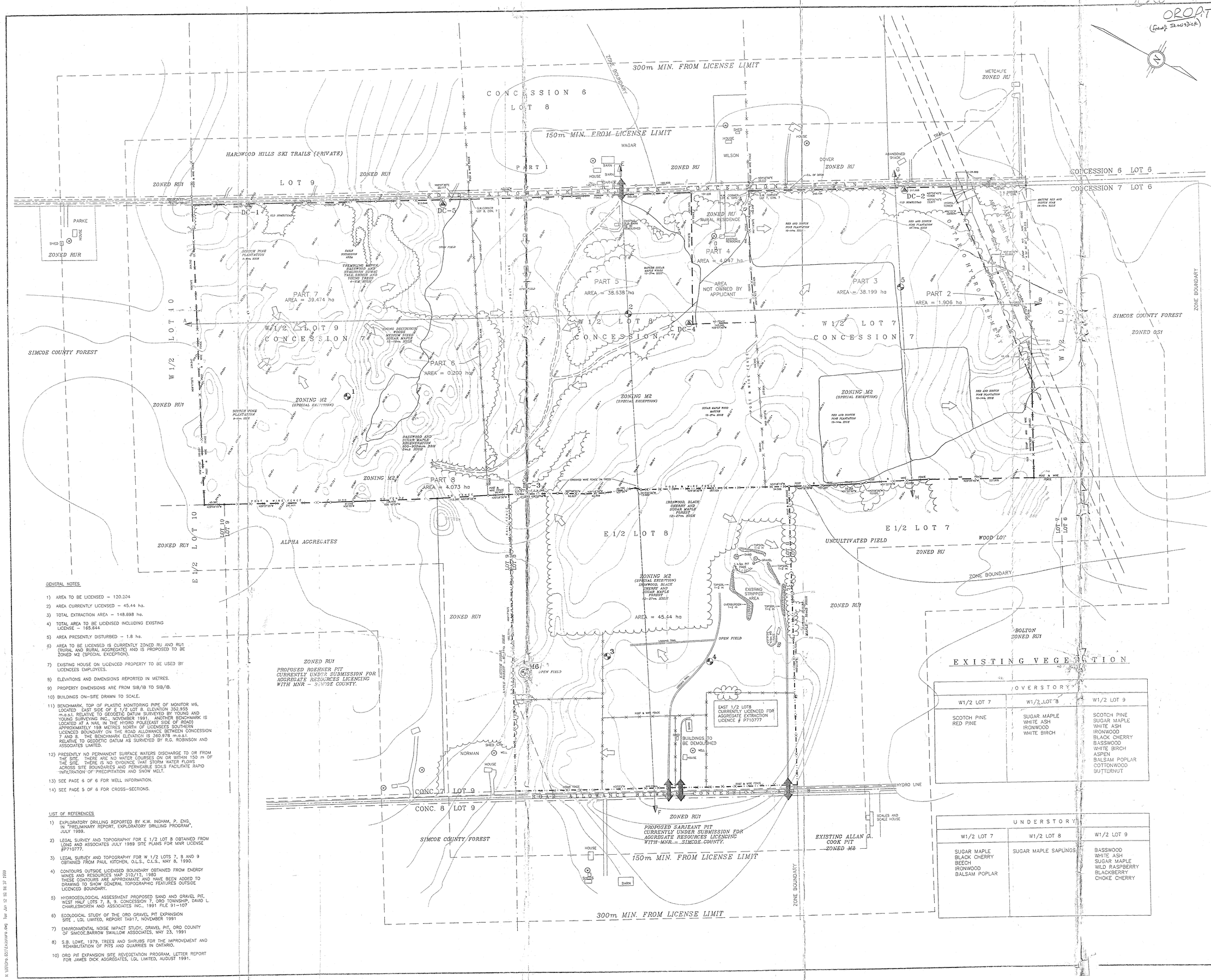
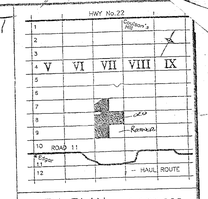


GENERAL NOTES

1) AREA TO BE LICENSED – 120.204
2) AREA CURRENTLY LICENSED – 45.44 ha.
3) TOTAL EXTRACTION AREA – 148.698 ha.
4) TOTAL AREA TO BE LICENSED INCLUDING EXISTING LICENSE – 165.644
5) AREA PRESENTLY DISTURBED – 1.8 ha.
6) AREA TO BE LICENSED IS CURRENTLY ZONED RU AND RU1 (RURAL AND RURAL AGGREGATE) AND IS PROPOSED TO BE ZONED M2 (SPECIAL EXCEPTION).
7) EXISTING HOUSE ON LICENCED PROPERTY TO BE USED BY LICENCEES EMPLOYEES.
8) ELEVATIONS AND DIMENSIONS REPORTED IN METRES.
9) PROPERTY DIMENSIONS ARE FROM SIB/IB TO SIB/IB.
10) BUILDINGS ON-SITE DRAWN TO SCALE.
11) BENCHMARK, TOP OF PLASTIC MONITORING PIPE OF MONITOR M6, LOCATED EAST SIDE OF E 1/2 LOT 8. ELEVATION 352.955 m.a.s.l. RELATIVE TO GEODETIC DATUM SURVEYED BY YOUNG AND YOUNG SURVEYING INC., NOVEMBER 1991. ANOTHER BENCHMARK IS LOCATED AT A NAIL IN THE HYDRO POLE(EAST SIDE OF ROAD) APPROXIMATELY 198 METRES NORTH OF LICENSEES SOUTHERN LICENCED BOUNDARY ON THE ROAD ALLOWANCE BETWEEN CONCESSION 7 AND 8. THE BENCHMARK ELEVATION IS 360.978 m.a.s.l. RELATIVE TO GEODETIC DATUM AS SURVEYED BY R.G. ROBINSON AND ASSOCIATES LIMITED.
12) PRESENTLY NO PERMANENT SURFACE WATERS DISCHARGE TO OR FROM THE SITE. THERE ARE NO WATER COURSES ON OR WITHIN 150 m OF THE SITE. THERE IS NO EVIDENCE THAT STORM WATER FLOWS ACROSS SITE BOUNDARIES AND PERMEABLE SOILS FACILITATE RAPID INFILTRATION OF PRECIPITATION AND SNOW MELT.
13) SEE PAGE 6 OF 6 FOR WELL INFORMATION.
14) SEE PAGE 5 OF 6 FOR CROSS-SECTIONS.

LIST OF REFERENCES

1) EXPLORATORY DRILLING REPORTED BY K.W. INGHAM, P. ENG. IN "PRELIMINARY REPORT, EXPLORATORY DRILLING PROGRAM", JULY 1989.
2) LEGAL SURVEY AND TOPOGRAPHY FOR E 1/2 LOT 8 OBTAINED FROM LONG AND ASSOCIATES JULY 1989 SITE PLANS FOR MNR LICENSE #P710777.
3) LEGAL SURVEY AND TOPOGRAPHY FOR W 1/2 LOTS 7, 8 AND 9 OBTAINED FROM PAUL KITCHEN, O.L.S., C.L.S., MAY 8, 1990.
4) CONTOURS OUTSIDE LICENSED BOUNDARY OBTAINED FROM ENERGY MINES AND RESOURCES MAP 31D/12, 1980 THESE CONTOURS ARE APPROXIMATE AND HAVE BEEN ADDED TO DRAWING TO SHOW GENERAL TOPOGRAPHIC FEATURES OUTSIDE LICENCED BOUNDARY.
5) HYDROGEOLOGICAL ASSESSMENT PROPOSED SAND AND GRAVEL PIT, WEST HALF LOTS 7, 8, 9, CONCESSION 7, ORO TOWNSHIP, DAVID L. CHARLESWORTH AND ASSOCIATES INC., 1991 FILE 91-107
6) ECOLOGICAL STUDY OF THE ORO GRAVEL PIT EXPANSION SITE , LGL LIMITED, REPORT TA917, NOVEMBER 1991
7) ENVIRONMENTAL NOISE IMPACT STUDY, GRAVEL PIT, ORO COUNTY OF SIMCOE.BARROW SWALLOW ASSOCIATES, MAY 23, 1991
8) S.B. LOWE, 1979, TREES AND SHRUBS FOR THE IMPROVEMENT AND REHABILITATION OF PITS AND QUARRIES IN ONTARIO.
10) ORO PIT EXPANSION SITE REVEGETATION PROGRAM, LETTER REPORT FOR JAMES DICK AGGREGATES, LGL LIMITED, AUGUST 1991.



KEY PLAN 1:100,000
SCALE 0 1 2 3 4 km

LEGEND

- SQ. STANDARD IRON BAR
- SQ. IRON BAR
- BOREHOLE INGHAM
- BOREHOLE WITH MONITOR INGHAM
- BOREHOLE WITH MONITOR CHARLESWORTH
- BOREHOLE CHARLESWORTH
- VEGETATION
- 363.25+ EXISTING SPOT ELEVATION
- FENCE
- ZONE BOUNDARY
- PRESENTLY LICENCED AREA
- BOUNDARY OF AREA TO BE LICENCED
- LOT LINES
- CONTOUR LINES
- DRAINAGE DIRECTION
- WALKING TRAILS
- TRAIL
- m.a.s.l. METRES ABOVE SEA LEVEL
- WELL
- PROPERTY LINE
- CONESSION LINE
- 150m & 300m LINE
- ENTRANCE/EXIT
- HYDRO LINE
- APPROXIMATE CONTOURS

BENCH MARK

M6 BENCHMARK LOCATED IN E1/2 LOT 8 ALONG LOT LINE WITH E1/2 LOT 9 (SEE NOTE 12)

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

Jan 03 99
DATE

SCALE 1:2500
metres 60 40 20 0 50 100

NO.	DATE	DESCRIPTION
1	JAN. 99	OMB APPROVAL
2		
3		
4		
5		

REVISION

KEEWATIN–ASKI LTD
CONSULTING ENGINEERS
CONCORD THUNDER BAY SOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

LAFARGE CANADA INC.

Project:
Lafarge Canada Inc.
c/o Lafarge Construction Materials Group
Oro Pit

W1/2 Lot 7, W1/2 Lot 8, W1/2 Lot 9 and E1/2 Lot 8,
Concession 7
Township of Oro, County of Simcoe

Applicant/Licensee:
Lafarge Canada Inc.
c/o Lafarge Construction Materials Group
7980 Keele Street, 5th Floor
Concord, Ontario L4K 4G7

DRAWING TITLE

EXISTING FEATURES

REGISTERED PROFESSIONAL ENGINEER
S.W. TEFFERNAN
01/12/99
PROVINCE OF ONTARIO

DESIGN A.R./P.L./S.D.
DRAWN P.T./B.E./P.S./D.W.
PLOT 1:2
SCALE 1:2500
DATE JAN.12, 1999

PROJECT NUMBER 89651

DRAWING NUMBER 1 OF 6

CAD FILE: EXISTORO.DWG

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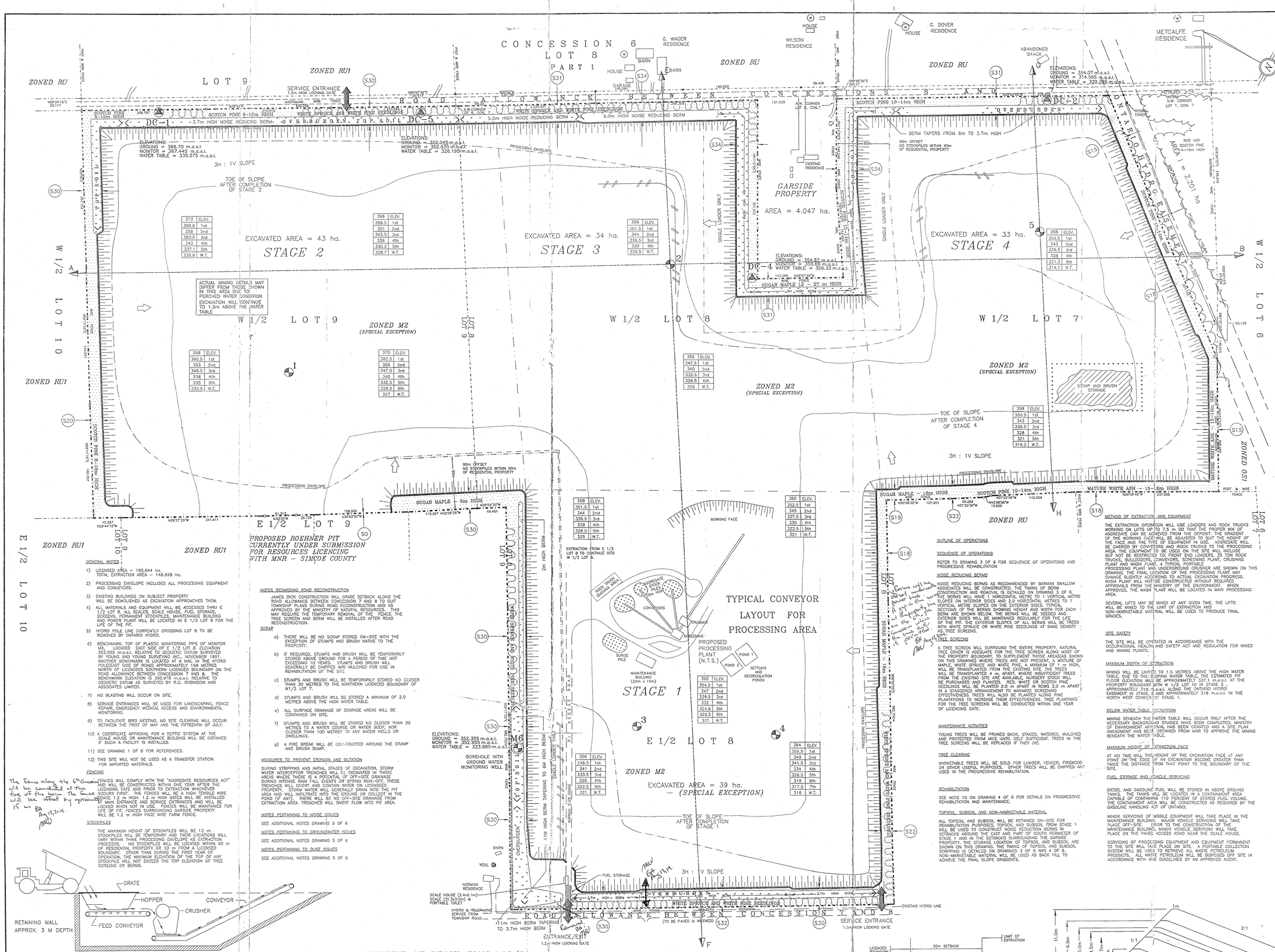
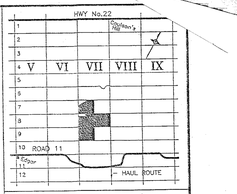




KEY PLAN 1:100,000

SCALE 0 1 2 3 4 km

LEGEND

- SQ. STANDARD IRON BAR
- SQ. IRON BAR
- WIRE FENCE 1.2M HIGH
- LICENCED BOUNDARY
- PROPERTY LINE
- TOE OF SLOPE
- DIVISION LINES BETWEEN STAGES
- RESIDENTIAL SETBACK FOR STOCKPILES
- PROCESSING ENVELOPE
- AREAS WHICH REQUIRE ADDITIONAL TREE COVERAGE (SEE NOTES ON TREE SCREENS THIS DRAWING)
- SINGLE LOADER ONLY
- FIRE BREAK
- TREE SCREEN
- NOISE REDUCING BERM
- VEGETATION
- BOREHOLE
- BOREHOLE WITH MONITOR
- WATER MONITOR
- TOP OF FACE
- EXTRACTION FACE (VERTICAL)
- 358 ELEV. 350.5 1st 343 2nd 335.5 3rd 328 4th — EXISTING ELEVATION, LIFTS
- 310.5 FINAL — PROPOSED FINAL ELEVATION
- 322.5 W.T. — WATER TABLE
- ENTRANCE/EXIT
- AREA IN BERM ALLOCATED FOR TOPSOIL OR OVERBURDEN
- S30 SETBACK DISTANCE IN METRES
- LOT LINE
- DRAINAGE DIRECTION

BENCHMARK

M6 BENCHMARK LOCATED IN E1/2 LOT 8 ADJ TO LOT LINE WITH E1/2 LOT 9

PAVEMENT

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

DATE

SCALE 1:2000

40 20 0 50 100m

NO.	DATE	DESCRIPTION
1	JAN. 99	OMB APPROVAL
2	Aug 13/14	Various Amendments - including Minor Variance
3		
4		
5		
6		

REVISION

KEEWATIN-ASKI LTD
CONSULTING ENGINEERS
CONCORD THUNDER BAY SIOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

PROJECT

JAMES DICK CONSTRUCTION SAND AND GRAVEL PIT, ORO

WEST 1/2 LOT 7, CONCESSION 7
WEST 1/2 LOT 8, CONCESSION 7
WEST 1/2 LOT 9, CONCESSION 7
EAST 1/2 LOT 8, CONCESSION 7
TOWNSHIP OF ORO
COUNTY OF SIMCOE

APPLICANT

JAMES DICK CONSTRUCTION LIMITED
P.O. BOX 470
BOLTON, ONTARIO
L7E 3T4

DRAWING TITLE

OPERATIONAL PLAN

REGISTERED PROFESSIONAL ENGINEER J.W. HEFFERNAN 31/12/99 PROVINCE OF ONTARIO

DESIGN	P.L. / S.D.
DRAWN	S.D./P.L./P.S.
SCALE	1:2000
DATE	JAN. 12, 1999
PROJECT NUMBER	89651
DRAWING NUMBER	2 OF 6

CAD FILE: ORO-OP.DWG

GENERAL NOTES

1) LICENSED AREA = 165.644 ha.
EXTRACTION AREA = 148.698 ha.
2) PROCESSING ENVELOPE INCLUDES ALL PROCESSING EQUIPMENT AND CONVEYORS.
3) EXISTING BUILDINGS ON SUBJECT PROPERTY WILL BE DEMOLISHED AS EXCAVATION APPROACHES THEM.
4) ALL MATERIALS AND EQUIPMENT WILL BE ACCESSED THRU E 1/2 LOT 8. ALL SCALES, SCALE HOUSE, FUEL STORAGE, SCREENS, PERMANENT STOCKPILES, MAINTENANCE BUILDING AND POWER PLANT WILL BE LOCATED IN E 1/2 LOT 8 FOR THE LIFE OF THE PIT.
5) HYDRO POLE LINE CURRENTLY CROSSING LOT 8 TO BE REMOVED BY ONTARIO HYDRO.
6) BENCHMARK, TOP OF PLASTIC MONITORING PIPE OF MONITOR M6, LOCATED EAST SIDE OF E 1/2 LOT 8. ELEVATION 352.955 m.a.s.l. RELATIVE TO GEODETIC DATUM SURVEYED BY YOUNG AND YOUNG SURVEYING INC., NOVEMBER 1991. ANOTHER BENCHMARK IS LOCATED AT A NAIL IN THE HYDRO POLE(EAST SIDE OF ROAD) APPROXIMATELY 198 METRES NORTH OF LICENSEES SOUTHERN LICENCED BOUNDARY ON THE ROAD ALLOWANCE BETWEEN CONCESSION 7 AND 8. THE BENCHMARK ELEVATION IS 350.978 m.a.s.l. RELATIVE TO GEODETIC DATUM AS SURVEYED BY R.G. ROBINSON AND ASSOCIATES LIMITED.
7) NO BLASTING WILL OCCUR ON SITE.
8) SERVICE ENTRANCES WILL BE USED FOR LANDSCAPING, FENCE REPAIR, EMERGENCY MEDICAL ACCESS AND ENVIRONMENTAL MONITORING.
9) TO FACILITATE BIRD NESTING, NO SITE CLEARING WILL OCCUR BETWEEN THE FIRST OF MAY AND THE FIFTEENTH OF JULY.
10) A CERTIFICATE APPROVAL FOR A SEPTIC SYSTEM AT THE SCALE HOUSE FOR MAINTENANCE BUILDING WILL BE OBTAINED IF SUCH A FACILITY IS INSTALLED.
11) SEE DRAWING 1 OF 6 FOR REFERENCES.
12) THIS SITE WILL NOT BE USED AS A TRANSFER STATION FOR IMPORTED MATERIALS.

FENCING

FENCES WILL COMPLY WITH THE "AGGREGATE RESOURCES ACT" AND WILL BE CONSTRUCTED WITHIN ONE YEAR AFTER THE LICENSING DATE AND PRIOR TO EXTRACTION WHICHEVER OCCURS FIRST. THE FENCES WILL BE A HIGH TENSILE WIRE FENCE 1.2 m HIGH. 1.2 m HIGH GATES WILL BE INSTALLED AT MAIN ENTRANCE AND SERVICE ENTRANCES AND WILL BE LOCKED WHEN NOT IN USE. FENCES WILL BE MAINTAINED FOR LIFE OF PIT. FENCES SURROUNDING CARSIDE PROPERTY WILL BE 1.2 m HIGH PAGE WIRE FARM FENCE.

The fence along the 6th Concession will be constructed at the time of the berm by approximately 15 m. BA Aug 13, 2014. MW

STOCKPILES

THE MAXIMUM HEIGHT OF STOCKPILES WILL BE 12 m. STOCKPILES WILL BE TEMPORARY AND THEIR LOCATIONS WILL VARY WITHIN THINE PROCESSING ENVELOPE AS EXTRACTION PROCEEDS. NO STOCKPILES WILL BE LOCATED WITHIN 90 m OF RESIDENTIAL PROPERTY OR 30 m FROM A LICENSED BOUNDARY. OTHER THAN DURING THE FIRST YEAR OF OPERATION, THE MAXIMUM ELEVATION OF THE TOP OF ANY STOCKPILE WILL NOT EXCEED THE TOP ELEVATION OF TREE SCREENS OR BERMS.

NOTES REGARDING ROAD RECONSTRUCTION

JAMES DICK CONSTRUCTION WILL GRADE SETBACK ALONG THE ROAD ALLOWANCE BETWEEN CONCESSION 7 AND 8 TO SUIT TOWNSHIP PLANS DURING ROAD RECONSTRUCTION AND AS APPROVED BY THE MINISTRY OF NATURAL RESOURCES. THIS MAY REQUIRE THE TEMPORARY REMOVAL OF THE FENCE. THE TREE SCREEN AND BERM WILL BE INSTALLED AFTER ROAD RECONSTRUCTION.

SCRAP

a) THERE WILL BE NO SCRAP STORED ON-SITE WITH THE EXCEPTION OF STUMPS AND BRUSH NATIVE TO THE PROPERTY.
b) IF REQUIRED, STUMPS AND BRUSH WILL BE TEMPORARILY STORED ABOVE GROUND FOR A PERIOD OF TIME NOT EXCEEDING 10 YEARS. STUMPS AND BRUSH WILL GENERALLY BE CHIPPED AND MULCHED FOR USE IN REHABILITATION OF THE SITE.
c) STUMPS AND BRUSH WILL BE TEMPORARILY STORED NO CLOSER THAN 30 METRES TO THE NORTHERN LICENCED BOUNDARY OF W1/2 LOT 7.
d) STUMPS AND BRUSH WILL BE STORED A MINIMUM OF 2.0 METRES ABOVE THE HIGH WATER TABLE.
e) ALL SURFACE DRAINAGE OF STORAGE AREAS WILL BE CONTAINED ON SITE.
f) STUMPS AND BRUSH WILL BE STORED NO CLOSER THAN 30 METRES TO A WATER COURSE OR WATER BODY, NOR CLOSER THAN 100 METRES TO ANY WATER WELLS OR DWELLINGS.
g) A FIRE BREAK WILL BE CONSTRUCTED AROUND THE STUMP AND BRUSH DUMP.

MEASURES TO PREVENT EROSION AND SILTATION

DURING STRIPPING AND INITIAL STAGES OF EXCAVATION, STORM WATER INTERCEPTOR TRENCHES WILL BE EXCAVATED IN THOSE AREAS WHERE THERE IS A POTENTIAL OF OFF-SITE DRAINAGE. DURING INTENSE RAIN FALL EVENTS OR SPRING RUN-OFF, THESE TRENCHES WILL DIVERT AND CONTAIN WATER ON LICENSEES PROPERTY. STORM WATER WILL GENERALLY DRAIN INTO THE PIT AREA AND WILL INFILTRATE INTO THE GROUND OR COLLECT IN THE POND (IF ANY). THERE WILL BE NO OFF-SITE DRAINAGE FROM EXTRACTION AREA. TRENCHES WILL DIVERT FLOW INTO PIT AREA.

NOTES PERTAINING TO NOISE ISSUES

SEE ADDITIONAL NOTES DRAWING 5 OF 6

NOTES PERTAINING TO GROUNDWATER ISSUES

SEE ADDITIONAL NOTES DRAWING 5 OF 6

NOTES PERTAINING TO DUST ISSUES

SEE ADDITIONAL NOTES DRAWING 5 OF 6

METHOD OF EXTRACTION AND EQUIPMENT

THE EXTRACTION OPERATION WILL USE LOADERS AND ROCK TRUCKS WORKING ON LIFTS UP TO 7.5 m SO THAT THE PROPER MIX OF AGGREGATE CAN BE ACHIEVED FROM THE DEPOSIT. THE GRADIENT OF THE WORKING FACE WILL BE ADJUSTED TO SUIT THE HEIGHT OF THE FACE AND THE TYPE OF EQUIPMENT IN USE. AGGREGATE WILL BE CARRIED BY CONVEYORS AND ROCK TRUCKS TO THE PROCESSING AREA. THE EQUIPMENT TO BE USED ON THE SITE WILL INCLUDE BUT NOT BE RESTRICTED TO: FRONT END LOADERS, 35 TON ROCK TRUCKS, BULLDOZERS, CONVEYORS, SCREENING PLANT, CRUSHING PLANT AND WASH PLANT. A TYPICAL PORTABLE PROCESSING PLANT AND UNDERGROUND CRUSHER ARE SHOWN ON THIS DRAWING. THE FINAL LOCATION OF THE PROCESSING PLANT MAY CHANGE SLIGHTLY ACCORDING TO ACTUAL EXCAVATION PROGRESS. WASH PLANT WILL NOT BE CONSTRUCTED WITHOUT REQUIRED APPROVALS FROM THE MINISTRY OF THE ENVIRONMENT. WHEN APPROVED, THE WASH PLANT WILL BE LOCATED IN MAIN PROCESSING AREA.

SEVERAL LIFTS MAY BE MINED AT ANY GIVEN TIME. THE LIFTS WILL BE MINED TO THE LIMIT OF EXTRACTION. ALL SURPLUS NON-MARKETABLE MATERIAL WILL BE USED TO PRODUCE FINAL GRADES.

SITE SAFETY

THE SITE WILL BE OPERATED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATION FOR MINES AND MINING PLANTS.

MAXIMUM DEPTH OF EXTRACTION

MINING WILL BE LIMITED TO 1.5 METRES ABOVE THE HIGH WATER TABLE. DUE TO THE SLOPING WATER TABLE, THE ESTIMATED PIT FLOOR ELEVATION WILL BE APPROXIMATELY 337.1 m.a.s.l. AT THE PROPERTY BOUNDARY WITH W 1/2 LOT 10 IN STAGE 2 , APPROXIMATELY 316.1 m.a.s.l. ALONG THE ONTARIO HYDRO EASEMENT IN STAGE 4 AND APPROXIMATELY 318 m.a.s.l. IN THE NORTH WEST CORNER OF STAGE 1.

BELOW WATER TABLE EXCAVATION

MINING BENEATH THE WATER TABLE WILL OCCUR ONLY AFTER THE NECESSARY BACKGROUND STUDIES HAVE BEEN COMPLETED, MINISTRY OF ENVIRONMENT APPROVAL HAS BEEN OBTAINED FROM MNR TO APPROVE THE MINING BENEATH THE WATER TABLE.

MAXIMUM HEIGHT OF EXTRACTION FACE

AT NO TIME WILL THE HEIGHT OF THE EXCAVATION FACE AT ANY POINT ON THE EDGE OF AN EXCAVATION BECOME GREATER THAN TWICE THE DISTANCE FROM THAT POINT TO THE BOUNDARY OF THE SITE.

FUEL STORAGE AND VEHICLE SERVICING

DIESEL AND GASOLINE FUEL WILL BE STORED IN ABOVE GROUND TANKS. THE TANKS WILL BE LOCATED IN A CONTAINMENT AREA CAPABLE OF CONTAINING 110 PERCENT OF STORED FUEL VOLUME. THE CONTAINMENT AREA WILL BE CONSTRUCTED AS REQUIRED BY THE GASOLINE HANDLING ACT OF ONTARIO.

MINOR SERVICING OF MOBILE EQUIPMENT WILL TAKE PLACE IN THE MAINTENANCE BUILDING. MAJOR VEHICLE SERVICING WILL TAKE PLACE OFF-SITE. PRIOR TO THE CONSTRUCTION OF THE MAINTENANCE BUILDING, MINOR VEHICLE SERVICING WILL TAKE PLACE ON THE PAVED ACCESS ROAD NEAR THE SCALE HOUSE.

SERVICING OF PROCESSING EQUIPMENT AND EQUIPMENT PERMANENT TO THE SITE WILL TAKE PLACE ON SITE. A PORTABLE COLLECTION SYSTEM WILL BE USED TO RETRIEVE ALL WASTE PETROLEUM PRODUCTS. ALL WASTE PETROLEUM WILL BE DISPOSED OFF SITE IN ACCORDANCE WITH MOE GUIDELINES BY AN APPROVED AGENT.

OUTLINE OF OPERATIONS

SEQUENCE OF OPERATIONS

REFER TO DRAWING 3 OF 6 FOR SEQUENCE OF OPERATIONS AND PROGRESSIVE REHABILITATION

NOISE REDUCING BERMS

NOISE REDUCING BERMS AS RECOMMENDED BY BARMAN SWALLOW ASSOCIATES WILL BE CONSTRUCTED. THE TIMING OF BERM CONSTRUCTION AND REMOVAL IS DETAILED ON DRAWING 3 OF 6. THE BERMS WILL HAVE 1 HORIZONTAL METRE TO 1 VERTICAL METRE SLOPES ON INTERIOR SIDES AND 2.0 HORIZONTAL METRES TO 1 VERTICAL METRE SLOPES ON THE EXTERIOR SIDES. TYPICAL SECTIONS OF THE BERMS SHOWING HEIGHT AND WIDTH FOR EACH BERM ARE SHOWN BELOW. THE BERMS WILL BE SEEDED AND EXTERIOR SIDES WILL BE MAINTAINED REGULARLY FOR THE LIFE OF THE PIT. THE EXTERIOR SLOPES OF ALL BERMS WILL BE TREED WITH WHITE SPRUCE OR WHITE PINE SEEDLINGS AT SAME DENSITY AS TREE SCREENS.

TREE SCREENS

A TREE SCREEN WILL SURROUND THE ENTIRE PROPERTY. NATURAL TREE COVER IS ADEQUATE FOR THE TREE SCREEN ALONG MOST OF THE PROPERTY BOUNDARY. TO SUPPLEMENT THOSE AREAS(AS SHOWN ON THIS DRAWING) WHERE TREES ARE NOT PRESENT, A MIXTURE OF MAPLE, WHITE SPRUCE AND WHITE PINE, A MINIMUM OF 1 m HIGH, WILL BE TRANSPLANTED FROM THE EXISTING SITE. THE TREES WILL BE TRANSPLANTED 4 m. APART. WHERE INSUFFICIENT TREES FROM THE EXISTING SITE ARE AVAILABLE, NURSERY STOCK WILL BE PURCHASED AND PLANTED. RED, WHITE OR SCOTCH PINE SEEDLINGS WILL BE PLANTED 2.0 m APART IN ROWS 2.0 m APART IN A STAGGERED ARRANGEMENT TO MAXIMIZE SCREENING EFFECTIVENESS. TREES WILL ALSO BE PLANTED ALONG PINE PLANTATIONS TO INCREASE THEIR EFFECTIVENESS. TREE PLANTINGS FOR THE TREE SCREENS WILL BE CONDUCTED WITHIN ONE YEAR OF LICENCING DATE.

MAINTENANCE ACTIVITIES

YOUNG TREES WILL BE PRUNED BACK, STAKED, WATERED, MULCHED AND PROTECTED FROM MICE UNTIL SELF SUFFICIENT. TREES IN THE TREE SCREENS WILL BE REPLACED IF THEY DIE.

TREE CLEARING

MARKETABLE TREES WILL BE SOLD FOR LUMBER, VENEER, FIREWOOD OR OTHER USEFUL PURPOSES. OTHER TREES WILL BE CHIPPED AND USED IN THE PROGRESSIVE REHABILITATION.

REHABILITATION

SEE NOTE 10 ON DRAWING 4 OF 6 FOR DETAILS ON PROGRESSIVE REHABILITATION AND MAINTENANCE.

TOPSOIL, SUBSOIL AND NON-MARKETABLE MATERIAL

ALL TOPSOIL AND SUBSOIL WILL BE RETAINED ON-SITE FOR REHABILITATION PURPOSES. TOPSOIL AND SUBSOIL FROM STAGE 1 WILL BE USED TO CONSTRUCT NOISE REDUCTION BERMS IN SETBACKS AROUND THE EAST AND PART OF SOUTH PERIMETER OF STAGE 1 AND IN THE SETBACKS SURROUNDING THE GARSIDE PROPERTY. THE STORAGE LOCATION OF TOPSOIL AND SUBSOIL ARE SHOWN ON THIS DRAWING. THE TIMING OF TOPSOIL AND SUBSOIL STRIPPING IS DETAILED ON DRAWINGS 3 OF 6 AND 4 OF 6. NON-MARKETABLE MATERIAL WILL BE USED AS BACK FILL TO ACHIEVE THE FINAL SLOPE GRADIENTS.

OVERRIDE OF REGULATION 702/89

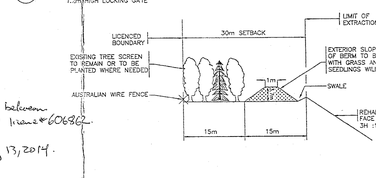
No.	DESCRIPTION	REF. TO REG.	COMMENTS
1.	MINING 15 m SETBACK ALONG COMMON BORDER WITH PIT IN E 1/2 LOT 9	18(1)(a)	MUTUAL MINING OF SETBACKS BETWEEN TWO LICENCED PITS
2.	REMOVAL OF FENCING ALONG COMMON BORDER WITH PIT IN E 1/2 LOT 9	16(1)(a)	REMOVAL OF FENCE TO ALLOW FOR EXTRACTION. FENCE WILL BE REPLACED IMMEDIATELY UPON COMPLETION OF THE ADJACENT SETBACK REHABILITATION.
3.	MINING 30 m SETBACK ALONG 7th LINE AND FENCE REMOVAL	18(1)(a) 16(1)(a)	MINING OF AGGREGATE TO MATCH ROAD GRADE DURING ROAD RECONSTRUCTION. FENCE WILL BE REPLACED.

5 Stockpiles within 90m of the Norman property is permitted. BA Aug 13, 2014. MW

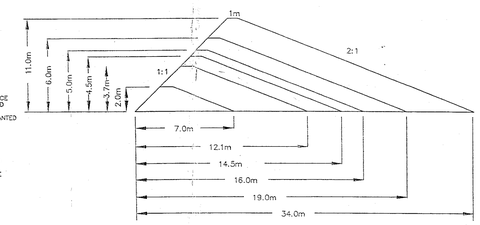
5 Fence relief along common boundaries with the Norman property. The fence runs adjacent to Concession 7. Will be continued in front of the Norman property. Boundaries that are not fenced must be clearly marked with 1.2 m high stakes that can be easily followed from one stake to the next. BA Aug 13, 2014. MW

6 Topsoil movement between licence # 3553 and licence # 606862 is permitted. BA Aug 13, 2014. MW

TYPICAL UNDERGROUND CRUSHER SECTION



TYPICAL SECTION THROUGH 30m SETBACK WITH BERM



HEIGHT & WIDTH OF BERMS REQUIRED

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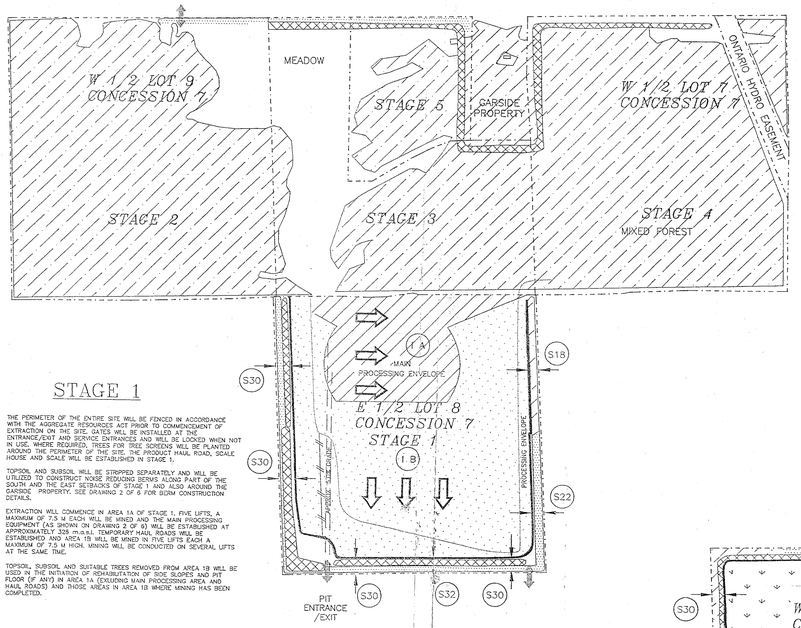


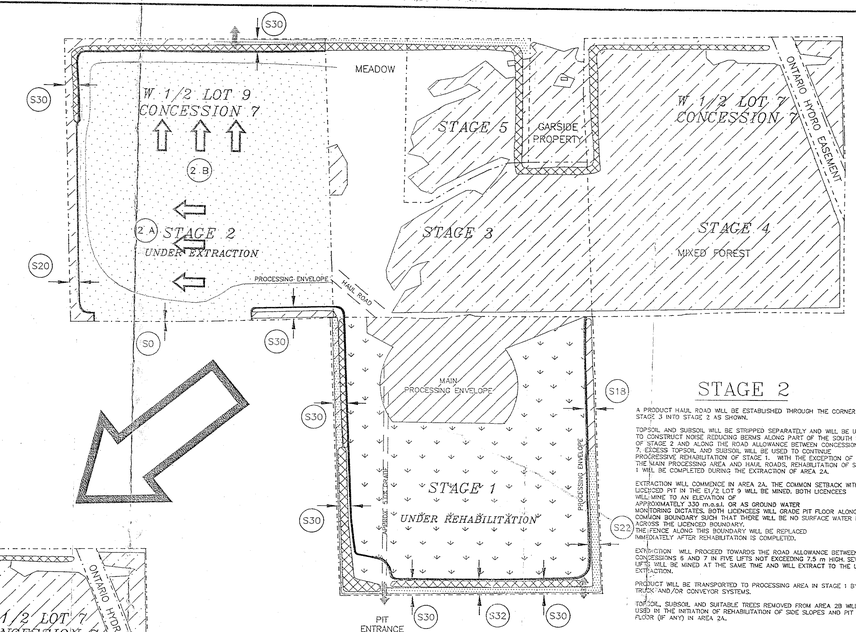
STAGE 1

THE PERIMETER OF THE ENTIRE SITE WILL BE FENCED IN ACCORDANCE WITH THE AGGREGATE RESOURCES ACT PRIOR TO COMMENCEMENT OF EXTRACTION ON THE SITE. GATES WILL BE INSTALLED AT THE ENTRANCE/EXIT AND SERVICE ENTRANCE AND WILL BE LOCKED WHEN NOT IN USE. WHERE REQUIRED, TREES FOR SCREENS WILL BE PLANTED AROUND THE PERIMETER OF THE SITE. THE PRODUCT HAUL ROAD, SCALE HOUSE AND SCALE WILL BE ESTABLISHED IN STAGE 1.

TOPSOIL AND SUBSOIL WILL BE STRIPPED SEPARATELY AND WILL BE UTILIZED TO CONSTRUCT NOISE REDUCING BERMS ALONG PART OF THE SOUTH AND THE EAST SETBACKS OF STAGE 1 AND ALSO AROUND THE GARSIDE PROPERTY. SEE DRAWING 2 OF 6 FOR BERM CONSTRUCTION DETAILS.

EXTRACTION WILL COMMENCE IN AREA 1A OF STAGE 1, FIVE LIFTS, A MAXIMUM OF 7.5 M EACH WILL BE MINED AND THE MAIN PROCESSING EQUIPMENT (AS SHOWN ON DRAWING 2 OF 6) WILL BE ESTABLISHED AT APPROXIMATELY 325 m.a.s.l. TEMPORARY HAUL ROADS WILL BE ESTABLISHED AND AREA 1B WILL BE MINED IN FIVE LIFTS EACH A MAXIMUM OF 7.5 M HIGH. MINING WILL BE CONDUCTED ON SEVERAL LIFTS AT THE SAME TIME.

TOPSOIL, SUBSOIL AND SUITABLE TREES REMOVED FROM AREA 1B WILL BE USED IN THE INITIATION OF REHABILITATION OF SIDE SLOPES AND PIT FLOOR (IF ANY) IN AREA 1A (EXCLUDING MAIN PROCESSING AREA AND HAUL ROADS) AND THOSE AREAS IN AREA 1B WHERE MINING HAS BEEN COMPLETED.



STAGE 2

A PRODUCT HAUL ROAD WILL BE ESTABLISHED THROUGH THE CORNER OF STAGE 3 INTO STAGE 2 AS SHOWN.

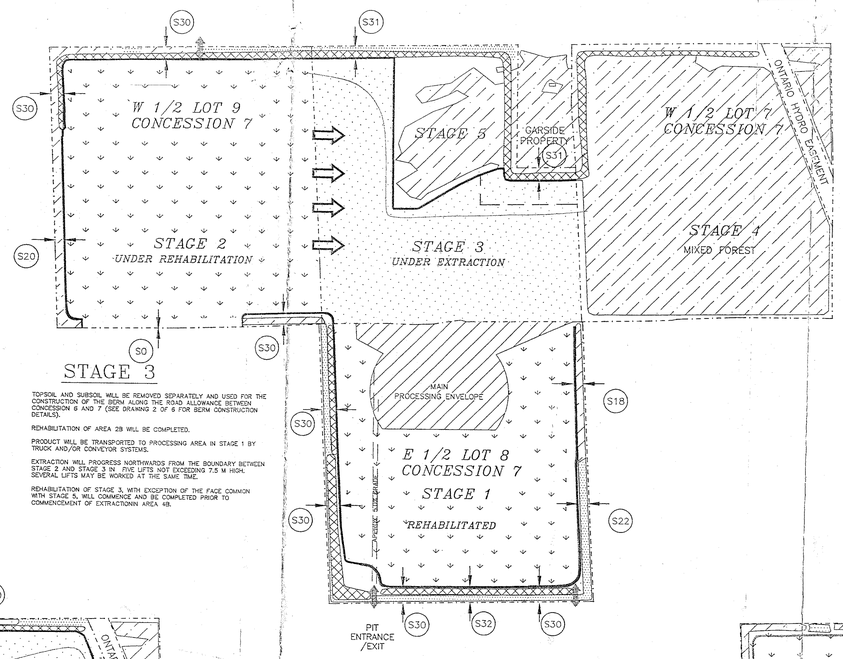
TOPSOIL AND SUBSOIL WILL BE STRIPPED SEPARATELY AND WILL BE USED TO CONSTRUCT NOISE REDUCING BERMS ALONG PART OF THE SOUTH SIDE OF STAGE 2 AND ALONG THE ROAD ALLOWANCE BETWEEN CONCESSION 6 AND 7. EXCESS TOPSOIL AND SUBSOIL WILL BE USED TO CONTINUE PROGRESSIVE REHABILITATION OF STAGE 1. WITH THE EXCEPTION OF THE MAIN PROCESSING AREA AND HAUL ROADS, REHABILITATION OF STAGE 1 WILL BE COMPLETED DURING THE EXTRACTION OF AREA 2A.

EXTRACTION WILL COMMENCE IN AREA 2A. THE COMMON SETBACK WITH THE LICENCED PIT IN THE E1/2 LOT 9 WILL BE MINED. BOTH LICENCEES WILL MINE TO AN ELEVATION OF APPROXIMATELY 330 m.a.s.l. OR AS GROUND WATER MONITORING DICTATES. BOTH LICENCEES WILL GRADE PIT FLOOR ALONG COMMON BOUNDARY SUCH THAT THERE WILL BE NO SURFACE WATER RUN-OFF ACROSS THE LICENCED BOUNDARY.
THE FENCE ALONG THIS BOUNDARY WILL BE REPLACED IMMEDIATELY AFTER REHABILITATION IS COMPLETED.

EXTRACTION WILL PROCEED TOWARDS THE ROAD ALLOWANCE BETWEEN CONCESSIONS 6 AND 7 IN FIVE LIFTS NOT EXCEEDING 7.5 m HIGH. SEVERAL LIFTS WILL BE MINED AT THE SAME TIME AND WILL EXTRACT TO THE LIMIT OF EXTRACTION.

PRODUCT WILL BE TRANSPORTED TO PROCESSING AREA IN STAGE 1 BY TRUCK AND/OR CONVEYOR SYSTEMS.

TOPSOIL, SUBSOIL AND SUITABLE TREES REMOVED FROM AREA 2B WILL BE USED IN THE INITIATION OF REHABILITATION OF SIDE SLOPES AND PIT FLOOR (IF ANY) IN AREA 2A.



STAGE 3

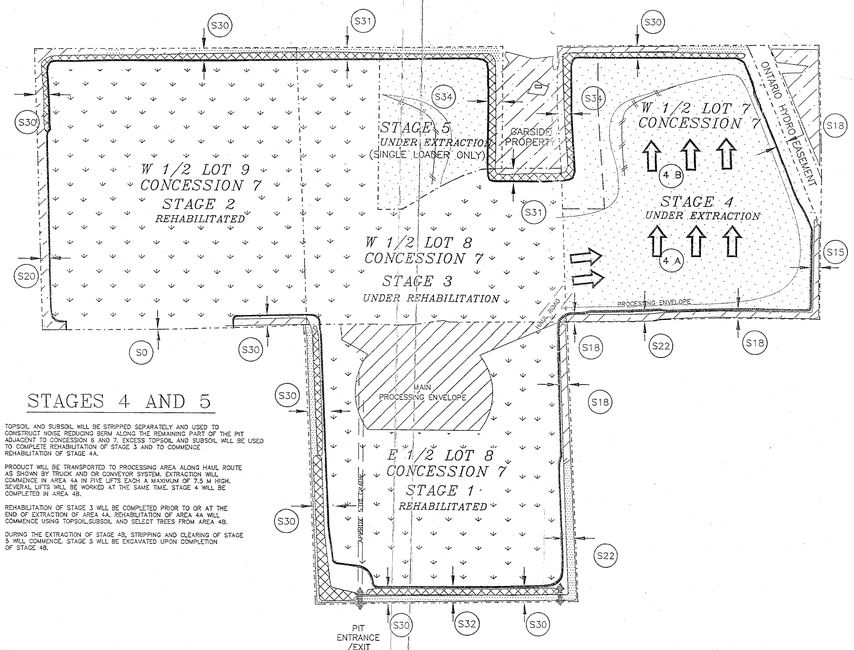
TOPSOIL AND SUBSOIL WILL BE REMOVED SEPARATELY AND USED FOR THE CONSTRUCTION OF THE BERM ALONG THE ROAD ALLOWANCE BETWEEN CONCESSION 6 AND 7 (SEE DRAWING 2 OF 6 FOR BERM CONSTRUCTION DETAILS).

REHABILITATION OF AREA 2B WILL BE COMPLETED.

PRODUCT WILL BE TRANSPORTED TO PROCESSING AREA IN STAGE 1 BY TRUCK AND/OR CONVEYOR SYSTEMS.

EXTRACTION WILL PROGRESS NORTHWARDS FROM THE BOUNDARY BETWEEN STAGE 2 AND STAGE 3 IN FIVE LIFTS NOT EXCEEDING 7.5 M HIGH. SEVERAL LIFTS MAY BE WORKED AT THE SAME TIME.

REHABILITATION OF STAGE 3, WITH EXCEPTION OF THE FACE COMMON WITH STAGE 5, WILL COMMENCE AND BE COMPLETED PRIOR TO COMMENCEMENT OF EXTRACTIONN AREA 4B.



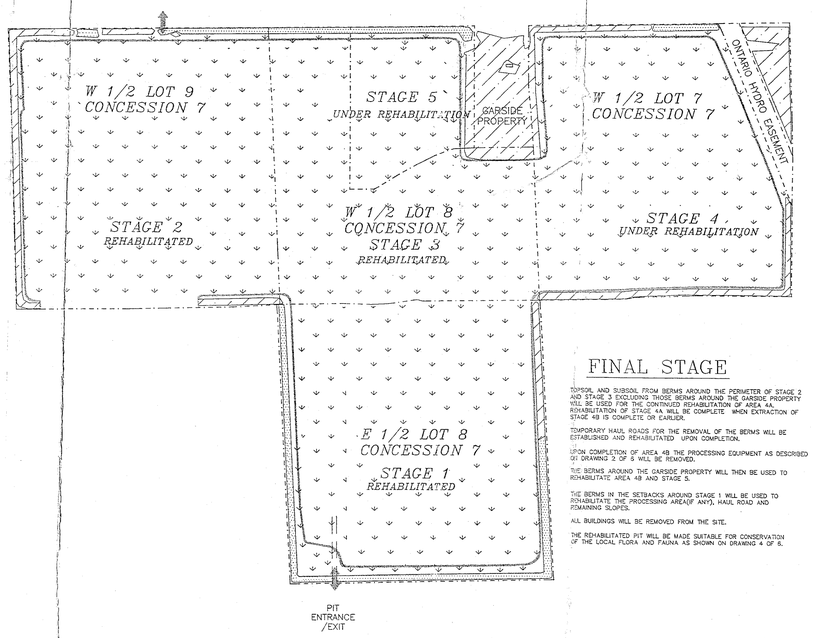
STAGES 4 AND 5

TOPSOIL AND SUBSOIL WILL BE STRIPPED SEPARATELY AND USED TO CONSTRUCT NOISE REDUCING BERM ALONG THE REMAINING PART OF THE PIT ADJACENT TO CONCESSION 6 AND 7. EXCESS TOPSOIL AND SUBSOIL WILL BE USED TO COMPLETE REHABILITATION OF STAGE 3 AND TO COMMENCE REHABILITATION OF STAGE 4A.

PRODUCT WILL BE TRANSPORTED TO PROCESSING AREA ALONG HAUL ROUTE AS SHOWN BY TRUCK AND OR CONVEYOR SYSTEM. EXTRACTION WILL COMMENCE IN AREA 4A IN FIVE LIFTS EACH A MAXIMUM OF 7.5 M HIGH. SEVERAL LIFTS WILL BE WORKED AT THE SAME TIME. STAGE 4 WILL BE COMPLETED IN AREA 4B.

REHABILITATION OF STAGE 3 WILL BE COMPLETED PRIOR TO OR AT THE END OF EXTRACTION OF AREA 4A. REHABILITATION OF AREA 4A WILL COMMENCE USING TOPSOIL,SUBSOIL AND SELECT TREES FROM AREA 4B.

DURING THE EXTRACTION OF STAGE 4B, STRIPPING AND CLEARING OF STAGE 5 WILL COMMENCE. STAGE 5 WILL BE EXCAVATED UPON COMPLETION OF STAGE 4B.



FINAL STAGE

TOPSOIL AND SUBSOIL FROM BERMS AROUND THE PERIMETER OF STAGE 2 AND STAGE 3 EXCLUDING THOSE BERMS AROUND THE GARSIDE PROPERTY WILL BE USED FOR THE CONTINUED REHABILITATION OF AREA 4A. REHABILITATION OF STAGE 4A WILL BE COMPLETE WHEN EXTRACTION OF STAGE 4B IS COMPLETE OR EARLIER.

TEMPORARY HAUL ROADS FOR THE REMOVAL OF THE BERMS WILL BE ESTABLISHED AND REHABILITATED UPON COMPLETION.

UPON COMPLETION OF AREA 4B THE PROCESSING EQUIPMENT AS DESCRIBED ON DRAWING 2 OF 6 WILL BE REMOVED.

THE BERMS AROUND THE GARSIDE PROPERTY WILL THEN BE USED TO REHABILITATE AREA 4B AND STAGE 5.

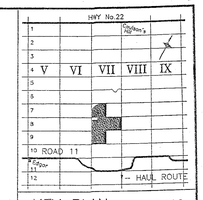
THE BERMS IN THE SETBACKS AROUND STAGE 1 WILL BE USED TO REHABILITATE THE PROCESSING AREA(IF ANY), HAUL ROAD AND REMAINING SLOPES.

ALL BUILDINGS WILL BE REMOVED FROM THE SITE.

THE REHABILITATED PIT WILL BE MADE SUITABLE FOR CONSERVATION OF THE LOCAL FLORA AND FAUNA AS SHOWN ON DRAWING 4 OF 6.

OVERRIDE OF REGULATION 702/89

No.	DESCRIPTION	REFERENCE TO REGUL.	COMMENTS
1.	MINING 15M SETBACK ALONG COMMON BORDER WITH PIT IN E 1/2 LOT 9	18(1)(a)	MUTUAL MINING OF SETBACKS BETWEEN TWO LICENCED PITS
2.	REMOVAL OF FENCING ALONG COMMON BORDER WITH PIT IN E 1/2 LOT 9	16(1)(a)	REMOVAL OF FENCE TO ALLOW FOR EXTRACTION. FENCE WILL BE REPLACED IMMEDIATELY UPON COMPLECTION OF THE ADJACENT SETBACK REHABILITATION.
3.	MINING OF 30m SETBACK ALONG 7th LINE AND REMOVAL OF FENCE	16(1)(a) 18(1)(a)	MINING OF AGGREGATE TO MATCH ROAD GRADE DURING ROAD RECONSTRUCTION. FENCE TO BE REPLACED IF REMOVED.



KEY PLAN 1:100,000
SCALE 0 1 2 3 4 km

LEGEND

- EXISTING VEGETATION SCREEN
- 15m PLANTED TREE SCREEN
- NOISE REDUCING BERM
- EXTRACTION AREA
- REHABILITATION AREA
- MAIN PROCESSING ENVELOPE
- 90m STOCKPILE SETBACK
- INTERIM PROCESSING ENVELOPE
- TOP OF SLOPE
- SINGLE LOADER ONLY
- LICENCED BOUNDARY
- LIMIT OF EXTRACTION
- DIRECTION OF EXTRACTION
- (S15) SETBACK DISTANCE IN METERS

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

DATE

SCALE 1:5000
50 25 0 100 200m

NO.	DATE	DESCRIPTION
1	JAN. 99	OMB APPROVAL
2		
3		
4		
5		

REVISION

KEEWATIN–ASKI LTD
CONSULTING ENGINEERS
CONCORD THUNDER BAY SIOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

PROJECT
JAMES DICK CONSTRUCTION SAND AND GRAVEL PIT, ORO
WEST 1/2 LOT 7, CONCESSION 7
WEST 1/2 LOT 8, CONCESSION 7
WEST 1/2 LOT 9, CONCESSION 7
EAST 1/2 LOT 8, CONCESSION 7
TOWNSHIP OF ORO
COUNTY OF SIMCOE

APPLICANT
JAMES DICK CONSTRUCTION LIMITED
P.O. BOX 470
BOLTON, ONTARIO
L7E 5T4

DRAWING TITLE
STAGING OF OPERATIONS & PROGRESSIVE REHABILITATION

REGISTERED PROFESSIONAL ENGINEER
J.W. HEFFERNAN
01/12/99
PROVINCE OF ONTARIO

DESIGN P.L./S.D.
DRAWN P.L./P.S./D.W.
SCALE 1 : 5000
DATE JAN. 12, 1999

PROJECT NUMBER 89651

DRAWING NUMBER 3 OF 6

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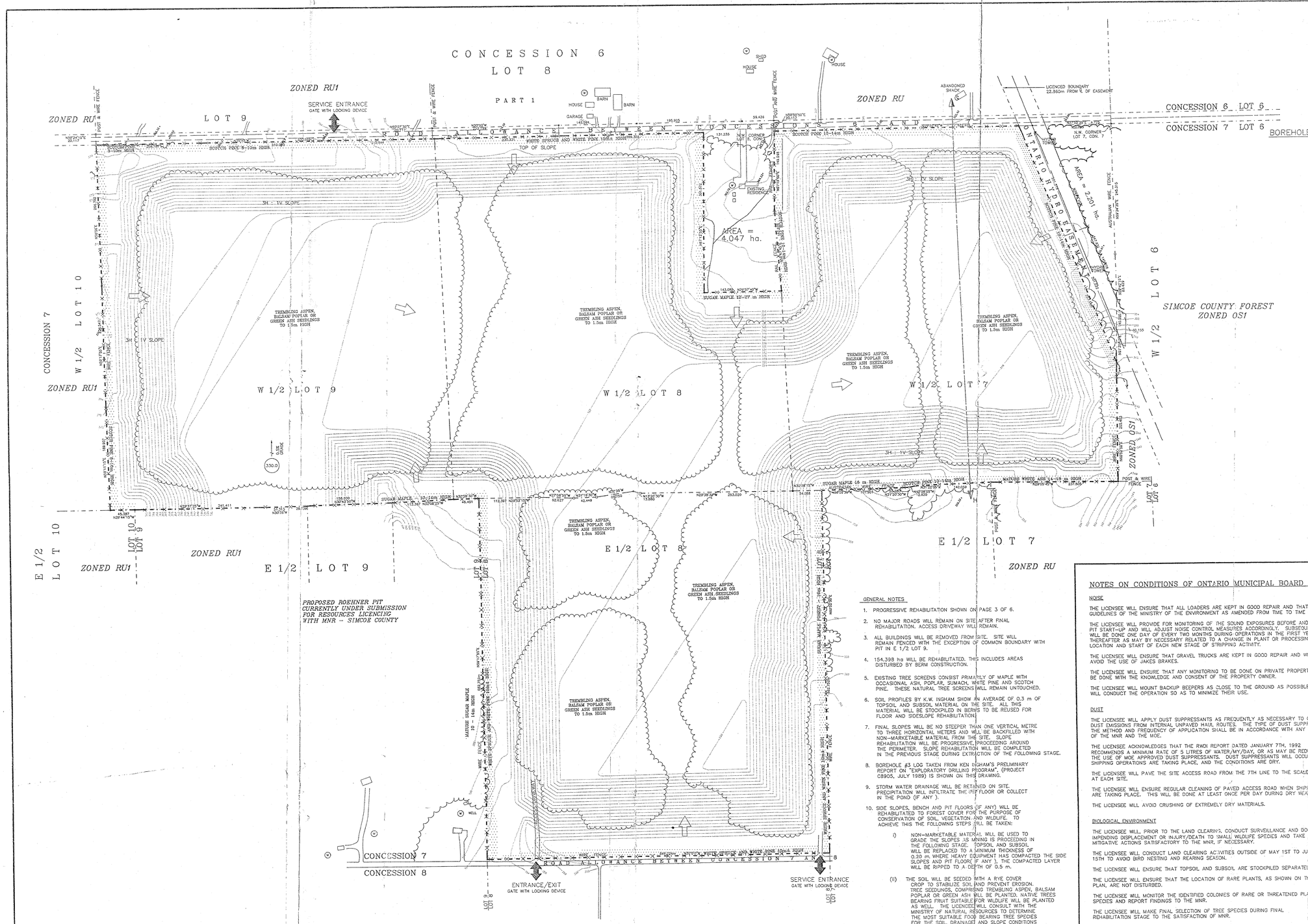
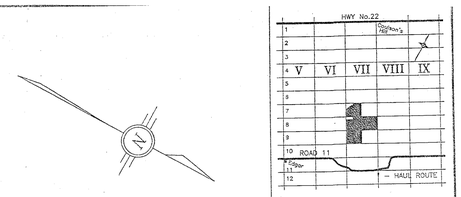




KEY PLAN 1:100,000
SCALE

LEGEND

- SQ. STANDARD IRON BAR
- SQ. IRON BAR
- WIRE FENCE
- LICENCED BOUNDARY
- TREE SCREEN
- NOISE REDUCING BERM
- TREES
- LOT LINE
- CONTOUR LINE (2 m INTERVAL)
- WELL
- DRAINAGE DIRECTION
- ENTRANCE/EXIT

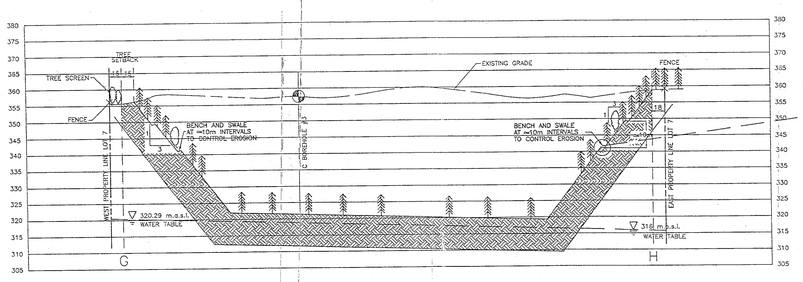
SOIL PROFILE

Section (Metres)

0	
0.15	SOIL
	GRAVEL Beds of fine to medium gravel interbedded with medium sand
9.8	
	SAND Beds of medium sand interbedded with fine gravel and course sand
18.3	
	GRAVEL Medium
21.3	
	SAND Interbedded medium and fine sand
25.3	
	SAND Fine
28.3	
	SAND Fine to medium
31.1	
	SAND Fine
34.1	
	SAND Fine to medium
38.7	

GENERAL NOTES

1. PROGRESSIVE REHABILITATION SHOWN ON PAGE 3 OF 6.
2. NO MAJOR ROADS WILL REMAIN ON SITE AFTER FINAL REHABILITATION. ACCESS DRIVEWAY WILL REMAIN.
3. ALL BUILDINGS WILL BE REMOVED FROM SITE. SITE WILL REMAIN FENCED WITH THE EXCEPTION OF COMMON BOUNDARY WITH PIT IN E 1/2 LOT 9.
4. 154.398 ha WILL BE REHABILITATED. THIS INCLUDES AREAS DISTURBED BY BERM CONSTRUCTION.
5. EXISTING TREE SCREENS CONSIST PRIMARILY OF MAPLE WITH OCCASIONAL ASH, POPLAR, SUMACH, WHITE PINE AND SCOTCH PINE. THESE NATURAL TREE SCREENS WILL REMAIN UNTOUCHED.
6. SOIL PROFILES BY K.W. INGHAM SHOW AN AVERAGE OF 0.3 m OF TOPSOIL AND SUBSOIL MATERIAL ON THE SITE. ALL THIS MATERIAL WILL BE STOCKPILED IN BERMS TO BE REUSED FOR FLOOR AND SIDESLOPE REHABILITATION.
7. FINAL SLOPES WILL BE NO STEEPER THAN ONE VERTICAL METRE TO THREE HORIZONTAL METERS AND WILL BE BACKFILLED WITH NON–MARKETABLE MATERIAL FROM THE SITE. SLOPE REHABILITATION WILL BE PROGRESSIVE PROCEEDING AROUND THE PERIMETER. SLOPE REHABILITATION WILL BE COMPLETED IN THE PREVIOUS STAGE DURING EXTRACTION OF THE FOLLOWING STAGE.
8. BOREHOLE #3 LOG TAKEN FROM KEN INGHAM'S PRELIMINARY REPORT ON "EXPLORATORY DRILLING PROGRAM", (PROJECT C8905, JULY 1989) IS SHOWN ON THIS DRAWING.
9. STORM WATER DRAINAGE WILL BE RETAINED ON SITE. PRECIPITATION WILL INFILTRATE THE PIT FLOOR OR COLLECT IN THE POND (IF ANY).
10. SIDE SLOPES, BENCH AND PIT FLOORS (IF ANY) WILL BE REHABILITATED TO FOREST COVER FOR THE PURPOSE OF CONSERVATION OF SOIL, VEGETATION AND WILDLIFE. TO ACHIEVE THIS THE FOLLOWING STEPS WILL BE TAKEN:
    - (i) NON–MARKETABLE MATERIAL WILL BE USED TO GRADE THE SLOPES AS MINING IS PROCEEDING IN THE FOLLOWING STAGE. TOPSOIL AND SUBSOIL WILL BE REPLACED TO A MINIMUM THICKNESS OF 0.30 m WHERE HEAVY EQUIPMENT HAS COMPACTED THE SIDE SLOPES AND PIT FLOORS (IF ANY). THE COMPACTED LAYER WILL BE RIPPED TO A DEPTH OF 0.5 m.
    - (ii) THE SOIL WILL BE SEEDED WITH A RYE COVER CROP TO STABILIZE SOIL AND PREVENT EROSION. TREE SEEDLINGS, COMPRISING TREMBLING ASPEN, BALSAM POPLAR OR GREEN ASH WILL BE PLANTED. NATIVE TREES BEARING FRUIT SUITABLE FOR WILDLIFE WILL BE PLANTED AS WELL. THE LICENCEE WILL CONSULT WITH THE MINISTRY OF NATURAL RESOURCES TO DETERMINE THE MOST SUITABLE FOOD BEARING TREE SPECIES FOR THE SOIL, DRAINAGE AND SLOPE CONDITIONS EXISTING AT TIME OF REHABILITATION. THE TREES WILL BE MACHINE PLANTED WHERE POSSIBLE AND HAND PLANTED OTHERWISE. TREES WILL BE PLANTED 2.0 m APART WITHIN ROWS AND ROWS WILL BE 2.0 m APART. IF SUITABLE FOR THIS SITE, THE TREES WILL BE PLANTED IN CLUSTERS LEAVING SOME OPEN SPACES FOR A MORE NATURAL WILDLIFE HABITAT.
    - (iii) COMPETING VEGETATION WILL BE KEPT CLEAR OF THE TREES FOR A PERIOD OF THREE YEARS TO ALLOW TREES TO ESTABLISH THEMSELVES. THIS WILL BE ACCOMPLISHED WITH M.N.R. AND M.O.E. APPROVED METHODS.
    - (iv) SOME TREE MORTALITY IS ANTICIPATED AND THE LICENCEE WILL REPLACE TREES IF THE MORTALITY RATE EXCEEDS 20 PERCENT AND WILL CONTINUE TO DO SO UNTIL A LEVEL OF FOREST COVER ACCEPTABLE TO THE MINISTRY OF NATURAL RESOURCES IS ATTAINED.
    - (v) ONCE THESE TREES HAVE BEEN ESTABLISHED, OTHER NATIVE SPECIES SUCH AS WHITE ASH, SUGAR MAPLE OR WHITE PINE WILL BE PLANTED AND MAINTAINED AS DISCUSSED IN PARAGRAPHS (iii) AND (iv). PLANTED TREES WILL BE SEEDLINGS TO 1.5 m HIGH.
11. DIMENSIONS SHOWN FROM S.I.B. TO S.I.B.
12. PLEASE REFER TO DRAWING 1 OF 6 FOR LIST OF REFERENCES.
13. BENCH LEADING TO ADJACENT PIT IN E1/2 LOT 9 WILL BE GRADED WITH A 0.5% GRADE SUCH THAT RUNOFF WILL NOT FLOW OFF SITE.
14. ALL EXCAVATION FACES WILL BE EXTRACTED TO THE LIMIT OF EXTRACTION AND WILL BE BACKFILLED WITH NON–MARKETABLE MATERIAL.



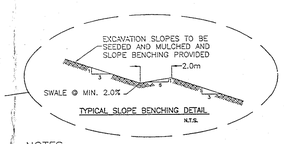
TYPICAL CROSS SECTION OF REHABILITATION

G – H CROSS–SECTION

WEST 1/2 LOT 7

VERT. SCALE AS SHOWN

HORZ. SCALE 1: 2500



TYPICAL SLOPE BENCHING DETAIL

N.T.S.

NOTES:

1. EROSION CONTROL BENCHES WILL BE AT 3% GRADE AND WILL BE AT ±10m VERTICAL INTERVALS. RIP–RAP WILL BE USED IN THE EROSION BENCHES AS NEEDED TO MAINTAIN INTEGRITY.

NOTES ON CONDITIONS OF ONTARIO MUNICIPAL BOARD APPROVAL

NOISE

THE LICENSEE WILL ENSURE THAT ALL LOADERS ARE KEPT IN GOOD REPAIR AND THAT THE GUIDELINES OF THE MINISTRY OF THE ENVIRONMENT AS AMENDED FROM TIME TO TIME ARE MET.

THE LICENSEE WILL PROVIDE FOR MONITORING OF THE SOUND EXPOSURES BEFORE AND AFTER PIT START–UP AND WILL ADJUST NOISE CONTROL MEASURES ACCORDINGLY. SUBSEQUENT MONITORING WILL BE DONE ONE DAY OF EVERY TWO MONTHS DURING OPERATIONS IN THE FIRST YEAR, AND THEREAFTER AS MAY BY NECESSARY RELATED TO A CHANGE IN PLANT OR PROCESSING EQUIPMENT LOCATION AND START OF EACH NEW STAGE OF STRIPPING ACTIVITY.

THE LICENSEE WILL ENSURE THAT GRAVEL TRUCKS ARE KEPT IN GOOD REPAIR AND WILL AVOID THE USE OF JAKES BRAKES.

THE LICENSEE WILL ENSURE THAT ANY MONITORING TO BE DONE ON PRIVATE PROPERTY WILL BE DONE WITH THE KNOWLEDGE AND CONSENT OF THE PROPERTY OWNER.

THE LICENSEE WILL MOUNT BACKUP BEEPERS AS CLOSE TO THE GROUND AS POSSIBLE AND WILL CONDUCT THE OPERATION SO AS TO MINIMIZE THEIR USE.

DUST

THE LICENSEE WILL APPLY DUST SUPPRESSANTS AS FREQUENTLY AS NECESSARY TO CONTROL DUST EMISSIONS FROM INTERNAL UNPAVED HAUL ROUTES. THE TYPE OF DUST SUPPRESSANTS, THE METHOD AND FREQUENCY OF APPLICATION SHALL BE IN ACCORDANCE WITH ANY REQUIREMENTS OF THE MNR AND THE MOE.

THE LICENSEE ACKNOWLEDGES THAT THE RWDI REPORT DATED JANUARY 7TH, 1992 RECOMMENDS A MINIMUM RATE OF 5 LITRES OF WATER/M²/DAY, OR AS MAY BE REDUCED WITH THE USE OF MOE APPROVED DUST SUPPRESSANTS. DUST SUPPRESSANTS WILL OCCUR WHEN SHIPPING OPERATIONS ARE TAKING PLACE, AND THE CONDITIONS ARE DRY.

THE LICENSEE WILL PAVE THE SITE ACCESS ROAD FROM THE 7TH LINE TO THE SCALE HOUSE AT EACH SITE.

THE LICENSEE WILL ENSURE REGULAR CLEANING OF PAVED ACCESS ROAD WHEN SHIPPING OPERATIONS ARE TAKING PLACE. THIS WILL BE DONE AT LEAST ONCE PER DAY DURING DRY WEATHER

THE LICENSEE WILL AVOID CRUSHING OF EXTREMELY DRY MATERIALS.

BIOLOGICAL ENVIRONMENT

THE LICENSEE WILL, PRIOR TO THE LAND CLEARING, CONDUCT SURVEILLANCE AND DOCUMENT IMPENDING DISPLACEMENT OR INJURY/DEATH TO SMALL WILDLIFE SPECIES AND TAKE MITIGATIVE ACTIONS SATISFACTORY TO THE MNR, IF NECESSARY.

THE LICENSEE WILL CONDUCT LAND CLEARING ACTIVITIES OUTSIDE OF MAY 1ST TO JULY 15TH TO AVOID BIRD NESTING AND REARING SEASON.

THE LICENSEE WILL ENSURE THAT TOPSOIL AND SUBSOIL ARE STOCKPILED SEPARATELY.

THE LICENSEE WILL ENSURE THAT THE LOCATION OF RARE PLANTS, AS SHOWN ON THE SITE PLAN, ARE NOT DISTURBED.

THE LICENSEE WILL MONITOR THE IDENTIFIED COLONIES OF RARE OR THREATENED PLANT SPECIES AND REPORT FINDINGS TO THE MNR.

THE LICENSEE WILL MAKE FINAL SELECTION OF TREE SPECIES DURING FINAL REHABILITATION STAGE TO THE SATISFACTION OF MNR.

HYDROGEOLOGY

THE LICENSEE WILL CONDUCT A WATER QUANTITY AND QUALITY MONITORING PROGRAM IN ACCORDANCE WITH GROUNDWATER MONITORING PROGRAM ESTABLISHED BY DIXON HYDROGEOLOGY TO THE SATISFACTION OF THE MINISTRY OF NATURAL RESOURCES.

THE LICENSEE WILL ENSURE THAT EXCAVATION REMAINS AT LEAST 1.5 METRES ABOVE THE HIGH WATER TABLE IN ADDITION TO AN ALLOWANCE FOR ANTICIPATED WATER TABLE MOUNDING AS VERIFIED THROUGH THE MONITORING PROGRAM.

THE LICENSEE WILL ENSURE THAT ANY APPLICATION TO THE MOE FOR A PERMIT TO TAKE WATER ASSESSES CUMULATIVE IMPACT ON PRIVATE WELLS.

THE LICENSEE WILL ENSURE THAT , IF CALCIUM CHLORIDE IS USED AS A DUST SUPPRESSANT, ITS ANNUAL APPLICATION WILL BE LIMITED TO MEET THE MOE POLICY 15.08, AS AMENDED FROM TIME TO TIME. WHERE CALCIUM CHLORIDE IS BEING USED AS A DUST SUPPRESSANT, IT WILL BE INCLUDED IN THE ANNUAL MONITORING DOWNGRADIENT.

THE LICENSEE WILL IMPLEMENT A SPILLS CLEANUP PROGRAM AS APPROVED BY THE MOE IN THE RECOMMENDED PROCEDURES FOR THE PREVENTION AND MITIGATION OF CONTAMINANT SPILLS IN GRAVEL PITS.

GENERAL

THE LICENSEE WILL, AT THE REQUEST OF THE MINISTRY OF NATURAL RESOURCES, MEET WITH ANY RESIDENT OR RESIDENTS OF THE MUNICIPALITY WITH RESPECT TO ANY CONCERN OVER ANY INDIVIDUAL PIT OPERATION OR THE RESULTS OF CUMULATIVE PIT OPERATIONS AND REHABILITATION.

THE LICENSEE WILL LIMIT THE EXTRACTION OPERATIONS TO THE HOURS OF 6:00 A.M. THROUGH 7:00 P.M. WEEKDAYS. THESE ACTIVITIES SHALL NOT BE CARRIED OUT ON SATURDAYS, SUNDAYS OR ON STATUTORY HOLIDAYS.

THE LICENSEE WILL PROVIDE INFORMATION ON MAJOR AND MINOR SITE PLAN REVISION REQUESTS TO THE MUNICIPALITY AND TO THE ADJOINING PROPERTY OWNER(S) WHERE, AS DETERMINED BY THE MNR, THERE IS POTENTIAL TO HAVE NOTICEABLE IMPACT.

THE LICENSEE WILL APPOINT REPRESENTATIVE(S) TO A LIAISON COMMITTEE COMPRISED OF REPRESENTATIVES OF THE PUBLIC, AGGREGATE INDUSTRY AND MUNICIPALITY. INCLUDED IN THE OBJECTIVES OF THIS COMMITTEE WILL BE PROBLEM PREVENTION AND DEVELOPING A BASIS FOR EQUITABLE SOLUTIONS TO PROBLEMS ASSOCIATED WITH AGGREGATE DEVELOPMENT.

THE LICENSEE WILL INSTALL AND MAINTAIN ANY NECESSARY YARD AND ENTRANCE LIGHTING WITHSHIELDING SO AS NOT TO CAUSE OFF–SITE EFFECTS INCLUDING ILLUMINATION OF NIGHT SKY.

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

DATE

SCALE 1:2500

metres 60 40 20 0 50 100 150

NO.	DATE	DESCRIPTION
1	JAN. 99	OMB APPROVAL
2		
3		
4		
5		

REVISION

KEEWATIN–ASKI LTD
CONSULTING ENGINEERS
CONCORD THUNDER BAY SIOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

PROJECT

JAMES DICK CONSTRUCTION SAND AND GRAVEL PIT, ORO

WEST 1/2 LOT 7, CONCESSION 7
WEST 1/2 LOT 8, CONCESSION 7
WEST 1/2 LOT 9, CONCESSION 7
EAST 1/2 LOT 9, CONCESSION 7
TOWNSHIP OF ORO
COUNTY OF SIMCOE

APPLICANT

JAMES DICK CONSTRUCTION LIMITED

P.O. BOX 470
BOLTON, ONTARIO
L7E 5T4

DRAWING TITLE

PROGRESSIVE REHABILITATION & FINAL REHABILITATION PLAN

REGISTERED PROFESSIONAL ENGINEER
J.W. HETTEMAN
01/12/99
PROVINCE OF ONTARIO

DESIGN	P.L./S.D.
DRAWN	P.L./P.S./D.W.
SCALE	1:2500
DATE	JAN. 12, 1999

PROJECT NUMBER	DRAWING NUMBER
89651	4 OF 6

CAD FILE: ORORDHA.DWG

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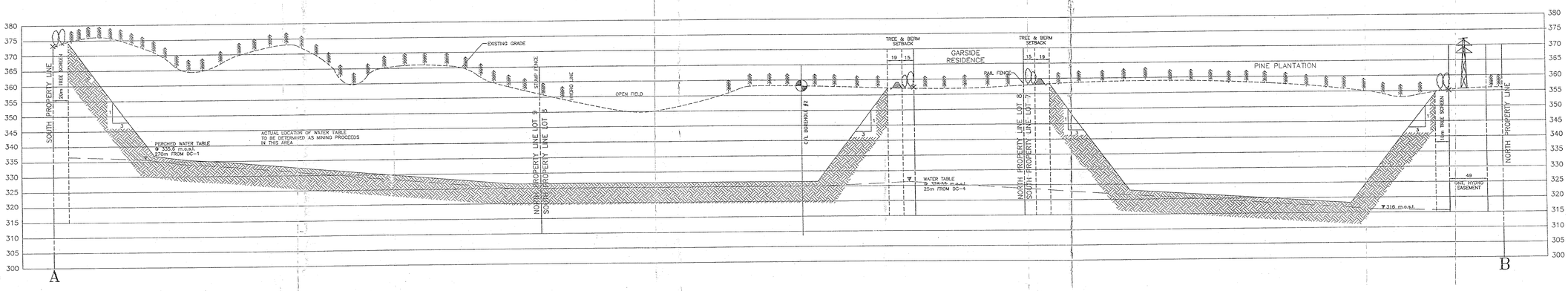
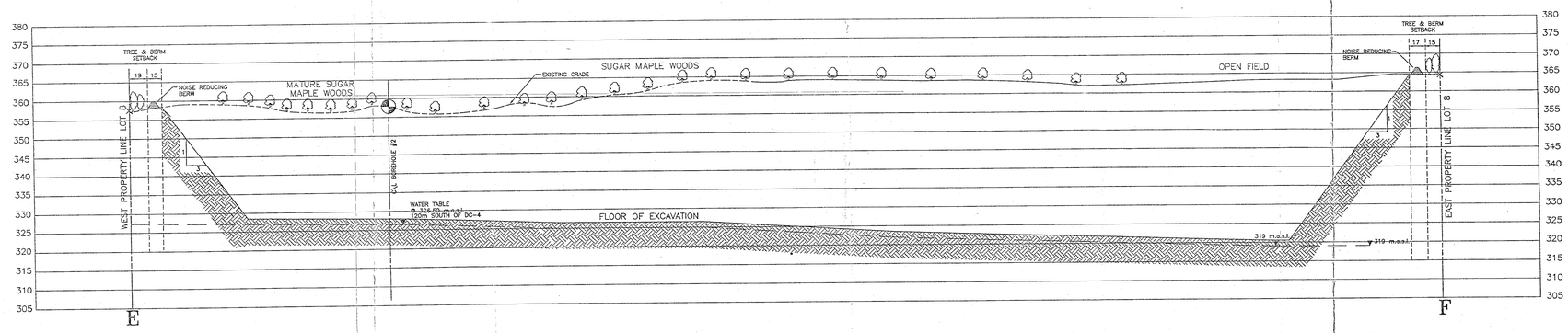


NORTH – SOUTH CROSS-SECTION [A–B]

W 1/2 LOTS 7 8 9

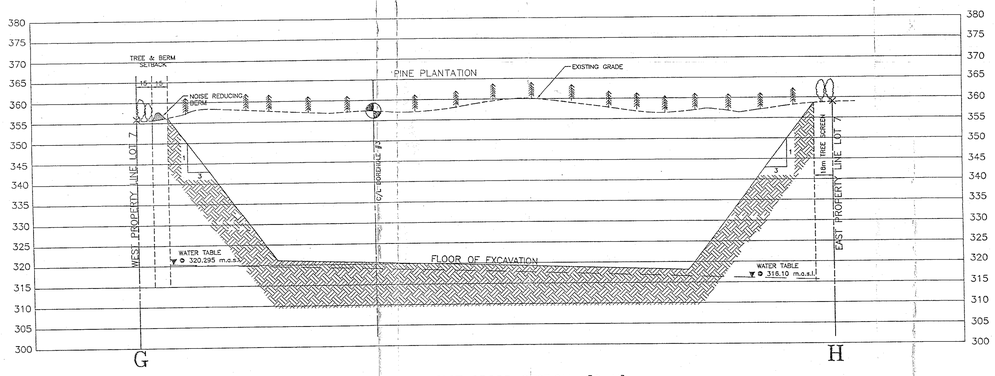
VERT. SCALE AS SHOWN
HORZ. SCALE 1:2000



WEST – EAST CROSS-SECTION [E–F]

WEST 1/2 LOT 8

VERT. SCALE AS SHOWN
HORZ. SCALE 1:2000



WEST – EAST CROSS-SECTION [G–H]

WEST 1/2 LOT 7

VERT. SCALE AS SHOWN
HORZ. SCALE 1:2000

NOTES:

1. SLOPE BENCHING DETAIL WILL BE FOUND ON DRAWING 4 OF 6.
2. EXACT DETAILS OF EXCAVATION WILL BE DETERMINED BY GEOLOGICAL AND GROUND WATER CONDITIONS. AS FOUND DURING EXCAVATION AND AS APPROVED BY MINISTRY OF NATURAL RESOURCES.

ADDITIONAL NOTES

NOISE MONITORING AND MITIGATION

THE ENFORCEMENT OF NOISE REGULATION FALLS UNDER THE JURISDICTION OF THE MINISTRY OF THE ENVIRONMENT.

AS RECOMMENDED BY THE NOISE CONSULTANT (REFERENCED ON DRAWING 1 OF 6), THE FOLLOWING MEASURES PERTAINING TO NOISE MITIGATION WILL BE TAKEN:

a) NOISE REDUCING BERMS AS DETAILED ON DRAWING 2 OF 6 WILL BE CONSTRUCTED AND WILL BE MAINTAINED FOR THE LIFE OF THE PIT.

b) FRONT END LOADER RESTRICTIONS AS SHOWN ON DRAWING 2 OF 6 WILL BE FOLLOWED.

c) THE ENTRANCE ROAD FROM THE 7TH LINE TO THE SCALE HOUSE WILL BE PAVED. THE ROAD WILL BE WELL MAINTAINED AND FREE OF POTHOLES AND DISTURBANCES FOR A DISTANCE OF 200 m FROM THE 7TH LINE.

d) THE CRUSHER WILL BE INSTALLED UNDERGROUND AS DETAILED ON DRAWING 2 OF 5.

e) ALL EQUIPMENT WILL MEET THE NOISE GUIDELINE NPC–115.

f) MONITORING OF NOISE LEVELS DURING PIT START–UP WILL BE PERFORMED TO ENSURE THAT THE SOUND LEVEL LIMITS AS OUTLINED IN THE NOISE STUDY (REFERENCE 8 ON DRAWING 1 OF 6) AND AS REQUIRED BY THE MINISTRY OF THE ENVIRONMENT, ARE SATISFIED.

g) EXTRACTION WILL PROGRESS SEQUENTIALLY FROM STAGE 1 TO STAGE 5.

h) PIT FACES AND TEMPORARY STOCKPILES WILL BE KEPT BETWEEN EQUIPMENT AND RESIDENCES TO THE GREATEST EXTENT AS POSSIBLE.

i) THE LICENCEE WILL RESPOND TO OBJECTIONS RELATING TO NOISE BY RESIDENTS, THE MINISTRY OF NATURAL RESOURCES OR THE MOE. IF DEEMED NECESSARY BY THE MOE LICENCEE WILL MONITOR AND MITIGATE NOISE IMPACTS OF THE OPERATION.

j) SHOULD MONITORING ESTABLISH THAT EXCESSIVE NOISE LEVELS EXIST, THE LICENCEE WILL IMPLEMENT ADDITIONAL MITIGATION MEASURES.

NOTE REGARDING MEETING WITH LOCAL RESIDENTS

THE OPERATOR AGREES, AT THE REQUEST OF THE MINISTRY OF NATURAL RESOURCES, TO MEET WITH ANY RESIDENT OR RESIDENTS OF THE MUNICIPALITY WITH RESPECT TO ANY CONCERN OVER ANY INDIVIDUAL PIT OPERATION OR THE RESULTS OF CUMULATIVE PIT OPERATION AND REHABILITATION.

ISSUES PERTAINING TO GROUNDWATER

THE ENFORCEMENT OF GROUNDWATER REGULATION FALLS UNDER JURISDICTION OF THE MINISTRY OF THE ENVIRONMENT.

AS RECOMMENDED BY THE HYDROGEOLOGICAL CONSULTANT (REFERENCED ON DRAWING 1 OF 6), THE FOLLOWING MEASURES PERTAINING TO GROUNDWATER WILL BE TAKEN:

a) BI–MONTHLY MONITORING OF WATER TABLE FOR FIRST YEAR OF OPERATION AND QUARTERLY READING THEREAFTER. WELLS TO BE INCLUDED IN MONITORING PROGRAM ARE M6, DC–1, DC–2, DC–4 AND DC–5.

b) WATER SAMPLES WILL BE OBTAINED FROM MONITORS M6 AND DC–4 PRIOR TO COMMENCEMENT OF EXCAVATION. SAMPLES WILL BE ANALYZED FOR MAJOR IONS, pH, CONDUCTIVITY AND ALKALINITY.

c) WITH PERMISSION OF THE OWNERS, WATER LEVELS IN DOMESTIC WELLS WITHIN 300 m OF THE SITE WILL BE MEASURED PRIOR TO COMMENCEMENT OF EXTRACTION.

d) ADDITIONAL HYDROGEOLOGICAL INVESTIGATIONS AND A PERMIT TO TAKE WATER WILL BE OBTAINED PRIOR TO THE COMMENCEMENT OF WASHING OPERATIONS. A MONITORING WELL WILL BE INSTALLED IN THE SAME AQUIFER FROM WHICH THE WASH WATER WILL BE EXTRACTED.

e) ADDITIONAL MONITORING STATIONS WILL BE ADDED AS EXTRACTION ACTIVITY PROCEEDS IF DEEMED NECESSARY THROUGH CONSULTATION WITH THE MINISTRY OF NATURAL RESOURCES AND/OR THE MINISTRY OF THE ENVIRONMENT.

f) ALL MONITORING DATA WILL BE MADE AVAILABLE TO THE GOVERNMENT AGENCIES UPON REQUEST.

g) WITH PERMISSION OF THE HOME OWNERS, WATER SAMPLES FROM DOMESTIC WELLS WITH 300 m OF THE SITE WILL BE OBTAINED AND ANALYZED FOR PARAMETERS SUCH AS: GENERAL CHEMISTRY, PHENOLS, LUBRICANTS, FUELS AND SOLVENTS.

h) IN THE EVENT OF A CONTAMINANT SPILL, THE LICENCEE WILL INVOKE SPILL CONTINGENCY MEASURES AS OUTLINED IN THE "RECOMMENDED PROCEDURES FOR PREVENTION AND MITIGATION OF CONTAMINANT SPILLS IN GRAVEL PITS".

DUST CONTROL MEASURES

THE ENFORCEMENT OF DUST REGULATIONS FALLS UNDER THE JURISDICTION OF THE MINISTRY OF THE ENVIRONMENT.

THE FOLLOWING MEASURES PERTAINING TO DUST MITIGATION WILL BE TAKEN BY THE LICENCEE:

a) WATER AND/OR MOE APPROVED DUST SUPPRESSANTS WILL BE USED AS REQUIRED TO CONTROL DUST. THE APPLICATION OF DUST SUPPRESSANTS WILL BE CONDUCTED IN ACCORDANCE WITH MOE POLICY 15–08.

b) CONSTRUCT AND MAINTAIN BERMS AS SHOWN ON FIGURE 2 OF 6.

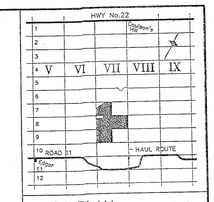
c) CONDUCT PROCESSING OPERATIONS AT THE LOWEST POSSIBLE ELEVATIONS.

d) LIMIT STOCKPILES TO HEIGHT OF 12 METRES.

e) RESPOND TO OBJECTIONS RELATING TO DUST BY RESIDENTS, THE MNR AND/OR THE MOE. DUST MITIGATION MEASURES AND/OR DUST MONITORING WILL BE ADDED IF DEEMED NECESSARY BY THE MOE.

f) THE ENTRANCE ROAD TO THE PIT WILL BE PAVED FROM THE 7TH LINE TO THE SCALE HOUSE AND THE PAVEMENT WILL BE CLEANED DAILY IF NEEDED.

g) LICENCEE WILL FEED MATERIAL DIRECTLY FROM EXTRACTION FACE TO CRUSHER.



KEY PLAN 1:100,000

SCALE 0 1 2 3 4 km

METRIC
ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE SHOWN

LEGEND

- WIRE FENCE
- BOREHOLE
- BOREHOLE WITH MONITOR INSTALLED
- ESTIMATED FINAL POND ELEVATION
- GROUNDWATER ELEVATION (JULY 1991)

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

DATE

SCALE 1:2000

40 20 0 50 100m

NO.	DATE	DESCRIPTION
1	JAN. 99	OWB APPROVAL
2		
3		
4		
5		

REVISION

KEEWATIN–ASKI LTD
CONSULTING ENGINEERS
CONCORD
THUNDER BAY
SOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS A LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

PROJECT
JAMES DICK CONSTRUCTION SAND AND GRAVEL PIT, ORO
WEST 1/2 LOT 7, CONCESSION 7
WEST 1/2 LOT 8, CONCESSION 7
WEST 1/2 LOT 9, CONCESSION 7
EAST 1/2 LOT 8, CONCESSION 7
TOWNSHIP OF ORO
COUNTY OF SIMCOE

APPLICANT
JAMES DICK CONSTRUCTION LIMITED
P.O. BOX 470
BOLTON, ONTARIO
L7E 5T4

DRAWING TITLE
TYPICAL CROSS–SECTIONS
EAST – WEST
NORTH – SOUTH

REGISTERED PROFESSIONAL ENGINEER
J.W. HEFFERMAN
01/12/99
PROVINCE OF ONTARIO

DESIGN A.R./P.L./S.D.
DRAWN P.L./P.S./D.W.
SCALE AS SHOWN
DATE JAN. 12, 1999

PROJECT NUMBER 89651

DRAWING NUMBER 5 OF 6

CAD FILE: DROP-VP3.DWG

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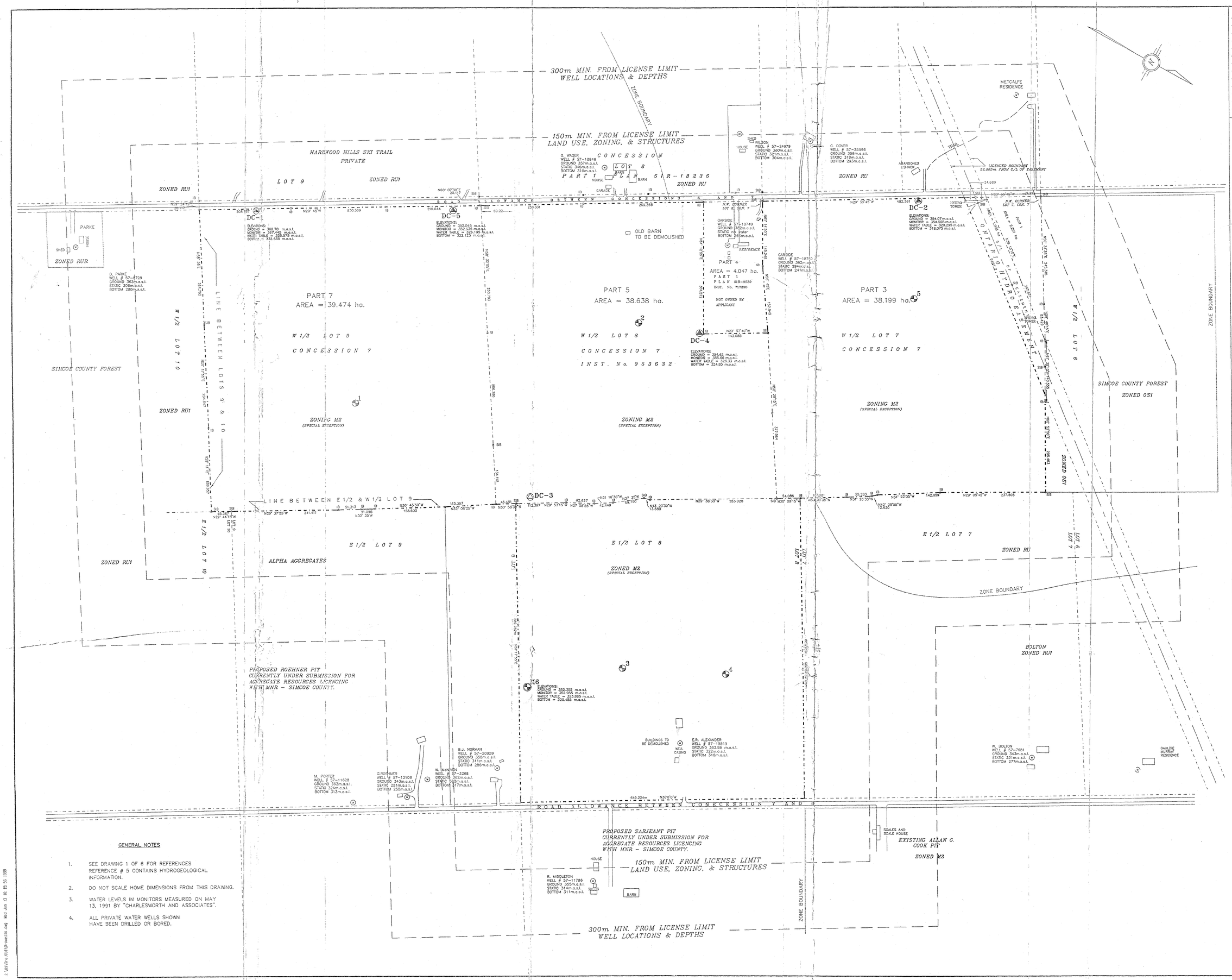
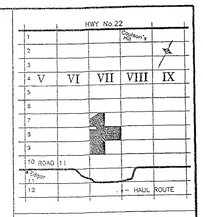


GENERAL NOTES

1. SEE DRAWING 1 OF 6 FOR REFERENCES REFERENCE # 5 CONTAINS HYDROGEOLOGICAL INFORMATION.
2. DO NOT SCALE HOME DIMENSIONS FROM THIS DRAWING.
3. WATER LEVELS IN MONITORS MEASURED ON MAY 13, 1991 BY "CHARLESWORTH AND ASSOCIATES".
4. ALL PRIVATE WATER WELLS SHOWN HAVE BEEN DRILLED OR BORED.



KEY PLAN 1:100,000

SCALE 0 1 2 3 4 km

LEGEND

- SQ. STANDARD IRON BAR
- SQ. IRON BAR
- AREA TO BE LICENCED
- EXISTING WOOD ROADS
- BOREHOLE (INGHAM, 1989)
- BOREHOLE WITH MONITOR (INGHAM, 1989)
- BOREHOLE WITH MONITOR (CHARLESWORTH, 1991)
- BOREHOLE (CHARLESWORTH, 1991)
- WELL
- WELL - LOCATION AND DEPTH UNDETERMINED
- m.a.s.l. METRES ABOVE SEA LEVEL (ALL ELEVATIONS IN m.a.s.l.)
- PROPERTY LINE
- ZONE BOUNDARY
- LOT LINE

I ACKNOWLEDGE AND SHALL CARRY ON MY OPERATION IN ACCORDANCE WITH THIS SITE PLAN UPON WHICH MY LICENCE IS BASED.

LICENCEE/APPLICANT

DATE

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE

DATE

SCALE 1:2500

40 20 0 50 100 m

NO.	DATE	DESCRIPTION
1	JAN. 99	OMB APPROVAL
2		
3		
4		
5		

REVISION

KEEWATIN-ASKI LTD
CONSULTING ENGINEERS
CONCORD
THUNDER BAY
SOUX LOOKOUT

DECLARATION OF PURPOSE:

THIS SITE PLAN IS PREPARED FOR SUBMISSION TO THE MINISTRY OF NATURAL RESOURCES IN CONJUNCTION WITH AN APPLICATION FOR A CLASS "A" LICENCE UNDER THE AGGREGATE RESOURCES ACT AND REGULATIONS.

PROJECT

JAMES DICK CONSTRUCTION SAND AND GRAVEL PIT, ORO

WEST 1/2 LOT 7, CONCESSION 7
WEST 1/2 LOT 8, CONCESSION 7
WEST 1/2 LOT 9, CONCESSION 7
EAST 1/2 LOT 8, CONCESSION 7
TOWNSHIP OF ORO
COUNTY OF SIMCOE

APPLICANT

JAMES DICK CONSTRUCTION LIMITED

P.O. BOX 470
BOLTON, ONTARIO
L7E 5T4

DRAWING TITLE

WELL LOCATION PLAN

REGISTERED PROFESSIONAL ENGINEER
J.W. REFFERNAN
01/12/99
PROVINCE OF ONTARIO

DESIGN P.L./S.D.
DRAWN P.L./P.S./O.W.
SCALE 1:2500
DATE JAN. 12, 1999

PROJECT NUMBER 89651

DRAWING NUMBER 6 OF 6

DAD FILE: ORO\WELL.DWG