND 1.
5. COMMENCE PROGRESSIVE REHABILITATION ONCE SUFFICIENT AGGREGATE HAS BEEN EXTRACTED.

PHASE 1B/2

1. COMMENCE CLEARING, TREE REMOVAL AND STRIPPING OF SOILS IN THE EAST PORTION OF PHASE 2.
2. USE SOILS REMOVED FROM THE EAST PORTION OF PHASE 2 TO REHABILITATE THE SOUTH PORTION OF PHASE 1B TO OPEN FIELD MEADOWS. ADDITIONAL MATERIALS SUCH AS UNMARKETABLE LIMESTONE, WOOD CHIPS AND IMPORTED CLEAN INERT FILL MAY BE REQUIRED FOR REHABILITATION.
3. FINISH REMOVAL OF AGGREGATE IN THE NORTH PORTION OF PHASE 1B AND COMMENCE REMOVAL OF AGGREGATE IN THE EAST PORTION OF PHASE 2.
4. WHEN EXTRACTION OCCURS IN THE NORTHEAST CORNER OF PHASE 1B AND THE EAST OF PORTION OF PHASE 2, DRILLING AND HAULING CANNOT OCCUR AT THE SAME TIME WITHIN THE HATCH AREA SHOWN ON DETAIL E (SHEET 4 OF 8) AS PER NOISE CONTROL RECOMMENDATIONS BY VALCOUSTICS CANADA LTD.
5. CONSTRUCT SETTLING POND 2 AND AFFILIATED SILT FENCING ALONG THE EAST BOUNDARY OF PHASE 2 TO PROTECT THE ADJACENT LANDS AND THE DOWNSTREAM PSW FROM SILTATION.
6. CONSTRUCT THE EAST PORTION OF THE NEW DRAINAGE CHANNEL IN PHASE 2.
7. CREATE TEMPORARY MINOR DRAINAGE DITCHES AS NECESSARY TO CATCH PRECIPITATION AND GROUNDWATER TO DIRECT THE WATER TO SETTLING POND 1 IN PHASE 1B AND/OR SETTLING POND 2 IN PHASE 2.



STAGE 3

PHASE 1A

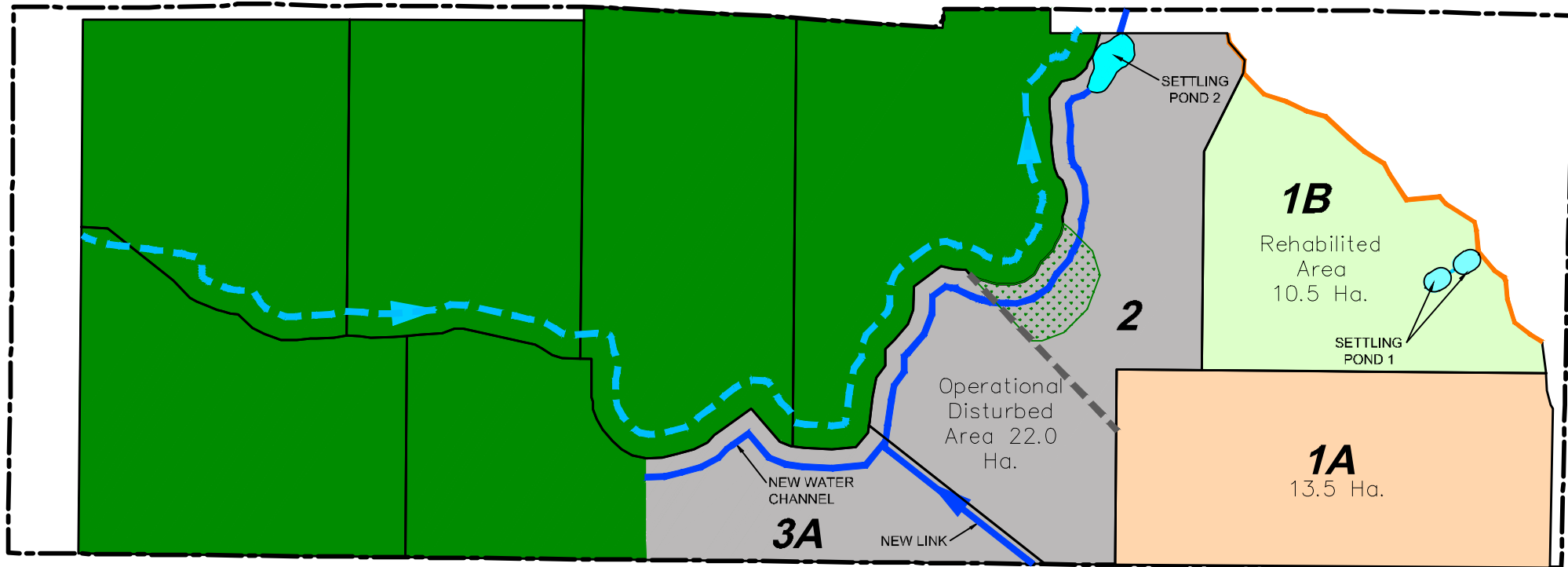
1. MAINTAIN NOISE BARRIERS CONSTRUCTED IN PHASE 1A.

PHASE 1B

1. REHABILITATION COMPLETE IN THE SOUTH PORTION OF PHASE 1B. REHABILITATION INCLUDES OPEN FIELD MEADOWS AND FOREST.

PHASE 1B/2

1. COMMENCE CLEARING, TREE REMOVAL AND STRIPPING OF SOILS IN THE WEST PORTION OF PHASE 2.
2. USE SOILS REMOVED FROM THE WEST PORTION OF PHASE 2 TO PROGRESSIVELY REHABILITATE THE NORTH SECTION OF PHASE 1B TO OPEN FIELD MEADOWS. ADDITIONAL MATERIALS SUCH AS UNMARKETABLE LIMESTONE, WOOD CHIPS AND IMPORTED CLEAN INERT FILL MAY BE REQUIRED FOR REHABILITATION.
3. PLANT TREES IN THE WEST PORTION OF PHASE 1B AS SHOWN ON THE REHABILITATION PLAN (SHEET 5 OF 8) TO BE PART OF THE NEW FOREST CONNECTIONS.
4. FINISH REMOVAL OF AGGREGATE IN THE EAST PORTION OF PHASE 2. DRILLING AND HAULING CANNOT OCCUR AT THE SAME TIME WITHIN THE HATCH AREA SHOWN ON DETAIL E (SHEET 4 OF 8) AS PER NOISE CONTROL RECOMMENDATIONS BY VALCOUSTICS CANADA LTD.
5. COMMENCE THE REMOVAL OF AGGREGATE IN THE WEST PORTION OF PHASE 2.
6. CONSTRUCT THE WEST PORTION OF THE NEW DRAINAGE CHANNEL IN PHASE 2.
7. MAINTAIN NOISE BARRIERS AS CONSTRUCTED (SEE DETAIL E ON SHEET 4 OF 8).



STAGE 4

PHASE 1A

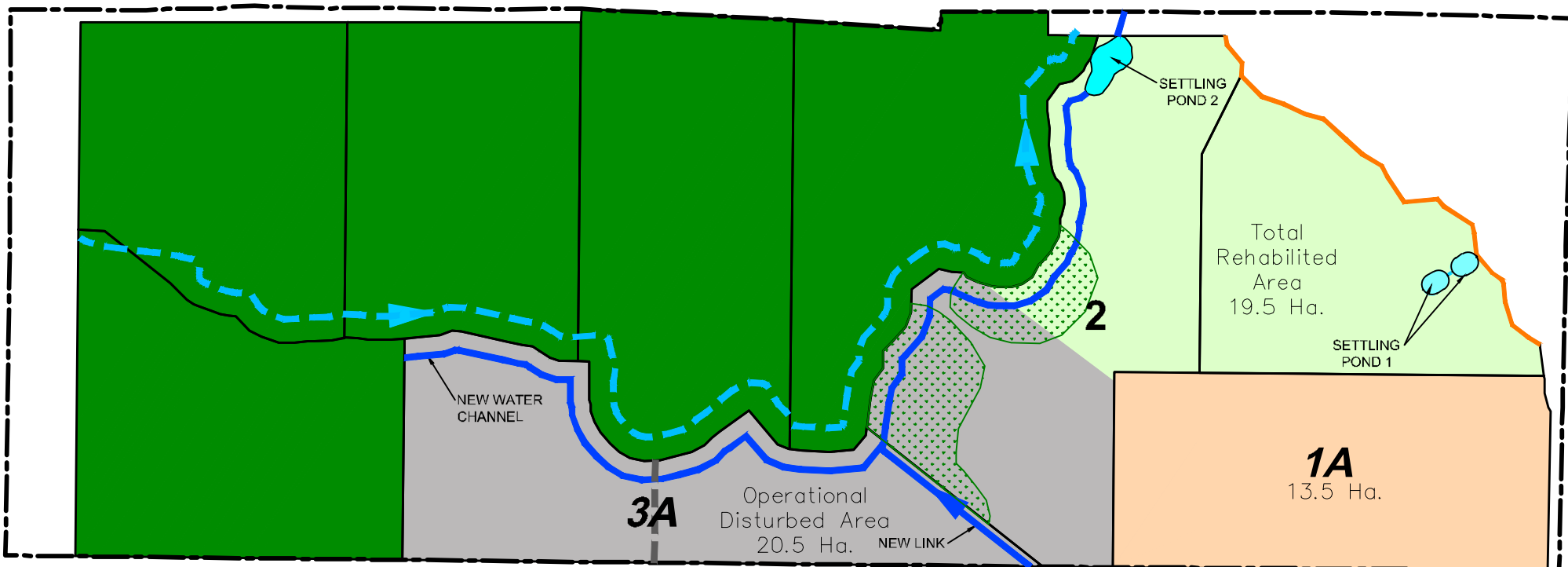
1. MAINTAIN NOISE BARRIERS CONSTRUCTED IN PHASE 1A.

PHASE 1B

1. REHABILITATION COMPLETE IN THE NORTH PORTION OF PHASE 1B. REHABILITATION INCLUDES OPEN FIELD MEADOWS AND FOREST.

PHASE 2/3A

1. COMMENCE CLEARING, TREE REMOVAL, AND STRIPPING OF SOILS IN THE SOUTH PORTION OF PHASE 3A.
2. USE SOILS REMOVED FROM THE SOUTH PORTION OF 3A TO PROGRESSIVELY REHABILITATE THE EAST PORTION OF PHASE 2 TO OPEN FIELD MEADOWS. ADDITIONAL MATERIALS SUCH AS UNMARKETABLE LIMESTONE, WOOD CHIPS AND IMPORTED CLEAN INERT FILL MAY BE REQUIRED FOR REHABILITATION.
3. CREATE NEW WETLANDS ALONG THE SOUTH SIDE OF THE NEW DRAINAGE CHANNEL IN PHASE 2.
4. FINISH REMOVAL OF AGGREGATE IN THE WEST PORTION OF PHASE 2 AND COMMENCE REMOVAL OF AGGREGATES IN THE SOUTH PORTION OF PHASE 3A.
5. CONSTRUCT THE NEW DRAINAGE CHANNEL LINK BETWEEN PHASE 2 AND PHASE 3A TO RECEIVE DISCHARGE WATER FROM THE SEVERN PINES QUARRY.
6. CONSTRUCT EQUIPMENT CROSSING OVER THE NEW DRAINAGE CHANNEL LINK TO ACCESS PHASE 3A AND PHASE 3B.
7. CONNECT THE DISCHARGE WATER FROM THE SEVERN PINES QUARRY TO THE NEW LINK AND NEW DRAINAGE CHANNEL.
8. CONSTRUCT THE NEW DRAINAGE CHANNEL THROUGH THE SOUTH PORTION OF PHASE 3A.
9. MAINTAIN NOISE BARRIERS AS CONSTRUCTED (SEE DETAIL E ON SHEET 4 OF 8).



STAGE 5

PHASE 1A

1. MAINTAIN NOISE BARRIERS CONSTRUCTED IN PHASE 1A.

PHASE 1B

1. NOISE BARRIERS CAN BE REMOVED ALONG THE EAST BOUNDARY OF PHASE 1B AS SHOWN ON DETAIL E (SHEET 4 OF 8).

PHASE 2

1. REHABILITATION COMPLETE IN THE EAST PORTION OF PHASE 2. REHABILITATION INCLUDES OPEN FIELD MEADOWS AND WETLANDS.

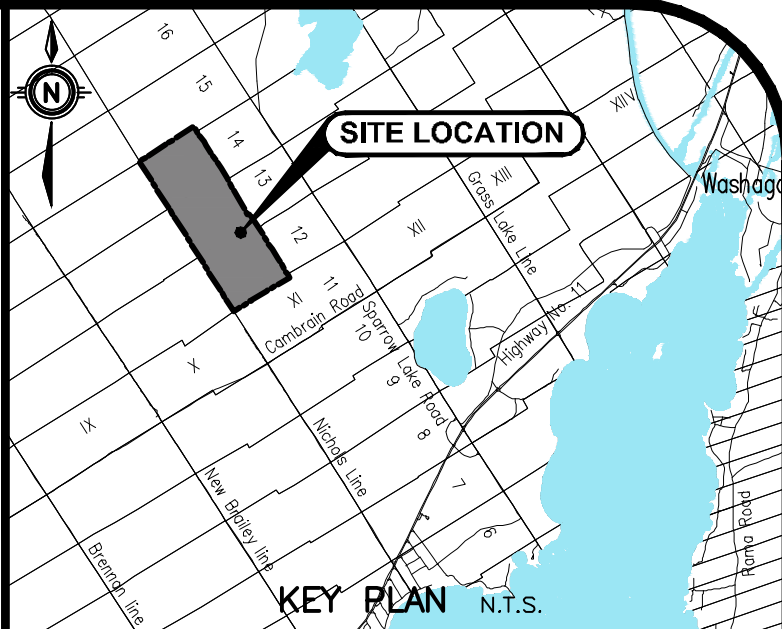
2. MAINTAIN NOISE BARRIERS CONSTRUCTED IN PHASE 2 AND 4A AS SHOWN ON DETAIL E (SHEET 4 OF 8).

PHASE 3A

1. COMMENCE CLEARING, TREE REMOVAL, AND STRIPPING OF SOILS IN THE NORTH PORTION OF PHASE 3A.
2. USE SOILS REMOVED FROM THE NORTH PORTION OF PHASE 3A TO PROGRESSIVELY REHABILITATE THE WEST PORTION OF PHASE 2 TO OPEN FIELD MEADOW AND FOREST BLOCKS AND CONTINUE TO CREATE NEW WETLANDS ALONG THE SOUTH SIDE OF THE NEW DRAINAGE CHANNEL IN PHASE 2. ADDITIONAL MATERIALS SUCH AS UNMARKETABLE LIMESTONE, WOOD CHIPS AND IMPORTED CLEAN INERT FILL MAY BE REQUIRED FOR REHABILITATION.
3. FINISH EXTRACTING AGGREGATE IN THE SOUTH PORTION OF PHASE 3A AND BEGIN EXTRACTING AGGREGATE IN THE NORTH PORTION OF PHASE 3A.
4. CONSTRUCT THE NEW DRAINAGE CHANNEL IN THE NORTH PORTION OF PHASE 3A.

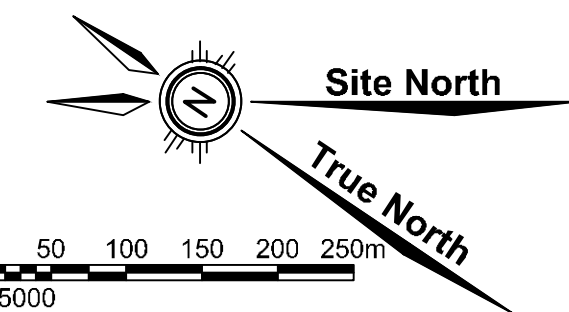
STAGES OF OPERATION NOTES - GENERAL

1. EXTRACTION WILL COMMENCE IN THE SOUTH PART OF THE SITE IN PHASE 1A AND PROCEED NORTHERLY THROUGH SUBSEQUENT PHASES. THE DISTURBED AREA FOR THE SITE WILL BE MINIMIZED USING PROGRESSIVE REHABILITATION.
2. PHASE 1A WILL BE THE DESIGNATED AREA FOR PROCESSING, SHIPPING AND RECYCLING OF AGGREGATE. THIS DISTURBED AREA WILL BE APPROXIMATELY 13.5 HECTARES AND WILL REMAIN THROUGHOUT THE LIFE OF THE QUARRY. SUCCESSIVE DISTURBED AREAS, HEREBY REFERRED TO AS 'OPERATIONAL DISTURBED AREAS', WILL BE 25 HECTARES ON AVERAGE AND WILL INCLUDE CLEARING, TREE REMOVAL, STRIPPING OF SOILS, EXTRACTION OF AGGREGATE AND AREAS UNDERGOING REHABILITATION.
3. THE MAXIMUM DEPTH OF EXTRACTION WILL FOLLOW THE TOP OF THE SHADOW LAKE FORMATION RANGING IN ELEVATION FROM 216 MASL TO 217 MASL.
4. THE REHABILITATION PLAN FOR THE SOUTH PORTION OF THE SITE WILL INCLUDE WETLANDS, FOREST BLOCKS, AND OPEN FIELD MEADOWS. THE REHABILITATION PLAN FOR THE NORTH PORTION OF THE SITE WILL INCLUDE AGRICULTURE AND FOREST BLOCKS.
5. DRAINAGE AND SILTATION CONTROLS WILL BE UTILIZED IN BOTH PORTIONS OF THE SITE TO ALLOW FOR SUCCESSFUL REHABILITATION.
6. ADDITIONAL MATERIALS SUCH AS OVERBURDEN, TOPSOIL, UNMARKETABLE LIMESTONE, AND IMPORTED CLEAN INERT FILL WILL BE REQUIRED TO SUPPLEMENT THE LACK OF SOILS PRESENT ON SITE TO ACHIEVE REHABILITATION ELEVATIONS RANGING FROM 217 MASL TO 218 MASL.
7. A 90 METER BUFFER AT THE NORTH END OF THE SITE WILL FORM PART OF THE REHABILITATION PLAN TO REDUCE THE POTENTIAL INFLUENCE TO AN OFF-SITE POND TO THE NORTH, TO PROVIDE SPACE FOR A NEW TREE NURSERY, AND THE CREATION OF A HABITAT LINKAGE BETWEEN THE NORTH INLET AND THE NEW DRAINAGE CHANNEL.
8. NOISE MITIGATION IS DESCRIBED IN THE NOTES FOR EACH STAGE OF OPERATIONS.
9. A BLASTING ATTENUATION STUDY WILL BE CARRIED OUT DURING THE FIRST 12 MONTHS OF OPERATION TO DESIGN FUTURE BLASTS. ALL BLASTS WILL BE MONITORED AS PER THE BLASTING RECOMMENDATIONS (SEE SHEET 3 OF 8).
10. INTERNAL HAUL ROADS WILL INCLUDE EQUIPMENT CROSSING OVER THE NEW DRAINAGE CHANNEL TO ALLOW ACCESS TO CERTAIN PHASES. DETAIL DESIGNS FOR EQUIPMENT CROSSINGS WILL BE APPROVED BY A PROFESSIONAL ENGINEER AND PROVIDED TO MNRF PRIOR TO EXTRACTION IN PHASES 3A, 3B, 4A THROUGH 4D.



LEGEND

- UNDISTURBED AREA
- DISTURBED AREA
- REHABILITATED COMPLETELY
- PROCESSING / SHIPPING / RECYCLING AREA
- SILTATION CONTROL POND
- NEW WETLAND
- NEW WATER CHANNEL
- EXISTING WATER COURSE
- SILT FENCE

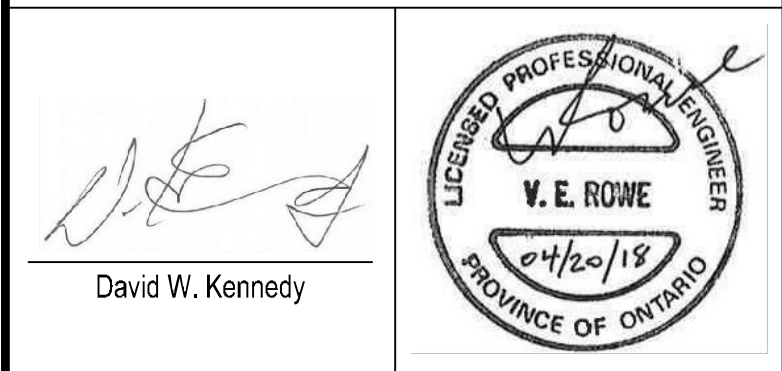


SITE PLAN AMENDMENTS

NO.	REVISION	BY	DATE



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DECLARATION OF PURPOSE
THIS SITE PLAN IS PREPARED UNDER THE AGGREGATE RESOURCES ACT FOR A CLASS 'A' LICENCE, CATEGORY 2.

PROJECT
CUMBERLAND QUARRY
LICENSEE: SEVERN AGGREGATES LIMITED
151 WHITEHALL DRIVE,
MARKHAM, ONTARIO
L3R 9T1

DRAWING
STAGES OF OPERATIONS
WEST HALF LOTS 12, 13 AND 14, CONCESSION 11
GEOGRAPHIC TOWNSHIP OF ORILLIA, NORTH DIVISION
TOWNSHIP OF SEVERN, COUNTY OF SIMCOE

Project Manager J. Flanagan	Project No. 33876-300
Design By	Checked By
Drawn By K.M. / S.X.P.	Checked By
Surveyed By	Sheet No.
Date April 24, 2018	6
Scale 1:7500	Sheet 6 of 8

150 0 150 300 450 metres
SCALE 1:7500