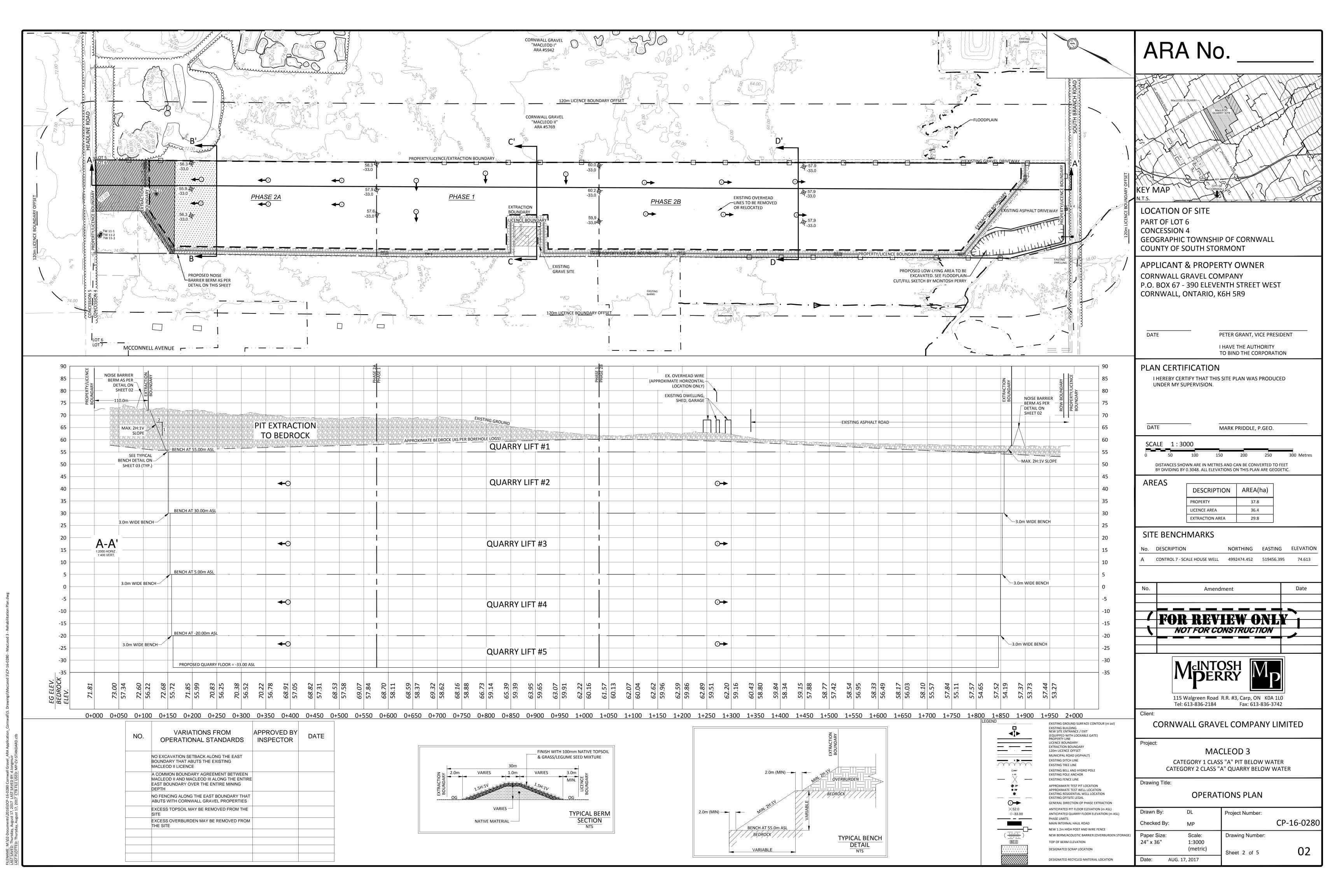


Documents\2016\0CP-16-0280 Cornwall Gravel_ARA Application_Cornwall\5. Drawings\MacLeod 3\CP-16-0280 - MacLeod 3 resday, August 02, 2017 LAST SAVED BY: d.longmuir resday, August 02, 2017 LAST SAVED BY: d.longmuir resday August 17, 2017 CTR FII F115FD: MP-CV-STANDARD rth





THERE WILL BE NO PROCESSING WITHIN 30 METRES OF THE BOUNDARY OF THE SITE. DUST WILL BE MITIGATED ON SITE AND WILL BE IN COMPLIANCE WITH M.O.E.C.C. REQUIREMENTS. WATER OR ANOTHER PROVINCIALLY APPROVED DUST SUPPRESSANT WILL BE APPLIED TO PROCESSING AREAS AS OFTEN AS REQUIRED TO MITIGATE DUST.

BERMS SHALL BE CONSTRUCTED USING ON-SITE NATIVE OVERBURDEN MATERIAL, FINISHED WITH MINIMUM 100MM OF NATIVE TOPSOIL. BERMS TO BE CONSTRUCTED TO THE HEIGHTS AND IN THE LOCATIONS SHOWN ON THE PLAN. PROPOSED BERMS WILL BE LOCATED IN THE NORTH AND WEST SETBACK. THIS BERM SHALL BE MAINTAINED AS NECESSARY DURING SITE PREPARATIONS SO AS TO PROVIDE ACOUSTICAL SHIELDING FOR NEIGHBOURING RESIDENTS, AND SHALL REMAIN FOR THE PROJECT LIFETIME.

THE EXTRACTION, PROCESSING AND SHIPMENT EQUIPMENT OPERATING IN THE PIT AND QUARRY MAY INCLUDE, BUT IS NOT LIMITED TO LOADERS, ROCK DRILLS, EXCAVATORS, BULLDOZERS, BACKHOES, SCRAPERS, PORTABLE PROCESSING EQUIPMENTS INCLUDING CRUSHING, SCREENING WASHING AND CONVEYING EQUIPMENT HAUL TRUCKS, WATER TRUCKS AND SERVICE TRUCKS FOR GENERAL OPERATIONS AND MAINTENANCE. DUST WILL BE MITIGATED ON SITE.

THE MACLEOD 3 QUARRY WILL OPERATE ON A 24 HOUR BASIS AND 7 DAYS PER WEEK. HOWEVER, LIMITATIONS ON EQUIPMENT USES IN RELATION TO THE TIME OF DAY ARE PROVIDED AS PART OF THE NOISE STUDY RECOMMENDATIONS. PLEASE REFER TO NOTE 1.2.28

CLEARING AND GRUBBING WILL BE UNDERTAKEN WHERE REQUIRED. ANY MERCHANTABLE WOOD WILL BE HARVESTED AND SOLD. STUMPS, BRANCHES AND OTHER WOODY MATERIAL MAY BE

SECTION TO RECORD SITE PLAN AMENDMENTS AND VARIATIONS FROM OPERATIONAL STANDARDS WITH APPROVAL DATES TO THIS SITE HAS BEEN INCLUDED ON EACH PLAN. VARIATIONS

IPPED AND/OR STOCKPILED ON SITE (I.E. IN BERMS) OR SOLD AS MULCH. WOOD PRODUCTS WILL BE STORED OR DISPOSED OF IN ACCORDANCE WITH MINISTRY OF ENVIRONMENT

EARTH BERMS WILL BE VEGETATED WITH NATIVE VEGETATION AND SLOPES SHALL BE SEEDED TO ENSURE ADEQUATE VEGETATION IS ESTABLISHED AND MAINTAINED.

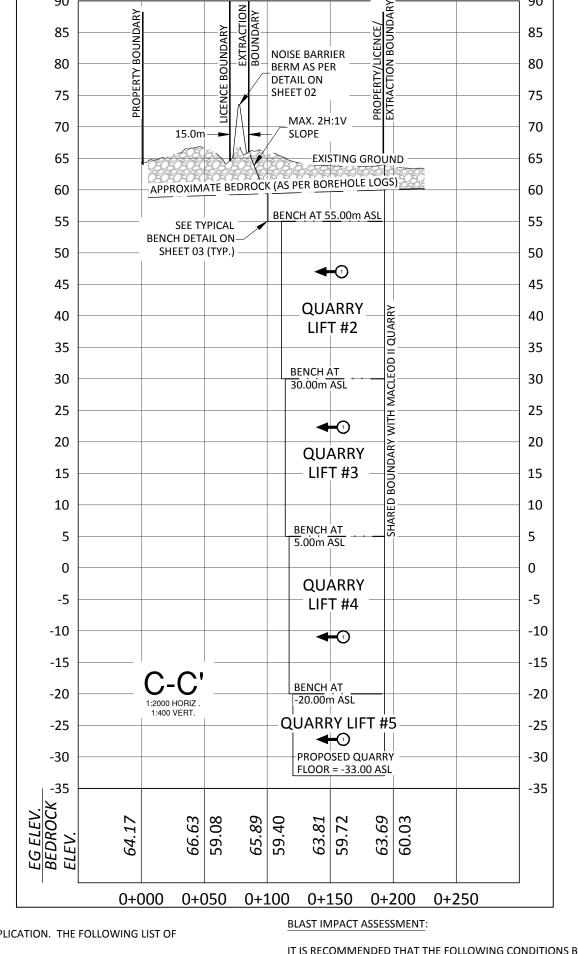
NO NEW TREE SCREENS ARE PROPOSED FOR THE SITE. A 15 M WIDE NATURALIZED AREA WILL BE LEFT ALONG HEADLINE ROAD WHERE OPERATIONS PERMIT.

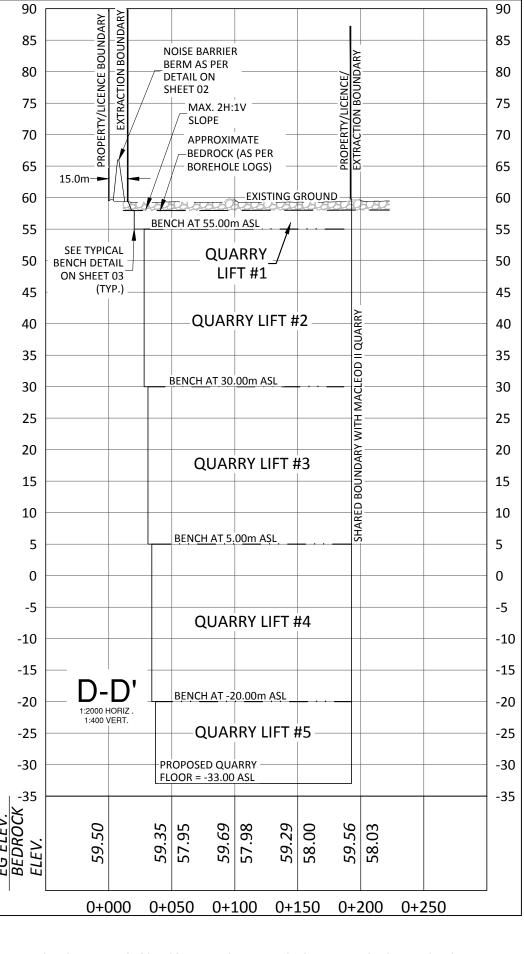
2. A COMMON BOUNDARY AGREEMENT BETWEEN MACLEOD II AND MACLEOD III ALONG THE ENTIRE EAST BOUNDARY OVER THE ENTIRE MINING DEPTH;

EGULATIONS. WITHIN THE AREA TO BÈ EXTRACTED, ÁLL TREES WITHIN 5 METRES OF THE EXCAVATION FACE MUST BE REMOVED.

1. NO EXCAVATION SETBACK ON THE EAST BOUNDARY THAT ABUTS THE EXISTING MACLEOD II LICENSE

AS PART OF THIS QUARRY DEVELOPMENT, THE FOLLOWING TECHNICAL REPORTS HAVE BEEN PREPARED:





IT IS RECOMMENDED THAT THE FOLLOWING CONDITIONS BE APPLIED FOR ALL BLASTING AT THE PROPOSED CORNWALL GRAVEL MACLEOD III NEW LICENSE APPLICATION AREA:

 ALL BLASTS SHALL BE MONITORED FOR BOTH VIBRATION AND OVERPRESSURE AT THE CLOSEST PRIVATELY OWNED RECEPTORS ADJACENT TO THE SITE, OR CLOSER, WITH A MINIMUM OF
TWO (2) DIGITAL SEISMOGRAPHS - ONE INSTALLED IN FRONT OF THE BLAST AND ONE INSTALLED BEHIND THE BLAST. MONITORING SHALL BE PERFORMED BY A COMPETENT, ACCREDITED
INDIVIDUAL WITH SPECIALIZED TRAINING IN BLASTING AND MONITORING. 2. ORIENTATION OF THE MINERAL EXTRACTION OPERATION WILL BE DESIGNED AND MAINTAINED SO THAT THE DIRECTION OF THE OVERPRESSURE PROPAGATION AND FLYROCK FROM THE FACE WILL BE AWAY FROM STRUCTURES AS MUCH AS POSSIBLE.

3. BLAST DESIGNS SHALL BE CONTINUALLY REVIEWED WITH RESPECT TO FRAGMENTATION, GROUND VIBRATION AND OVERPRESSURE. BLAST DESIGNS SHALL BE MODIFIED AS REQUIRED TO ENSURE COMPLIANCE WITH APPLICABLE GUIDELINES AND REGULATIONS. DECKING, REDUCED HOLE DIAMETERS AND SEQUENTIAL BLASTING TECHNIQUES WILL BE USED TO ENSURE MINIMAL EXPLOSIVES PER DELAY PERIOD INITIATED.

4. ONCE BLASTING PROGRESS REACHES 250M SEPARATION DISTANCE FROM ANY OFF SITE STRUCTURE OR RESIDENCE, ACCUMULATED BLAST DATA AND DESIGNS SHALL BE REVIEWED BY A QUALIFIED BLAST CONSULTANT PRIOR TO PROCEEDING CLOSER IN ORDER TO ENSURE SUITABLE PARAMETERS ARE EMPLOYED. 5. ALL BLASTS SHALL BE DESIGNED TO ENSURE COMPLIANCE WITH NPC-119 LIMITS FOR GROUND VIBRATION (12.5MM/S) AND OVERPRESSURE (128DBL).

6. CLEAR CRUSHED STONE WILL BE USED FOR STEMMING. 7. BLASTING PROCEDURES SUCH AS DRILLING AND LOADING SHALL BE REVIEWED ON A YEARLY BASIS AND MODIFIED AS REQUIRED TO ENSURE COMPLIANCE WITH INDUSTRY STANDARDS. 8. DETAILED BLAST RECORDS SHALL BE MAINTAINED. THE MOECC (1985) RECOMMENDS THAT THE BODY OF BLAST REPORTS SHOULD INCLUDE THE FOLLOWING INFORMATION:

 LOCATION, DATE AND TIME OF BLAST. DIMENSIONAL SKETCH INCLUDING PHOTOGRAPHS, IF NECESSARY, OF THE LOCATION OF THE BLASTING OPERATION, AND THE NEAREST POINT OF RECEPTION • PHYSICAL AND TOPOGRAPHICAL DESCRIPTION OF THE GROUND BETWEEN THE SOURCE AND THE RECEPTOR LOCATION.

 TYPE OF MATERIAL BEING BLASTED. SUB-SOIL CONDITIONS, IF KNOWN • PREVAILING METEOROLOGICAL CONDITIONS INCLUDING WIND SPEED IN M/S, WIND DIRECTION, AIR TEMPERATURE IN °C, RELATIVE HUMIDITY, DEGREE OF CLOUD COVER AND GROUN

 NUMBER OF DRILL HOLES PATTERN AND PITCH OF DRILL HOLES. SIZE OF HOLES.

 DEPTH OF COLLAR (OR STEMMING). DEPTH OF TOE-LOAD. WEIGHT OF CHARGE PER DELAY NUMBER AND TIME OF DELAYS.

DEPTH OF DRILLING

TRANSPORTATION BRIEF

2016 EXISTING CONDITIONS

 THE RESULT AND CALCULATED VALUE OF PEAK PRESSURE LEVEL IN DB AND PEAK PARTICLE VELOCITY IN MM/S. APPLICABLE LIMITS.

THE EXCESS, IF ANY, OVER THE PRESCRIBED LIMIT.

THE BLAST PARAMETERS DESCRIBED WITHIN THIS REPORT ARE SUPPOSED BY THE MODELING IN THE ATTACHED APPENDICES. AS THE QUARRY PROGRESSES AND AS SITE-SPECIFIC DATA IS

A TRAFFIC IMPACT STUDY HAS BEEN PREPARED BY MCINTOSH PERRY CONSULTING ENGINEERS IN SUPPORT OF THE MACLEOD III AND V PIT AND QUARRY APPLICATIONS. THE CONCLUSIONS AND

IN COMPLETING THIS TRAFFIC IMPACT STUDY FOR THE PROPOSED PIT/QUARRY OPERATIONS AT 17631 SOUTH BRANCH ROAD IN THE GEOGRAPHIC TOWNSHIP OF CORNWALL, ANALYSIS OF THE SURROUNDING ROAD NETWORK WAS COMPLETED FOR THE FOLLOWING SCENARIOS:

2021 5-YEAR HORIZON CONDITIONS (BACKGROUND AND TOTAL TRAFFIC)

2026 10-YEAR HORIZON CONDITIONS (BACKGROUND AND TOTAL TRAFFIC)

THE RESULTS OF THIS ANALYSIS INDICATES THAT THE NETWORK IS ANTICIPATED TO OPERATE AT ACCEPTABLE LEVELS OF SERVICE, HOWEVER CAPACITY AND DELAY DEFICIENCIES ARE EXPECTED TO OCCUR AT THE WESTBOUND APPROACH AT THE INTERSECTION OF HEADLINE RD & HWY 138 DURING THE PEAK HOURS FOR BOTH THE 2021 AND 2026 HORIZON YEARS. DEFICIENCIES WERE OBSERVED UNDER BACKGROUND AS WELL AS TOTAL TRAFFIC CONDITIONS, WHICH SUGGESTS THAT POOR LEVELS OF SERVICE WILL OCCUR IN THE HORIZON YEARS REGARDLESS OF SITE GENERATED TRAFFIC. THE IMPACTS OF SIGNALIZATION AND THE ADDITION OF NORTHBOUND / SOUTHBOUND LEFT TURN LANES WAS ANALYZED AND FOUND TO IMPROVI

THE INTERSECTION PERFORMANCE. AS SUCH, MCINTOSH PERRY RECOMMENDS THAT TRAFFIC VOLUMES AND PERFORMANCE AT THE INTERSECTION OF HEADLINE RD. & HWY 138 BE MONITOR IN THE FUTURE AND THAT CONSIDERATION BE GIVEN TO SIGNALIZATION. THE EXISTING SITE ACCESSES ARE BOTH ANTICIPATED TO OPERATE AT HIGH LEVELS OF SERVICE FOR ALL CONDITIONS THROUGH TO THE 10-YEAR HORIZON YEAR 2026. SIMILARLY, BOTH SIGNALIZED INTERSECTIONS IN PROXIMITY TO THE SUBJECT SITE ARE ANTICIPATED TO OPERATE AT OVERALL ACCEPTABLE LEVELS OF SERVICE UNDER ANTICIPATED TOTAL FUTURE TRAFFIC CONDITIONS. LEFT-TURN AND SIGNALIZATION WARRANTS WERE CONSIDERED FOR THE SITE ENTRANCES AND IT HAS BEEN DETERMINED THAT NEITHER IS WARRANTED. AS SUCH, NO ROADWAY

MODIFICATIONS ARE RECOMMENDED AS A RESULT OF THE PROPOSED PIT/QUARRY DEVELOPMENT.

PLANNING RATIONALE

- 1. THE PROPOSED USE IS CONSISTENT WITH THE PPS (2014) WITH REGARD TO MATTERS OF PROVINCIAL INTEREST, INCLUDING LAND USE COMPATIBILITY, LONG-TERM ECONOMIC PROSPERITY, NATURAL HERITAGE, WATER IMPACTS, MINERAL AGGREGATE RESOURCES, AND CULTURAL HERITAGE;
- 2. ADEQUATE JUSTIFICATION HAS BEEN PROVIDED FOR THE PROPOSED REDESIGNATION OF THE SUBJECT LANDS IN THE COUNTY'S OFFICIAL PLAN FROM EXTRACTIVE RESOURCE LANDS MINERAL AGGREGATE RESERVE) TO EXTRACTIVE RESOURCE LANDS (LICENSED PIT AND QUARRY) THROUGH TECHNICAL STUDIES THAT ADDRESS ENVIRONMENTAL AND LAND USE
- 3. MACLEOD III LANDS ARE CURRENTLY ZONED MINERAL EXTRACTION, RESERVE SPECIAL EXCEPTION TWO (MXR-2) AND FLOOD PLAIN, AND MACLEOD V LANDS ARE ZONED MINERAL
- 4. BOTH MACLEOD III AND V LANDS ARE PROPOSED TO BE REZONED MINERAL AGGREGATE EXTRACTIVE QUARRY SPECIAL EXCEPTION @ (MXQ-@), INCLUDING A SMALL AREA OF FLOOD PLAIN ON MACLEOD III THAT WILL BE REZONED TO RECOGNIZE MORE CURRENT FLOOD RISK MAPPING, AND TO MORE ACCURATELY DELINEATE THE LIMITS OF A CEMETERY;
- 5. SPECIAL EXCEPTION MXQ-@ ZONE WILL APPLY UNIQUE SETBACKS TO PROVIDE ADEQUATE SEPARATION DISTANCES FROM NEARBY SENSITIVE LAND USES, NOTWITHSTANDING APPLICAB GENERAL PROVISIONS TO THE CONTRARY;

6. PROVIDED RECOMMENDED MITIGATIVE MEASURES AND CONTROLS ARE INCORPORATED INTO LAND USE PLANNING MECHANISMS AND MNRF LICENSING REQUIREMENTS, THE PROPOSED OFFICIAL PLAN AND ZONING BY-LAW AMENDMENTS ARE CONSISTENT WITH MATTERS OF PROVINCIAL INTEREST AND SATISFY THE INTENT AND PURPOSE OF THE OFFICIAL PLAN FOR THE COUNTY OF STORMONT, DUNDAS AND GLENGARRY.

CORNWALL GRAVEL COMPANY P.O. BOX 67 - 390 ELEVENTH STREET WEST CORNWALL, ONTARIO, K6H 5R9

I HAVE THE AUTHORITY TO BIND THE CORPORATION

PETER GRANT, VICE PRESIDENT

PLAN CERTIFICATION I HEREBY CERTIFY THAT THIS SITE PLAN WAS PRODUCED

UNDER MY SUPERVISION.

GEOGRAPHIC TOWNSHIP OF CORNWALL

APPLICANT & PROPERTY OWNER

COUNTY OF SOUTH STORMONT

ARA No.

LOCATION OF SITE

PART OF LOT 6 CONCESSION 4

DATE MARK PRIDDLE, P.GEO.

SCALE 1:3000

DISTANCES SHOWN ARE IN METRES AND CAN BE CONVERTED TO FEET

BY DIVIDING BY 0.3048. ALL ELEVATIONS ON THIS PLAN ARE GEODETIC.

AREAS DESCRIPTION | AREA(ha)

PROPERTY 37.8 LICENCE AREA 36.4

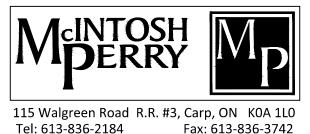
EXTRACTION AREA 29.8

SITE BENCHMARKS

NORTHING EASTING ELEVATION No. DESCRIPTION 4992474.452 519456.395 CONTROL 7 - SCALE HOUSE WELL

Date Amendment NOT FOR CONSTRUCTION





CORNWALL GRAVEL COMPANY LIMITED

Project:

Client:

MACLEOD 3

CATEGORY 1 CLASS "A" PIT BELOW WATER CATEGORY 2 CLASS "A" QUARRY BELOW WATER

Drawing Title: **OPERATIONS SECTIONS**

Drawn By: Project Number: CP-16-028 Checked By: MP Paper Size: Scale **Drawing Number** 24" x 36" 1:3000 (metric) Sheet 3 of 6 AUG. 17, 2017 Date:

NATURAL ENVIRONMENT REPORT LEVEL 1: A LEVEL 1 & 2 NATURAL ENVIRONMENT REPORT WAS PREPARED BY MCINTOSH PERRY CONSULTING ENGINEERS IN SUPPORT OF THIS APPLICATION. THE FOLLOWING LIST OF RECOMMENDATIONS HAS BEEN PROVIDED BASED ON THE FINDINGS OF THE REPORT:

1. ALL SETBACK AREAS SHOULD BE ALLOWED TO NATURALLY REGENERATE WITH VEGETATION WHERE POSSIBLE;

BERM AS PER DETAIL ON

SHEET 02

MAX. 2H:1V

-15

-25

-35

SLOPE

SEE TYPICAL

BENCH DETAIL ON—

SHEET 03 (TYP.)

EXISTING GROUND

BENCH AT 55.00m ASL

BENCH AT 30.00m ASL

BENCH AT 5.00m AS

APPROXIMATE BEDROCK (AS PER BOREHOLE LOGS)

QUARRY

QUARRY LIFT #2

QUARRY LIFT #3

QUARRY LIFT #4

QUARRY LIFT #5 -

0+000 0+050 0+100 0+150 0+200 0+250

BENCH AT -20.00m ASL

PROPOSED QUARRY

FLOOR = -33.00 ASL

1:2000 HORIZ 1:400 VERT.

LIFT #1

2. NO FURTHER REMOVAL OF EXISTING SIGNIFICANT WOODLANDS OR WETLAND AREAS SHOULD OCCUR. IF FURTHER REMOVAL OF WOODY VEGETATION FROM SIGNIFICANT WOODLANDS OR REMOVAL OF WETLAND AREAS BE REQUIRED, AN ADDITIONAL IMPACT ASSESSMENT SHOULD BE COMPLETED TO DEMONSTRATE THE WORK WILL NOT IMPACT THE FEATURE OR THAT SUFFICIENT MITIGATION CAN BE IMPLEMENTED TO PREVENT ADVERSE IMPACTS TO THE NATURAL FUNCTION OF THE FEATURE; . ACOUSTIC SURVEYS MUST BE COMPLETED PRIOR TO VEGETATION REMOVAL WITHIN REMAINING WOODED AREAS PRIOR TO ANY SITE ALTERATION WITHIN THE TREED AREAS TO

DETERMINE IF SPECIES AT RISK BATS ARE PRESENT WITHIN SUITABLE HABITAT 4. GIVEN THE LONG TIME FRAME OF QUARRY DEVELOPMENT, LEGISLATIVE REQUIREMENTS PERTAINING TO SPECIES AT RISK AND THEIR HABITAT MUST BE ADHERED TO THROUGH THE LIFESPAN OF THE QUARRY;

5. SHOULD DE-WATERING ACTIVITIES OF THE FUTURE QUARRY DEVELOPMENT DISCHARGE WATER TO THE EASTMAN DRAIN AT A DIFFERENT LOCATION THAN IS CURRENTLY APPROVED, IT IS RECOMMENDED THAT IMPACTS TO FISH AND FISH HABITAT BE ASSESSED AT THAT TIME FOLLOWING CURRENT LEGISLATIVE REQUIREMENTS, AND;

6. ANY ACTIVITY THAT OCCURS WITHIN 30M OF TOP OF BANK MUST ENSURE THAT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED PRIOR TO WORK

A LEVEL 1 & 2 HYDROGEOLOGICAL REPORT WAS PREPARED BY MCINTOSH PERRY CONSULTING ENGINEERS IN SUPPORT OF THE MACLEOD III AND V PIT AND QUARRY APPLICATIONS. THE REPORT

THIS ASSESSMENT SHOWS THAT A PIT CAN BE DEVELOPED UNDER THE FOLLOWING CONDITIONS • IT IS DEVELOPED, OPERATED, AND REHABILITATED AS PER THESE PLANS.

 A 200M SEPARATION EXISTS BETWEEN THE EXTRACTION AREA AND PERMANENT WATER BODIES. NO CONSUMPTIVE WATER TAKING OR TRANSFER OCCURS WITHOUT A VALID PERMIT TO TAKE WATER.

THE FOLLOWING ACTIONS ARE RECOMMENDED TO ENSURE ONGOING COMPLIANCE SHOULD THE SITE BE DEVELOPED: SEMI-ANNUAL WATER LEVEL MONITORING IS TO BE CONDUCTED AT ALL ACCESSIBLE BEDROCK MONITORING WELLS ON SITE.

• DISCHARGE FROM THE QUARRY SUMP SHOULD CONTINUE TO BE DIRECTED TO THE DRAINAGE DITCH ALONG THE WESTERN QUARRY FACE, IN COMPLIANCE WITH THE TERMS OF THE

RE-EVALUATION OF THE SURROUNDING DOMESTIC WATER SUPPLY WELL NETWORK SHOULD BE COMPLETED IAT LEAST ONE (1) YEAR PRIOR TO EXTRACTION BEGINNING AT MACLEOD V, WITH A DOOR-TO-DOOR DOMESTIC WATER WELL SURVEY COMPLETED AT ALL WELLS CONSIDERED BY A QUALIFIED PROFESSIONAL TO HAVE THE POTENTIAL TO BE IMPACTED BY EXTRACTION.

IN ORDER TO PROTECT GROUNDWATER: • THERE WILL BE NO STORAGE OF LIQUID FUELS AT THE SITE WITHIN 30M OF A WATER BODY.

MOBILE EQUIPMENT WILL BE SERVICED OFF-SITE OR IN DESIGNATED SHOP AREAS ON SITE. NO SERVICING OF MOBILE EQUIPMENT WILL OCCUR IN THE EXTRACTION AREA, WHERE

 ALL PETROLEUM WASTE LIQUIDS GENERATED ON-SITE WILL BE COLLECTED AND TRANSPORTED OFF-SITE BY A LICENSED LIQUID WASTE TRANSPORTATION AND DISPOSAL CONTRACTOR. THE IMMEDIATE REPORTING OF ANY FUEL AND LUBRICANT SPILLS TO THE MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE IS MANDATORY

THE DATA ARE TO BE REVIEWED ANNUALLY BY A QUALIFIED PROFESSIONAL (P.GEO. OR P.ENG.) TO ASSESS POSSIBLE IMPACTS TO THE GROUNDWATER/SURFACE WATER REGIME. WATER SUPPLY AND/OR MONITORING WELLS WITHIN THE EXTRACTION AREA ARE TO BE ABANDONED AS PER O.REG. 903 WHEN EXTRACTION AT THE WATER TABLE OCCURS WITHIN 15M OF THEM, OR THEY OTHÉRWISE INTERFERE WITH AGGREGATE EXTRACTION. ARCHAEOLOGICAL ASSESSMENT STAGE 1 AND 2:

A STAGE 1 & 2 ARCHAEOLOGICAL ASSESSMENT WAS CONDUCTED BY HERITAGE QUEST INC. DATED OCTOBER 27, 2000. THE RECOMMENDATIONS OF THIS STUDY ARE AS FOLLOWS:

1. NO FURTHER ARCHAEOLOGICAL ASSESSMENT OF OTHER ARES OF THE PROPERTY IS REQUIRED. 2. THE CAMERON CEMETERY, AS DEFINED IN THE PRESENT STUDY SHOULD BE PRESERVED FROM ANY DISTURBANCE. IN ADDITION, PUBLIC ACCESS TO THE CEMETERY FROM EITHER SOUTH

BRANCH ROAD OR HEADLINE ROAD SHOULD BE MAINTAINED. AS THE TOWNSHIP OF SOUTH STORMONT IS RESPONSIBLE FOR MAINTAINING THE CEMETERY, THEY SHOULD BE CONSULTED CONCERNING APPROPRIATE ACCESS TO THE CEMETERY.

3. SHOULD DEEPLY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING SOIL STRIPPING, THE MINISTRY OF CITIZENSHIP, CULTURE, AND RECREATION (NOW KNOWN

AS THE MINISTRY OF MINISTRY, TOURISM, CULTURE, AND SPORT) SHOULD BE NOTIFIED IMMEDIATELY.

NOISE IMPACT STUDY:

1. HOURS OF OPERATION SHALL BE AS FOLLOWS:

 LOADING AND TRANSPORT ONLY (TO MACLEOD I): 7:00 TO 7:00 (24 HOURS), MONDAY TO SUNDAY FULL OPERATION - EXTRACTION, PROCESSING, ROCK DRILLING, LOADING AND TRANSPORT: 7:00 TO 19:00, MONDAY TO SUNDAY

2. THE EXTRACTION, PROCESSING AND TRANSPORT EQUIPMENT OPERATING SIMULTANEOUSLY IN BOTH THE MACLEOD III AND V QUARRIES SHALL BE LIMITED TO:

ONE (1) ROCK DRILL

TWO (2) EXTRACTION LOADERS

TWO (2) SHIPMENT/ASPHALT PLANT LOADERS

REFERENCE SOUND PRESSURE LEVELS OF AGGREGATE PIT AND

PORTABLE ASPHALT PLANT

4. THE SOUND EMISSIONS OF ALL CONSTRUCTION EQUIPMENT INVOLVED IN SITE PREPARATION AND REHABILITATION ACTIVITIES SHALL COMPLY WITH THE SOUND LIMITS SPECIFIED IN MOECC PUBLICATION NPC-115 "CONSTRUCTION EQUIPMENT".

5. NEW EQUIPMENT TECHNOLOGY OR DIFFERENT CONFIGURATIONS MAY ALLOW PROPOSED CHANGES TO ANY PORTION OF THE EXTRACTION AND PROCESSING OPERATIONS INCLUDING

6. THE QUARRY FLOOR SHALL HAVE AN ELEVATION OF 52M ASL OR LOWER.

8. PERIMIETER BERMS SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS. THE MINIMUM REQUIRED TOP-OF-BERM ELEVATIONS ARE SPECIFIED. BERM E SHALL BE CONSTRUCTED PRIOR TO PHASE 2A. BERM F, BERM G, AND BERM H SHALL BE CONSTRUCTED PRIOR TO PHASE 2B. ONCE CONSTRUCTED, THE BERMS SHALL REMAIN IN PLACE FOR THE PROJECT LIFETIME 9. OPERATION OF THE PORTABLE ASPHALT PLANT IN THE MACLEOD 3 LANDS ABOVE AN ELEVATION OF 30 M ASL IS PROHIBITED

DRILL) SHALL REMAIN ON THE QUARRY FLOOR WITHIN 60 M OF THE WORKING FACE. 11. DURING THE FIRST LIFT OF OPERATIONS WITHIN PHASE 2A, THE PORTABLE PROCESSING PLANT SHALL NOT OPERATE WHEN THE ROCK DRILL IS OPERATING WITHIN 200 M OF THE NORTH

12.DURING THE FIRST LIFT OF OPERATIONS WITHIN PHASE 2B, THE PORTABLE PROCESSING PLANT SHALL NOT OPERATE WHEN THE ROCK DRILL IS OPERATING WITHIN 450 M OF THE SOUTH

COMMENDATIONS HAS BEEN PROVIDED BASED ON THE FINDINGS OF THE REPORT: . ALL SETBACK AREAS SHOULD BE ALLOWED TO NATURALLY REGENERATE WITH VEGETATION WHERE POSSIBLE; 2. NO FURTHER REMOVAL OF EXISTING SIGNIFICANT WOODLANDS OR WETLAND AREAS SHOULD OCCUR. IF FURTHER REMOVAL OF WOODLY VEGETATION FROM SIGNIFICANT WOODLANDS OR REMOVAL OF WETLAND AREAS BE REQUIRED, AN ADDITIONAL IMPACT ASSESSMENT SHOULD BE COMPLETED TO DEMONSTRATE THE WORK WILL NOT IMPACT THE FEATURE OR THAT SUFFICIENT MITIGATION CAN BE IMPLEMENTED TO PREVENT ADVERSE IMPACTS TO THE NATURAL FUNCTION OF THE FEATURE;

3. ACOUSTIC SURVEYS MUST BE COMPLETED PRIOR TO VEGETATION REMOVAL WITHIN REMAINING WOODED AREAS PRIOR TO ANY SITE ALTERATION WITHIN THE TREED AREAS TO DETERMINE IF SPECIES AT RISK BATS ARE PRESENT WITHIN SUITABLE HABITAT;

5. ANY ACTIVITY THAT OCCURS WITHIN 30M OF TOP OF BANK MUST ENSURE THAT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED PRIOR TO WORK COMMENCING AND MAINTAINED UNTIL WORK IS COMPLETED

 ONE (1) PORTABLE PROCESSING PLANT ONE (1) PORTABLE ASPHALT PLANT

• 20 OFF-ROAD TRUCK TRIPS/HOUR (40 PASSES/HOUR)

3. THE AGGREGATE QUARRY EQUIPMENT SHALL SATISFY THE NOISE EMISSION LEVELS LISTED BELOW:

ADDITIONAL EQUIPMENT TO OPERATE ON THE SITE, EQUIPMENT TO BE SUBSTITUTED, AND/OR DIFFERENT BERM HEIGHTS, WHILE STILL MEETING THE APPLICABLE SOUND LEVEL LIMITS. CHANGES MAY BE PERMITTED TO THE SITE OPERATIONS AND NOISE CONTROLS PROVIDED THAT THE CHANGES STILL MEET THE SOUND LEVEL LIMITS, AS CONFIRMED THROUGH DOCUMENTATION PREPARED BY A PROFESSIONAL ENGINEER SPECIALIZING IN NOISE CONTROL. PRIOR TO ANY MODIFICATION, NOTIFICATION SHALL BE GIVEN TO THE MNRF.

7. THE PHASING ORDER AND DIRECTION OF EXTRACTION SHALL BE AS INDICATED ON THE PLANS.

10. THE FIRST BENCH WORKING FACE SHALL HAVE A MINIMUM HEIGHT OF 15 M FROM THE QUARRY FLOOR. DURING THE FIRST LIFT, ALL EQUIPMENT (WITH THE EXCEPTION OF THE ROCK

4. GIVEN THE LONG TIME FRAME OF QUARRY DEVELOPMENT, LEGISLATIVE REQUIREMENTS PERTAINING TO SPECIES AT RISK AND THEIR HABITAT MUST BE ADHERED TO THROUGH THE LIFESPAN OF THE QUARRY; 5. SHOULD DE-WATERING ACTIVITIES OF THE FUTURE QUARRY DEVELOPMENT DISCHARGE WATER TO THE EASTMAN DRAIN AT A DIFFERENT LOCATION THAN IS CURRENTLY APPROVED, IT IS RECOMMENDED THAT IMPACTS TO FISH AND FISH HABITAT BE ASSESSED AT THAT TIME FOLLOWING CURRENT LEGISLATIVE REQUIREMENTS, AND;

LEVEL 1 & 2 NATURAL ENVIRONMENT REPORT WAS PREPARED BY MCINTOSH PERRY CONSULTING ENGINEERS IN SUPPORT OF THIS APPLICATION. THE FOLLOWING LIST OF

13.DURING THE FIRST LIFT OF OPERATIONS WITHIN PHASE 2B, THE PORTABLE PROCESSING PLANT SHALL NOT OPERATE WITHIN 450 M OF THE SOUTH EXTRACTION LIMIT. ONCE THE WORKING FACE HAS PROGRESSED 60 M PAST WHERE THE PLANT MAY OPERATE, A LOCAL ACOUSTIC BARRIER WITH A MINIMUM HEIGHT OF 8 M SHALL BE LOCATED BETWEEN THE PROCESSING EQUIPMENT AND RECEPTORS R33 TO R36 (RESIDENTIAL DWELLINGS ALONG THE NORTH SIDE OF SOUTH BRANCH ROAD), AND BE WITHIN 60 M OF THE PLANT EQUIPMENT. THIS LOCAL ACOUSTIC BARRIER REQUIREMENT MAY BE SATISFIED WITH STOCKPILES MAINTAINING THE MINIMUM HEIGHT REQUIREMENT.

3. EXCESS TOPSOIL CAN BE REMOVED FROM SITE: 5. NO FENCING ALONG THE COMMON BOUNDARY 2.26 FREQUENCY AND TIMING OF BLASTS THE ERFOLIENCY OF BLASTING WILL BE DICTATED BY THE OPERATORS NEEDS. BLASTING WILL BE PERFORMED IN ACCORDANCE WITH THE MOECC REGULATIONS AND GUIDELINES IN REGARDS TO DISE AND VIBRATION. THE BLASTING CONTRACTOR WILL MONITOR THE NOISE AND VIBRATION (AIR AND GROUND) LEVELS AT ALL TIMES DURING BLASTING. PROPER RECORD KEPING SHALL BE ONDUCTED AND MADE AVAILABLE FOR REVIEW BY MNRF UPON REQUEST. IN ACCORDANCE WITH OPERATIONAL STANDARDS, NO BLASTING WILL OCCUR AT THIS SITE ON A HOLIDAY OR TWEEN 6 PM AND 8 AM ON THE FOLLOWING DAY. PLEASE REFER TO RECOMMENDATIONS PROVIDED AS PART OF THE BLASTING IMPACT ANALYSIS PREPARED IN SUPPORT OF THIS APPLICATION; NOTE 1.2.28.

1.2.19 BERM VEGETATION AND MAINTENANCE

1.2.21 PROPOSED TREE SCREENS

2.24 LOCATION OF CROSS-SECTIONS

1.2.25 VARIATIONS FROM OPERATIONAL STANDARDS

4. EXCESS OVERBURDEN CAN BE REMOVED FROM SITE.

LEVEL 1 & 2 HYDROGEOLOGICAL REPORT - MCINTOSH PERRY

TRAFFIC IMPACT STUDY - MCINTOSH PERRY

BLASTING IMPACT ANALYSIS - EXPLOTECH

NOISE IMPACT STUDY - AERCOUSTICS

LEVEL 1 & 2 NATURAL ENVIRONMENT REPORT - MCINTOSH PERRY

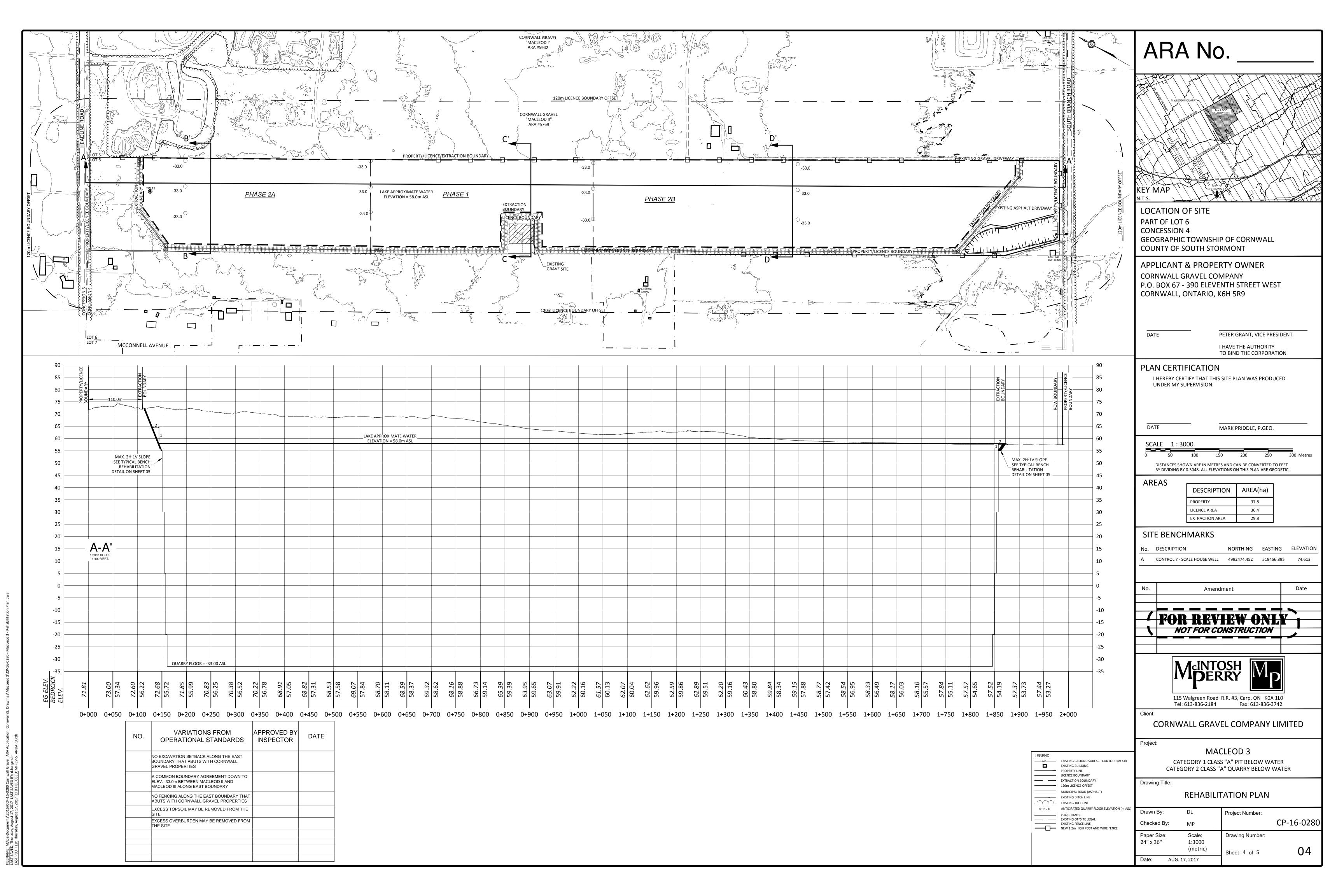
• ARCHAEOLOGICAL ASSESSMENT, STAGES 1 AND 2 - HERITAGE QUEST INC.

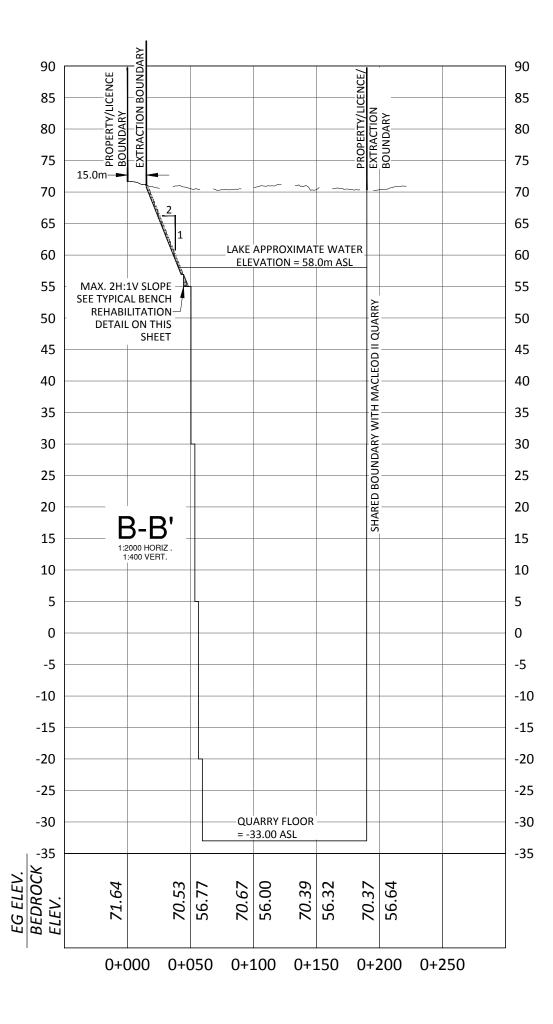
• PLANNING RATIONALE - MACLEOD III AND V QUARRIES - MCINTOSH PERRY

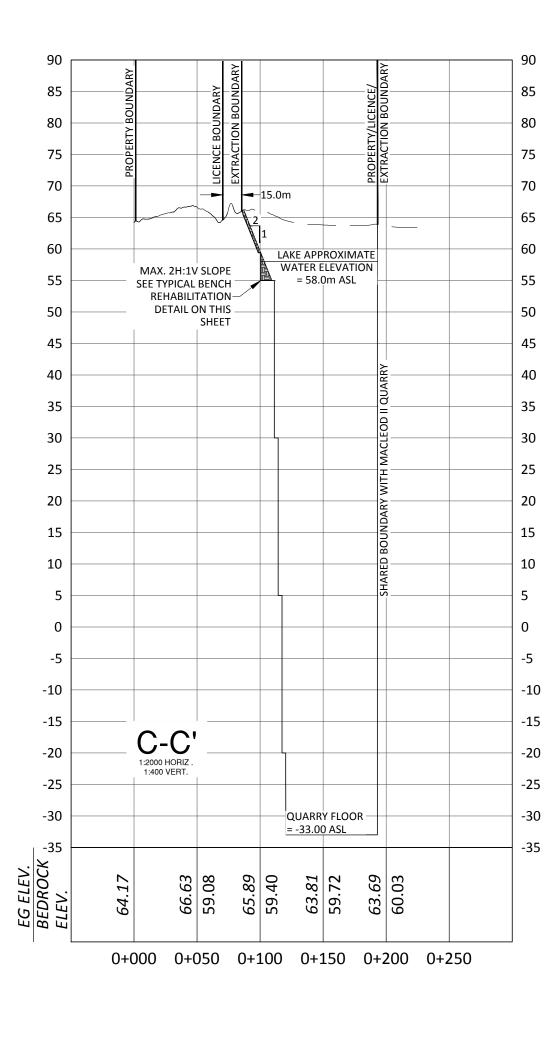
ICLUDED IN THE LICENSE APPLICATION INCLUDE:

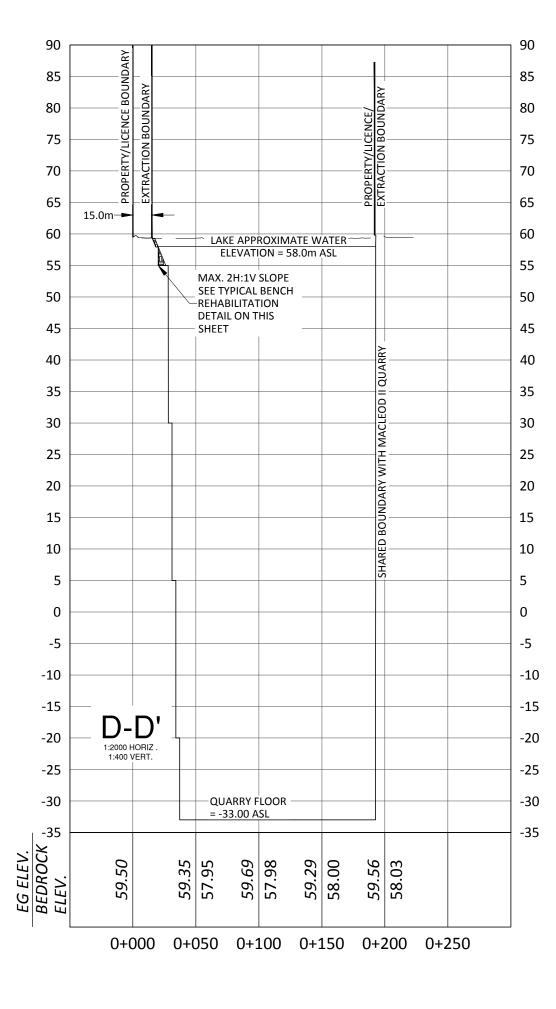
THE LOCATION OF THE FOUR (4) CROSS-SECTIONS ARE SHOWN ON THE PLAN.

2.27 MAXIMUM ANNUAL TONNAGE THE MAXIMUM AMOUNT OF AGGREGATE TO BE REMOVED FROM THE SITE IN ANY CALENDAR YEAR IS NOT TO EXCEED 3,400,000 TONNES. 1.2.28 RECOMMENDATIONS:









REHABILITATION NOTES

REHABILITATION PLAN WAS PREPARED IN ACCORDANCE WITH THE 'AGGREGATE RESOURCES OF ONTARIO, PROVINCIAL STANDARDS VERSION 1.0' USING THE SITE PLAN STANDARDS FOR A CATEGORY 1, BELOW GROUNDWATER EXTRACTION OF PIT OPERATIONS, AND A CATEGORY 2, BELOW GROUNDWATER EXTRACTION OF PIT OPERATIONS.

1.3.1 SEQUENCE AND DIRECTION OF PROGRESSIVE REHABILITATION PROGRESSIVE REHABILITATION WILL FOLLOW THE DIRECTION/PHASING OF OPERATIONS, AND WILL BE CONDUCTED AS FOLLOWS:

PROGRESSIVE REHABILITATION WILL CONSIST OF BACKFILLING AND SLOPING TO THE BENCH CONSTRUCTED AT ELEV. 55 M AROUND THE PERIMETER OF THE EXTRACTION AREA. THE BENCH WILL BE BACKFILLED USING NATIVE OVERBURDEN STOCKPILED WITHIN THE LICENSED AREA. PROGRESSIVE REHABILITATION OF THE FIRST LIFT WILL START DURING THE MINING OF THE SECOND LIFT AND WILL BE IN A NORTH TO SOUTH DIRECTION FOLLOWING THE PROGRESSION OF THE MINING. THE SEQUENCE AND DIRECTION OF THE PROGRESSIVE REHABILITATION (FIRST LIFT) IS INDICATED ON THE PLAN BY ARROWS.

1.3.2 USE OF OVERBURDEN IN PROGRESSIVE REHABILITATION
AS PART OF THE OPERATIONAL PLANS, SUFFICIENT AMOUNT OF NATIVE OVERBURDEN AND NATIVE TOPSOIL WILL HAVE BEEN STORED IN STOCKPILES/BERMS IN

ORDER TO REHABILITATE THE SITE (REFER TO NOTE 1.2.2). SIDE SLOPES WILL BE CREATED USING NATIVE OVERBURDEN FROM THE SITE TO PROVIDE A MAXIMUM SLOPE OF 2(H):1(V) TO 55 M ASL. A MINIMUM OF 100MM OF NATIVE TOPSOIL SHALL COVER THE OVERBURDEN ON THE GRADED SIDE SLOPES.

1.3.3 VEGETATION TO BE ESTABLISHED DURING PROGRESSIVE REHABILITATION
DURING PROGRESSIVE REHABILITATION, SLOPES WILL BE SEEDED USING A LEGUIME PASTURE FIELD MIX TO AID WITH THE IMMEDIATE VEGETATION PROCESS. SEED
SHALL BE APPLIED AS RECOMMENDED BY THE SUPPLIER. AFTERWARDS THE SLOPES SHALL BE LEFT TO REGENERATE NATURALLY WITH LOCAL VEGETATION SPECIES.
VEGETATED SLOPES WILL BE MONITORED TO ENSURE SLOPE EROSION IS MINIMIZED.

DURING QUARRY EXTRACTION AGGREGATE MAY BE EXCAVATED IN VERTICAL LIFTS AS NOTED ON THE QUARRY OPERATIONS PLAN. REHABILITATION OF THE

1.3.5 PROGRESSIVE REHABILITATION IN RELATION TO THE OPERATION SEQUENCE
THE PERIMETER OF THE EXTRACTION AREA WILL BE PROGRESSIVELY REHABILITATED ONCE THE AREA HAS BEEN DEPLETED OF MARKETABLE AGGREGATE MATERIALS
AND ENOUGH AREA IS AVAILABLE TO ENSURE THAT REHABILITATION ACTIVITIES WILL NOT INTERFERE WITH THE OPERATION.

1.3.6 PROPOSED IMPORTATION OF MATERIAL TO FACILITATE REHABILITATION NO IMPORTATION OF TOPSOIL FOR REHABILITATION PURPOSES IS ANTICIPATED

FINAL REHABILITATION NOTES

1.4.1 PROPOSED IMPORTATION OF MATERIAL TO FACILITATE REHABILITATION NO IMPORTATION OF TOPSOIL FOR REHABILITATION PURPOSES IS ANTICIPATED.

1.4.2 HOW THE FINAL SLOPES WILL BE ESTABLISHED ON ALL EXCAVATION FACES AND THE QUARRY FLOOR FINAL QUARRY SLOPES WILL BE A MAXIMUM OF 2(H):1(V) ALONG THE ENTIRE NORTHERN, WESTERN AND SOUTHERN BOUNDARY OF THE SITE. NO REHABILITATION WILL OCCUR ON THE EASTERN BOUNDARY OF THE SITE WHERE THERE IS A COMMON BOUNDARY WITH THE ADJACENT MACLEOD II QUARRY. SLOPES WILL BE AT 2(H):1(V) TO A MINIMUM OF APPROXIMATELY 3 M BELOW ANTICIPATED LAKE LEVEL. THE FINAL QUARRY FLOOR ELEVATION SHALL BE -33.0M ASL.

1.4.3 VEGETATION TO BE ESTABLISHED DURING FINAL REHABILITATION

MUCH OF THE VEGETATION ON THE SLOPES WILL BE ESTABLISHED DURING PROGRESSIVE REHABILITATION AS DESCRIBED IN NOTE 1.3.3. UPON FINAL REHABILITATION, SLOPED AREAS SHALL BE INSPECTED ANNUALLY TO ENSURE THAT A 60% OR HIGHER SURVIVAL RATE OF THE PLANTINGS IS ACHIEVED FOR 5 YEARS POST REHABILITATION. IF OBJECTIVES ARE NOT ACHIEVED, THEN PLANTINGS SHALL BE SUPPLEMENTED TO ACHIEVE THE 60% SURVIVAL RATE.

1.4.4 BUILDINGS/STRUCTURES TO REMAIN ONSITE UPON FINAL REHABILITATION THE USE OF ANY BUILDINGS ON SITE SHALL BE DETERMINED BY THE OWNER.

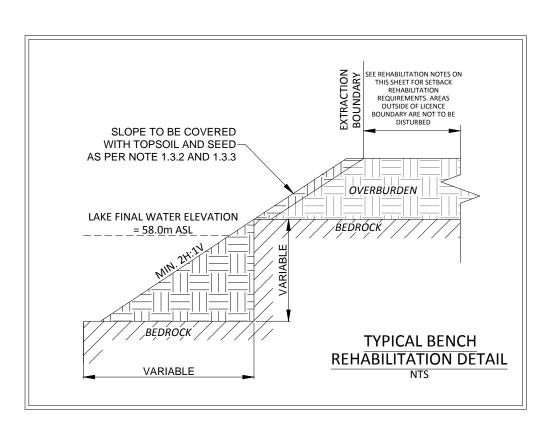
THE ANTICIPATED FINAL ELEVATION OF THE GROUNDWATER TABLE ON SITE IS \pm 58m ASL AS SHOWN ON THE CROSS-SECTIONS.

NO INTERNAL HAUL ROADS WILL REMAIN ON SITE AFTER EXTRACTION IS COMPLETED. ACCESS ROADS MAY REMAIN AT THE DISCRETION OF THE OWNER. 1.4.7 FINAL SURFACE WATER DRAINAGE

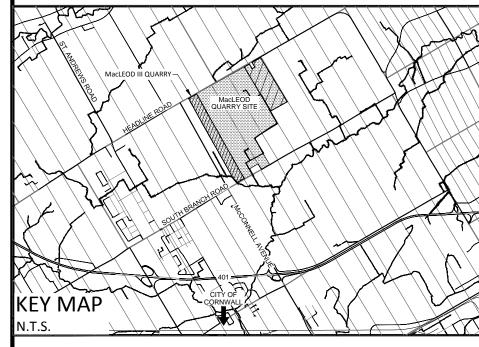
AT THE COMPLETION OF EXTRACTION THE SITE WILL BE A LAKE WITH AN ANTICIPATED FINAL WATER ELEVATION OF ± 58M ASL. THERE WILL BE A MINOR IMPACT ON THE OVERALL SURFACE WATER DRAINAGE AROUND THE SITE. SURFACE FLOWS TO THE NORTH AND WEST PORTION OF THE SITE WILL BE REDUCED SLIGHTLY WITH WATER REMAINING ON SITE CONTAINED IN THE LAKE.

THE FINAL ELEVATIONS OF THE REHABILITATED SITE IS ILLUSTRATED ON THE PLAN BY A 2M CONTOUR INTERVAL EXPRESSED AS METRES ABOVE SEA LEVEL (ASL).

1.4.9 LOCATION OF CROSS-SECTIONS OF REHABILITATION PLAN THE LOCATION OF THE FOUR (4) CROSS-SECTIONS ARE SHOWN ON THE PLAN.







LOCATION OF SITE PART OF LOT 6

CONCESSION 4

GEOGRAPHIC TOWNSHIP OF CORNWALL COUNTY OF SOUTH STORMONT

APPLICANT & PROPERTY OWNER CORNWALL GRAVEL COMPANY P.O. BOX 67 - 390 ELEVENTH STREET WEST

CORNWALL, ONTARIO, K6H 5R9

PETER GRANT, VICE PRESIDENT

I HAVE THE AUTHORITY TO BIND THE CORPORATION

MARK PRIDDLE, P.GEO.

PLAN CERTIFICATION

I HEREBY CERTIFY THAT THIS SITE PLAN WAS PRODUCED UNDER MY SUPERVISION.

DATE

SCALE 1:3000

DISTANCES SHOWN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048. ALL ELEVATIONS ON THIS PLAN ARE GEODETIC.

AREAS

DESCRIPTION	AREA(ha)
PROPERTY	37.8
LICENCE AREA	36.4
EXTRACTION AREA	29.8

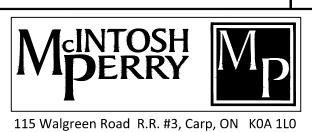
SITE BENCHMARKS

No. DESCRIPTION

A CONTROL 7 - SCALE HOUSE WELL 4992474.452 519456.395 74.613

NORTHING EASTING ELEVATION

Date Amendment NOT FOR CONSTRUCTION



Tel: 613-836-2184 Fax: 613-836-3742 Client:

CORNWALL GRAVEL COMPANY LIMITED

Project:

MACLEOD 3

CATEGORY 1 CLASS "A" PIT BELOW WATER CATEGORY 2 CLASS "A" QUARRY BELOW WATER

Drawing Title:

Date:

AUG. 17, 2017

REHABILITATION SECTIONS

Orawn By:	DL	Project Number:	
Checked By:	MP		CP-16-0280
Paper Size: 24" x 36"	Scale: 1:3000	Drawing Number:	
	(metric)	Sheet 5 of 5	05