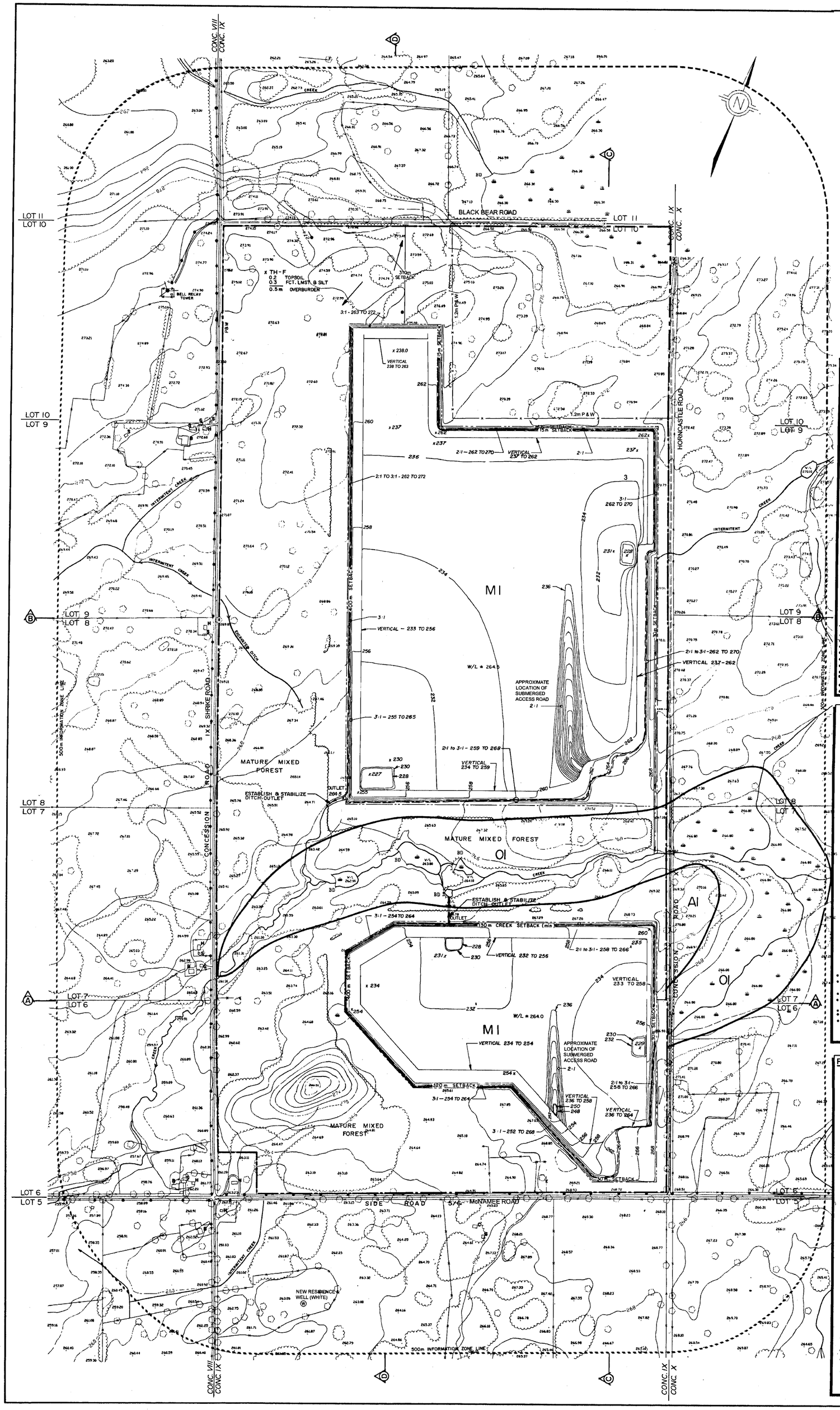
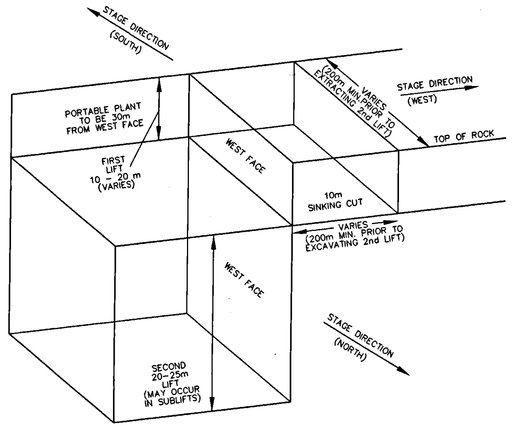




TYPICAL EXTRACTION PATTERN RELATIVE TO WEST DIRECTION

REFERENCE MATERIAL

OLIVER, MANGIONE, MCCALLA & ASSOCIATES LIMITED, "HYDROTECHNICAL REPORT", APRIL 1995.

FINAL REHABILITATION

1) FINAL SLOPES ARE TO BE ESTABLISHED BY RELOCATING PERIMETER BERM MATERIAL OR UNMARKETABLE MATERIAL AND SLOPING AT 3:1 (2:1 MINIMUM) FROM ORIGINAL GROUND TO THE PERIMETER BENCH AND STABILIZING. TOPSOIL RESERVES STOCKPILED ON BERM SCREENS MUST BE STRIPPED, TEMPORARILY STOCKPILED, THEN REAPPLIED TO FINAL SLOPES AND PREPARED FOR HYDROSEEDING WITH A MIXTURE OF CROWNVETCH. UNDESIRABLE AGGREGATE MATERIAL IS TO BE UTILIZED TO PROGRESSIVELY ESTABLISH FINAL PERIMETER SLOPES.

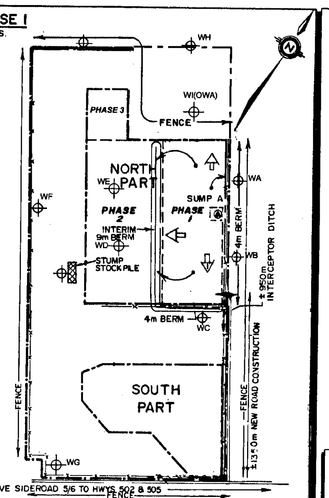
2) REMOVE ALL PLANT, MACHINERY, STUMP STOCKPILE, EQUIPMENT, SCRAP, FUEL STORAGE FACILITIES, AND UNDERTAKE A GENERAL SITE CLEAN-UP OF ANY SOURCE OF POTENTIAL CONTAMINATION. REMOVE PUMP SYSTEMS AND ALLOW TO FLOOD AFTER PERIMETER SLOPES HAVE STABILIZED.

3) FINAL NORTH PART LAKE ELEVATION = ±264.5 WITH OUTLET AT SOUTHWEST CORNER OF LAKE. FINAL SOUTH PART LAKE ELEVATION = ±264.0 WITH OUTLET AT NORTH SIDE NEAR WEST END OF LAKE. ESTIMATED FINAL WATER LEVELS ARE BASED ON TOPOGRAPHIC INTERPOLATION OF CONTROLLING ELEVATIONS.

4) INTERCEPTOR DITCH ON EAST LIMIT OF NORTH PART TO REMAIN TO AVOID THE POSSIBILITY OF LAKE CONTAMINATION BY SURFACE RUNOFF FROM UPSTREAM AGRICULTURAL LANDS.

5) UPON SITE FINAL REHABILITATION, THE APPLICABLE PROPOSED LAND USE DESIGNATION UNDER THE PRESENT OFFICIAL PLAN WOULD BE SHORELINE. APPLICABLE ZONING CATEGORIES WOULD INCLUDE: C3 – COMMERCIAL RECREATION, OR C4 – COMMERCIAL CAMPGROUND, OR RR2 – RURAL RESIDENTIAL TYPE TWO.

PHASE I
N.T.S.

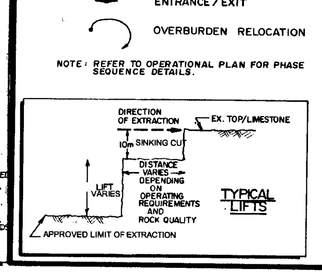


- IMPROVE SIDEROAD 5/6 TO HWYS 502 & 505
- INSTALL ADDITIONAL MONITORING WELLS AS REQUIRED
- CONSTRUCT INTERCEPTOR DITCH
- STRIP PHASE 1 & CONSTRUCT INTERIM & PERIMETER BERM & STABILIZE WITH SEED
- REINSTATE/ERECT PERIMETER 1.2m POST & WIRE FENCING & ERECT ENTRANCE GATE.
- CONSTRUCT ±1350m OF MUNICIPAL ROAD & IMPROVEMENTS TO SIDEROAD 5/6
- ESTABLISH SCALE HOUSE & OFFICE.
- EXTRACT PH. 1 - STAGE 1 & CONSTRUCT SUMP A AND INSTALL DEWATERING WORKS.
- ESTABLISH FINAL SLOPES ON PERIMETER BENCH AS EXTRACTION PROCEEDS USING UNMARKETABLE AGGREGATE, STABILIZE WITH TOPSOIL & HYDROSEED
- EXTRACT STAGES 2 THEN 3
- STAGES TO OCCUR IN SEQUENTIAL LIFTS

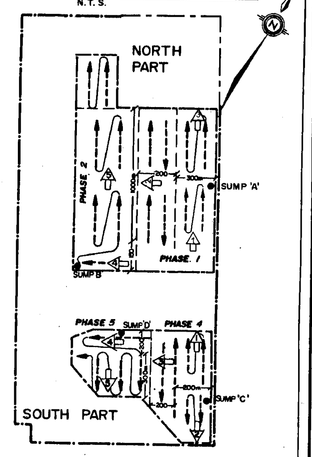
LEGEND

- PROPOSED MONITORING WELL
- STAGE & DIRECTION OF EXTRACTION
- PHASE LIMIT
- TREES
- FENCE
- BERMS
- DITCH / DRAINAGE OUTLET
- PUMP(S)
- SLOPE
- ENTRANCE / EXIT
- OVERBURDEN RELOCATION

NOTE: REFER TO OPERATIONAL PLAN FOR PHASE SEQUENCE DETAILS.

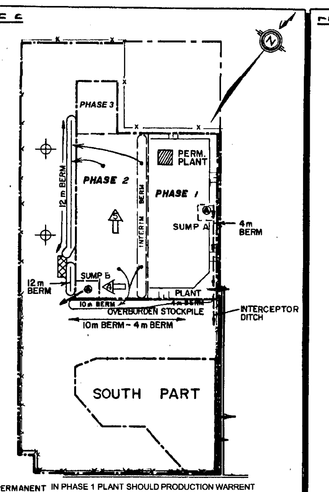


GENERAL BLASTING/EXTRACTION PATTERNS
N.T.S.



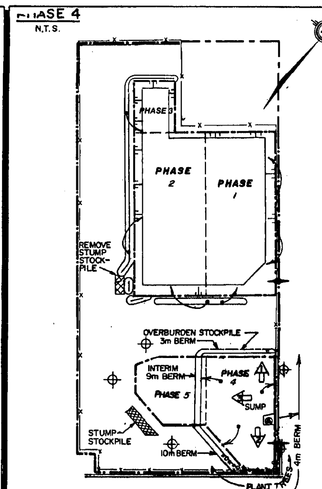
- PROPOSED BLASTING/EXTRACTION PATTERNS ARE BASED ON DRAINAGE & NOISE ATTENUATION REQUIREMENTS.
- PORTABLE PLANT TO BE WITHIN 30-50m OF WEST FACE
- GENERAL PATTERN IS NORTH/SOUTH WITH OVERALL PROGRESSION TOWARDS THE WEST.

PHASE 2
N.T.S.



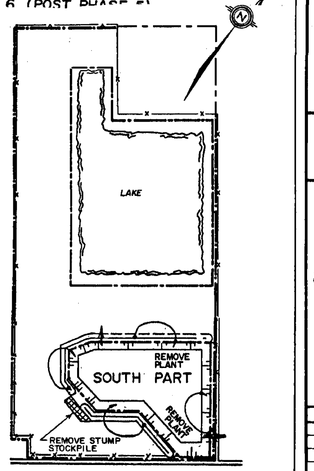
- ERECT PERMANENT IN PHASE 1 PLANT SHOULD PRODUCTION WARRENT
- PROGRESSIVELY STRIP PHASE 2, REMOVE INTERIM BERM & CONSTRUCT PERIMETER BERMS
- PLANT PERIMETER BERMS
- EXTRACT PHASE 2 - STAGE 4 & CONSTRUCT SUMP B & OUTLET DITCH, INSTALL DEWATERING WORKS
- EXTRACT PHASE 2 - STAGE 5. ±STAGES TO OCCUR IN SEQUENTIAL LIFTS
- INSTALL ADDITIONAL MONITORING WELLS AS REQUIRED
- ESTABLISH FINAL SLOPES ON PERIMETER BENCH AS EXTRACTION PROCEEDS USING UNMARKETABLE AGGREGATE, STABILIZE WITH TOPSOIL & HYDROSEED

PHASE 4
N.T.S.



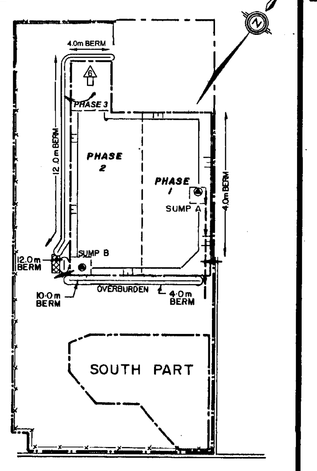
- INSTALL ADDITIONAL MONITORING WELLS AS REQUIRED
- MOVE SCALE HOUSE, OFFICE TO S. PART & REMOVE PERMANENT PLANT
- PROGRESSIVELY STRIP PHASE 4, CONSTRUCT INTERIM & PERIMETER BERM, PLANT TREES & STABILIZE WITH TOPSOIL & SEED
- EXTRACT PHASE 4 - STAGE 1, CONSTRUCT SUMP C & INSTALL DEWATERING WORKS.
- CONCURRENTLY COMPLETE FINAL SLOPES AROUND PERIMETER OF N.PART
- EXTRACT PHASE 4 - STAGE 2. ±STAGES TO OCCUR IN SEQUENTIAL LIFTS

PHASE 6 (POST PHASE 5)
N.T.S.



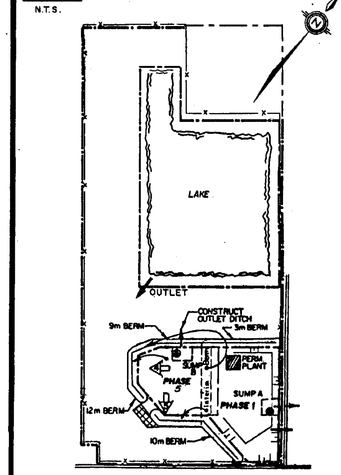
- COMPLETE EXTRACTION OF SOUTH PART - STAGE 5
- REMOVE SCALE HOUSE, OFFICE, PLANT & STUMP STOCKPILE
- COMPLETE FINAL SLOPES AROUND PERIMETER OF SOUTHERN PART

PHASE 3
N.T.S.



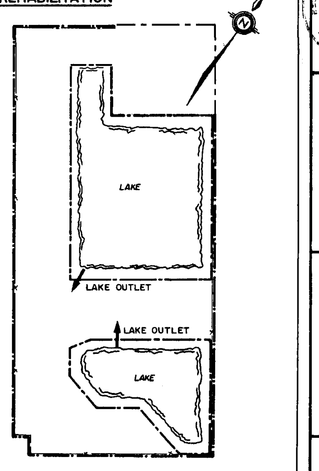
- STRIP PHASE 3 & CONSTRUCT REMAINING PERIMETER BERM SCREEN & STABILIZE
- PLANT TREES ON PERIMETER BERM
- EXTRACT PHASE 3-STAGE 6. STAGES TO OCCUR IN SEQUENTIAL LIFTS
- ESTABLISH FINAL SLOPES ON PERIMETER BENCH AS EXTRACTION PROCEEDS USING UNMARKETABLE AGGREGATE, STABILIZE WITH TOPSOIL & HYDROSEED

PHASE 5
N.T.S.

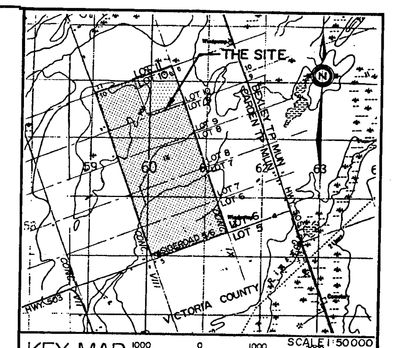


- ERECT PERMANENT PLANT SHOULD PRODUCTION WARRENT
- REMOVE INTERIM BERM & STRIP PHASE 5
- CONSTRUCT REMAINING PERIMETER BERMS & PLANT
- EXTRACT PHASE 5 - STAGE 4 & CONSTRUCT SUMP B & OUTLET DITCH, INSTALL DEWATERING WORKS
- EXTRACT PHASE 5 - STAGE 5
- STAGES TO OCCUR IN SEQUENTIAL LIFTS
- ESTABLISH FINAL SLOPES ON PERIMETER BENCH AS EXTRACTION PROCEEDS USING UNMARKETABLE AGGREGATE, STABILIZE WITH TOPSOIL & HYDROSEED
- INSTALL ADDITIONAL MONITORING WELLS AS REQUIRED

FINAL REHABILITATION
N.T.S.



- PROPOSED POST REHABILITATION DEVELOPMENT PLAN TO BE APPROVED BY MUNICIPALITY PRIOR TO RECEIVING FROM INDUSTRIAL EXTRACTIVE TO COMMERCIAL / RECREATIONAL OR RURAL RESIDENTIAL
- ALL WELLS NO LONGER USE ARE TO BE REMOVED



KEY MAP 1000 0 1000 2000 SCALE 1:50 000

NOTES

1. LICENSED AREA – 427.2 ha
2. AREA OF EXTRACTION — SOUTH PART = 58.3 ha; NORTH PART = 127.9 ha; TOTAL = 186.2 ha
3. AREA TO BE REHABILITATED — N. PART = 71.9 ha; S. PART = 162.6 ha; TOTAL = 234.5 ha
4. THE WATER TABLE ELEVATION RANGES BETWEEN 258.0 AND 273.0, AND BETWEEN 0.0 m AND 14 m BELOW THE GROUND SURFACE AS RECORDED BY FIELD SURVEY.
5. THIS PLAN WAS PREPARED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS.
6. LOT, CONCESSION AND BOUNDARY LINES ON THIS PLAN ARE APPROXIMATE.
7. THIS IS NOT A LEGAL SURVEY DRAWING IN ACCORDANCE WITH THE PROVINCE OF ONTARIO SURVEYORS ACT 1987.

MINISTRY OF NATURAL RESOURCES

PLANS APPROVED UNDER THE AGGREGATE RESOURCES ACT

AGGREGATE RESOURCES OFFICER

DATE Apr. 1, 28/03

LEGEND

- 228 — FINAL ELEVATION
- 268.20 — EXISTING ELEVATION
- 270 — 2.0m CONTOUR INTERVAL
- TREES / BUSH
- CREEK — DRAINAGE COURSE & FLOW DIRECTIONS
- GENERAL SURFACE DRAINAGE DIRECTION
- BD — BEAVER DAM
- SWAMP
- W/L 270.10 — POND AND WATER LEVEL
- HYDRO / TELEPHONE POLES
- W/L — WATER LEVEL
- BUILDINGS (HOUSE-BARN-SHED-GARAGE-COTTAGE) DIMENSIONS
- P&W 1.2m S.R. — FENCE TYPE & HEIGHT (P & W - POST & WIRE; S.R. - SPLIT RAIL)
- GATE
- ASSUMED ROAD
- UNASSUMED ROAD
- TRAIL
- ENTRANCE / EXIT
- LOT / CONCESSION LINE
- ZONE BOUNDARY FOR OI
- AI OI MI — ZONING (AI - RURAL GENERAL; OI - OPEN SPACE); (MI - INDUSTRIAL EXTRACTIVE)
- AGRICULTURAL LAND CLASSIFICATION
- BOUNDARY OF LICENSED AREA
- 30m SETBACK — EXTRACTION LIMIT & SETBACK DISTANCE
- 30m SET BACK — PROPOSED SETBACK DISTANCE
- 500m INFORMATION AREA LIMIT LINE
- A — CROSS SECTION/PROFILE NUMBER & LOCATION
- WELL
- WATER LINE
- 3:1 — ANGLE OF SLOPE (VERT. TO HORIZ.)
- N.T.S. — NOT TO SCALE

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.

FERMA AGGREGATES INC.
2666 RENA ROAD
MISSISSAUGA, ONTARIO
L4T 3C8
Telephone (905)677-9241 Fax (905) 677-9817

SIGNATURE OF LICENSEE — DATE 01/28/03

AMENDMENTS	DATE APPROVED

SITE PLANS APPROVED BY MINISTRY OF NATURAL RESOURCES

SIGNATURE — DATE

REGISTERED PROFESSIONAL ENGINEER J. S. GOURLEY PROVINCE OF ONTARIO — Apr 28/03

THESE PLANS WERE DESIGNED TO ENSURE COMPLETE PRACTICALITY DURING THE OPERATIONS, PROGRESSIVE REHABILITATION AND FINAL REHABILITATION OF THE LICENSED PROPERTY

Trow Associates Inc.
Parent Company of
OLIVER MANGIONE McCALLA & ASSOCIATES LIMITED
561 BRYNE DRIVE UNIT D
BARRIE, ONTARIO L4N 8V3
Tel: (705) 734-6222
Fax: (705) 734-6224

92-8977

FERMA-CARDEN QUARRY

LOTS 6, 7, 8, 9, & 10
CONCESSION IX
TOWNSHIP OF CARDEN
CITY OF KAWARTHA LAKES

PROGRESSIVE REHABILITATION & FINAL REHABILITATION

PAGE 3 OF 5				
PHOTO SCALE 1:16000	ROLL No. 87-4426	PHOTO Nos. 188 - 190	LINE No. 3	PHOTO DATE MAY 1987
MAP SCALE AS SHOWN	CONTOUR INTERVAL 2.0 m		DATE OF SITE PLAN DECEMBER 2002	

100 0 100 200 300 400m
1:5000