

prepared by: BROWN AND ASSOCIATES  
PLANNING GROUP  
RUSS GERRISH CONSULTING

OCTOBER 2003



**NOTES**

ISSUE	REVISION	DATE
1	FOR TEAM REVIEW	02/28/03
2	FOR SUBMISSION TO AT&U	03/28/03
3	FOR AEP/CA SUBMISSION	October 2003

**LEGEND**

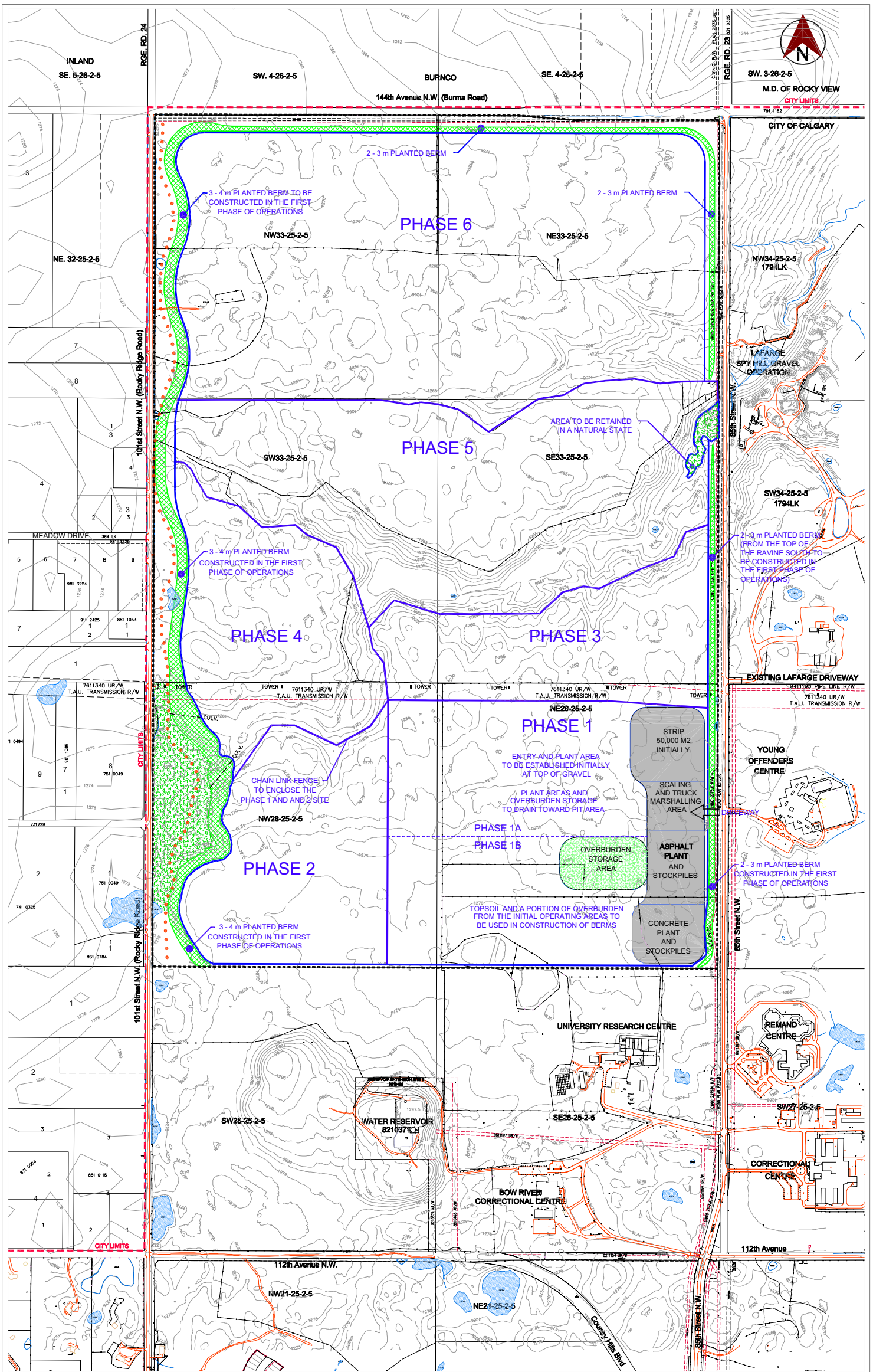
- CITY LIMITS
- SITE BOUNDARY
- FENCE
- EXISTING CONTOUR (2.5 m INTERVAL)
- EXISTING ROADWAY
- EXISTING EASEMENT or R/W
- EXISTING TREES

SCALE 1:5000

SPY HILL AGGREGATE OPERATIONS  
SECTION 33-25-2-W5M, AND  
SECTION 28-25-2-W5M

**MAP 1**  
EXISTING SITE CONTEXT





prepared by: BROWN AND ASSOCIATES PLANNING GROUP  
 RUSS GERRISH CONSULTING  
 OCTOBER 2003

**Alberta**  
 GOVERNMENT OF ALBERTA

**Brown & Associates**  
 PLANNING GROUP  
 J/647/0P-2

**NOTES**

- EXCAVATION TO PROCEED FROM PHASE 1 TO PHASE 6
- THE INITIAL PHASES OF STAGE 1 ARE SHOWN WITHIN THE SHADED AREA
- ALL BERMS AROUND THE PERIMETER OF THE PROPERTY TO BE CONSTRUCTED DURING PHASE 1
- ALBERTA LEGAL SURVEY CONTROL STATIONS AND MARKERS DISTURBED DURING SURFACE OPERATIONS WILL BE RE-ESTABLISHED TO THE SATISFACTION OF THE CITY LAND SURVEYOR

ISSUE	REVISION	DATE
1	FOR TEAM REVIEW	02/28/03
2	FOR SUBMISSION TO A1&U	05/28/03
3	FOR APEA SUBMISSION	OCT. 2003

**LEGEND**

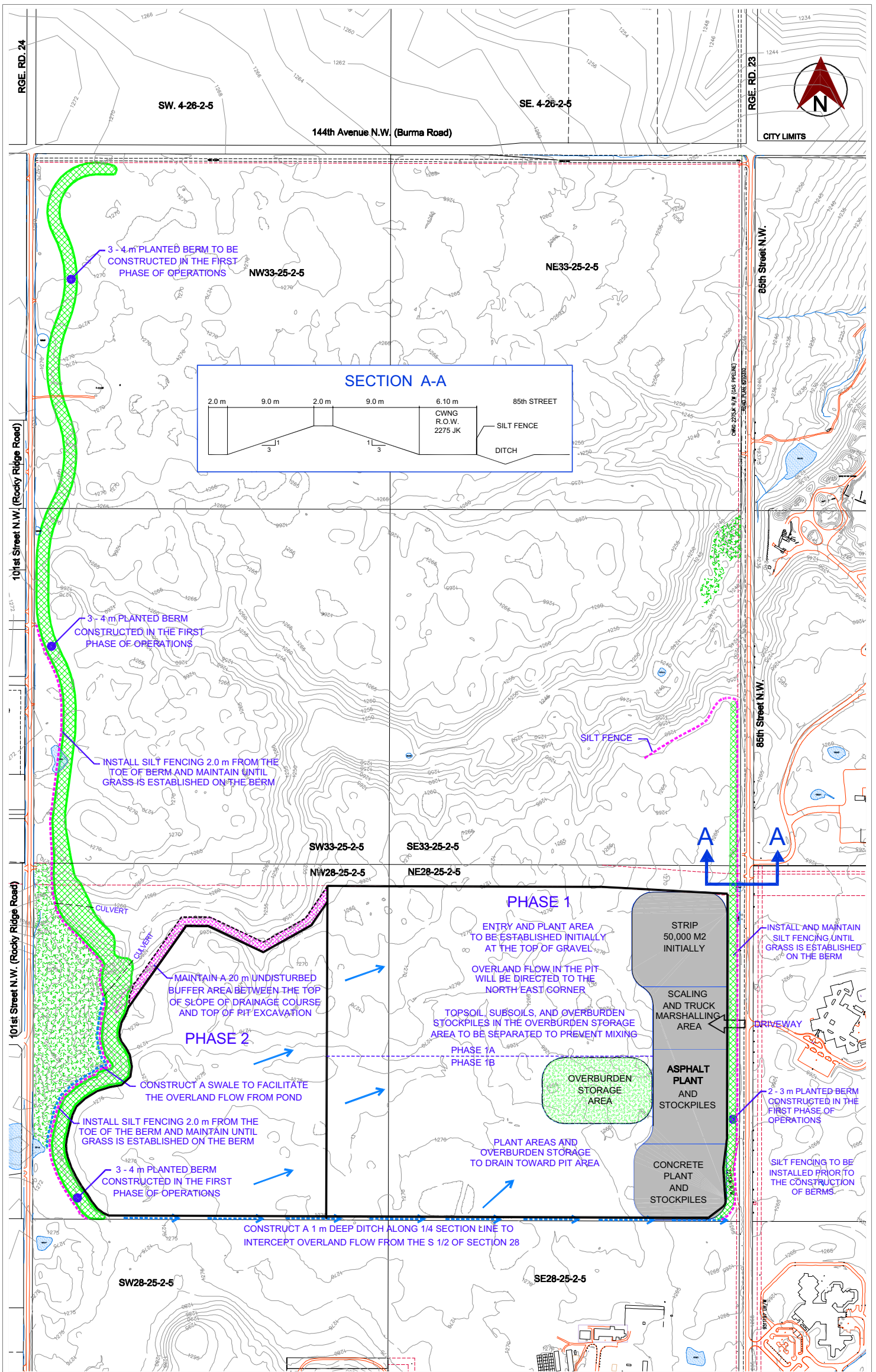
- CITY LIMITS
- SITE BOUNDARY
- LIMIT OF EXCAVATION (PHASING BOUNDARY)
- - - - - EXISTING FENCE
- EXISTING CONTOUR (2.5 m INTERVAL)
- 2.0 m LOCAL PATHWAY
- PLANTED BERM
- AREA TO BE LEFT IN A NATURAL STATE

SCALE 1:5000

SPY HILL AGGREGATE OPERATIONS  
 SECTION 33-25-2-W5M, AND  
 SECTION 28-25-2-W5M

**MAP 2**  
**EXTRACTION PHASING**





prepared by: D.A. Watt CONSULTING GROUP LTD.  
BROWN AND ASSOCIATES PLANNING GROUP

OCTOBER 2003

**Alberta**  
GOVERNMENT OF ALBERTA

**DAW** D.A. WATT CONSULTING GROUP LTD.

**NOTES**

- THE INITIAL PHASES OF STAGE 1 ARE SHOWN WITHIN THE SHADED AREA
- ALL BERMS SHOWN TO BE CONSTRUCTED DURING PHASE 1

ISSUE	REVISION	DATE
1	FOR TEAM REVIEW	03/28/03
2	FOR APEA SUBMISSION	03/28/03

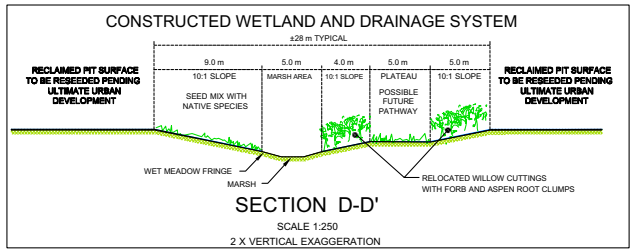
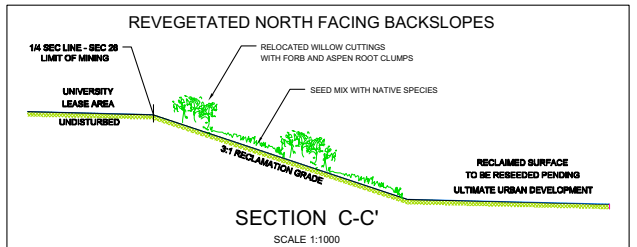
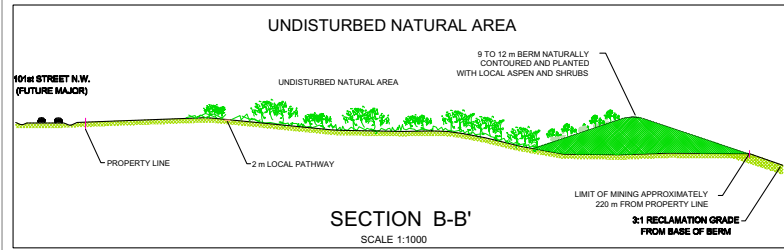
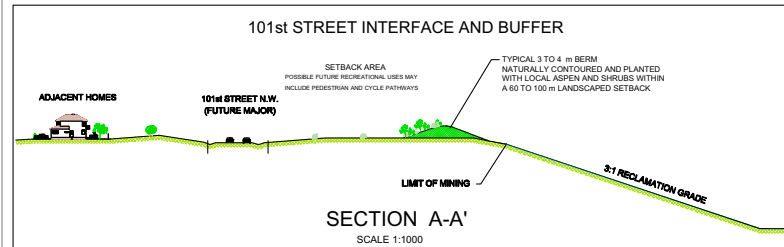
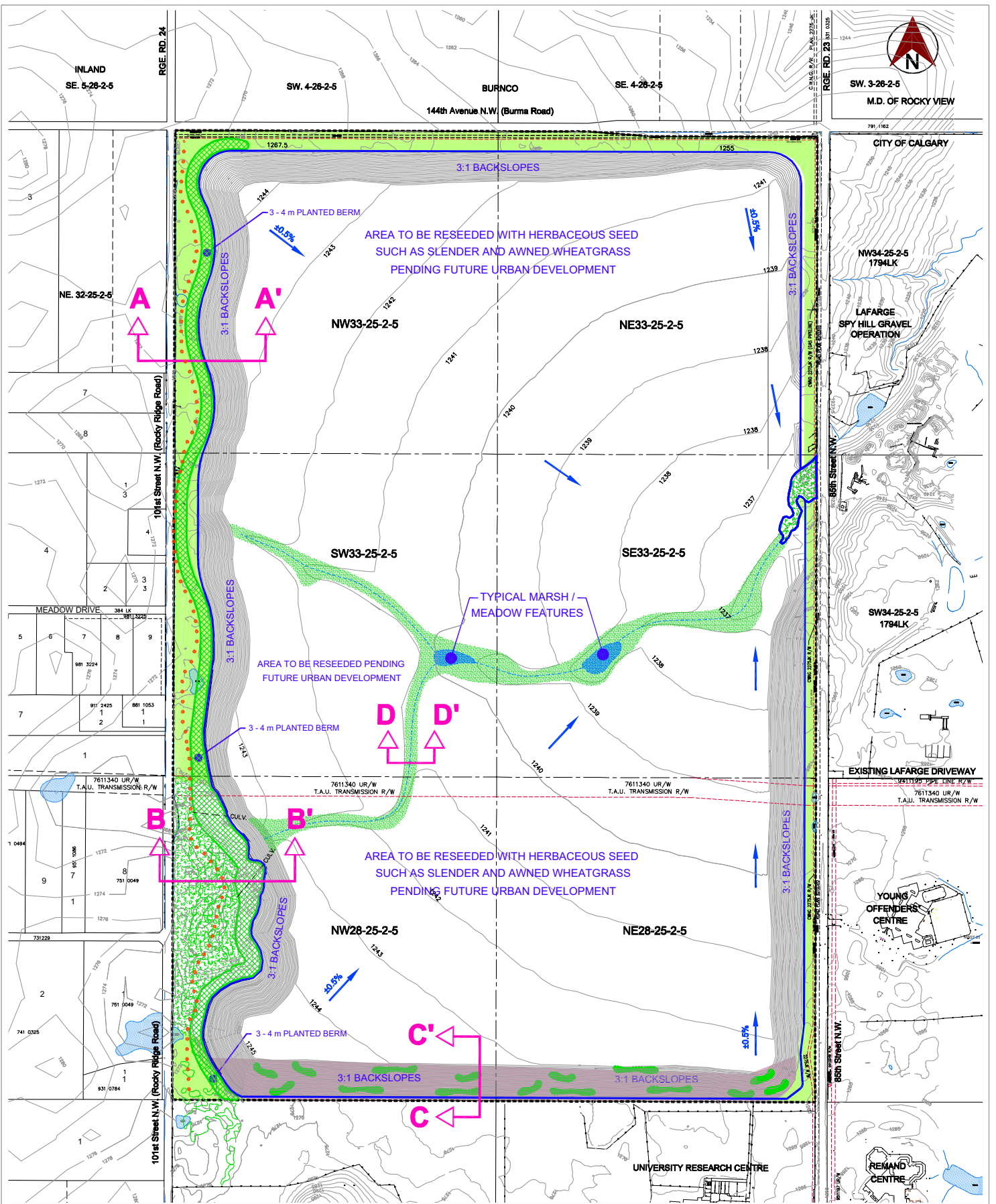
**LEGEND**

- SILT FENCE
- OVERLAND SWALE
- → DIRECTION OF OVERLAND FLOW
- LIMIT OF EXCAVATION (PHASING BOUNDARY)
- EXISTING CONTOUR (2.5 m INTERVAL)
- PLANTED BERM
- AREA TO BE LEFT IN A NATURAL STATE

SCALE 1:4000

SPY HILL AGGREGATE OPERATIONS  
SECTION 33-25-2-W5M, AND  
SECTION 28-25-2-W5M

**MAP 3**  
EROSION AND  
SEDIMENTATION CONTROL  
PHASE 1 AND 2



prepared by: BROWN AND ASSOCIATES  
PLANNING GROUP  
RUSS GERRISH CONSULTING  
OCTOBER, 2003

**BROWN & ASSOCIATES**  
PLANNING GROUP  
J647/DP-4

**LEGEND**

- SITE BOUNDARY
- RECLAIMED CONTOUR ELEVATION (1.0 m INSIDE EXCAVATION BOUNDARY)
- 2.0 m LOCAL PATHWAY
- DIRECTION OF OVERLAND FLOW
- UNDISTURBED NATURAL AREA (SEE DETAILS - SECTION C-C')
- AREA OF SURFACE DISTURBANCE ONLY (TEMPORARY AND PERMANENT BERMING, MINIMAL STRIPPING AND GRADING TO SEPARATE TOPSOILS, AND ESTHETIC ENHANCEMENTS)
- CONSTRUCTED WETLAND AND DRAINAGE SYSTEM (SEE DETAILS - SECTION D-D')
- RECLAIMED NORTH BACKSLOPES (SEED MIX - GRASS MIX WITH NATIVE SPECIES SUCH AS ROUGH FESCUE, WHEATGRASS, AND NEEDLEGRASS)
- PROPOSED PLANT MATERIAL (TOP DRESS WITH COMBINATION OF NEW AND DIRECTLY PLACED LOCAL STRIPPINGS TO INCLUDE WILLOW CUTTINGS WITH FORB AND ASPEN ROOT CLUMPS.)

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SCALE 1:5000

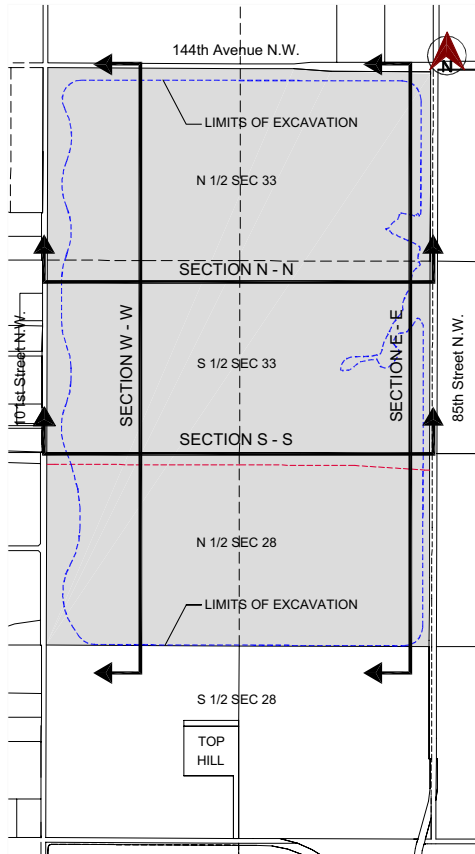
SPY HILL AGGREGATE OPERATIONS  
SECTION 33-25-2-W5M, AND  
SECTION 28-25-2-W5M

**MAP 4**  
FINAL GRADING,  
NATURAL AREA RECLAMATION,  
AND PLANTING PLAN



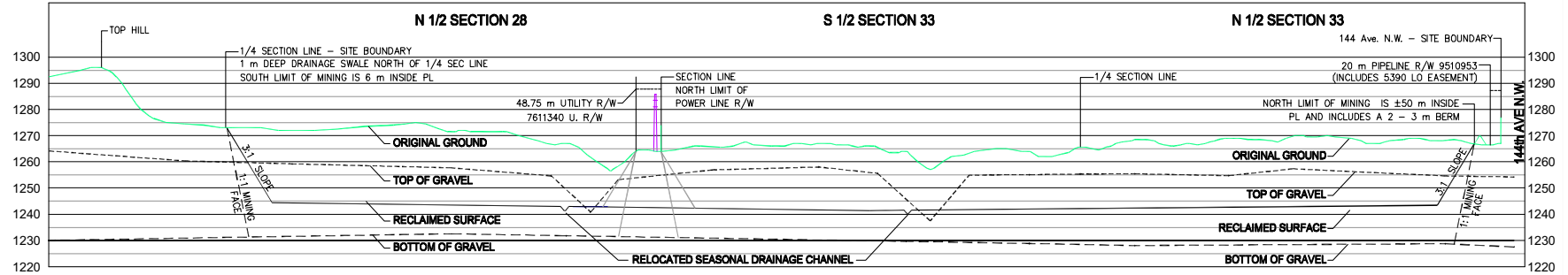
ISSUE	REVISION	DATE
1	FOR FINAL REVIEW	02/26/03
2	FOR SUBMISSION TO AYU	03/26/03
3	FOR AYU'S SUBMISSION	OCT. 2003

NOTES  
DUE TO THE SCALE OF THE DRAWINGS THE DEPTH OF TOPSOIL HAS NOT BEEN DETAILED THE AVERAGE TOPSOIL DEPTH IS 0.3 m (1 ft)

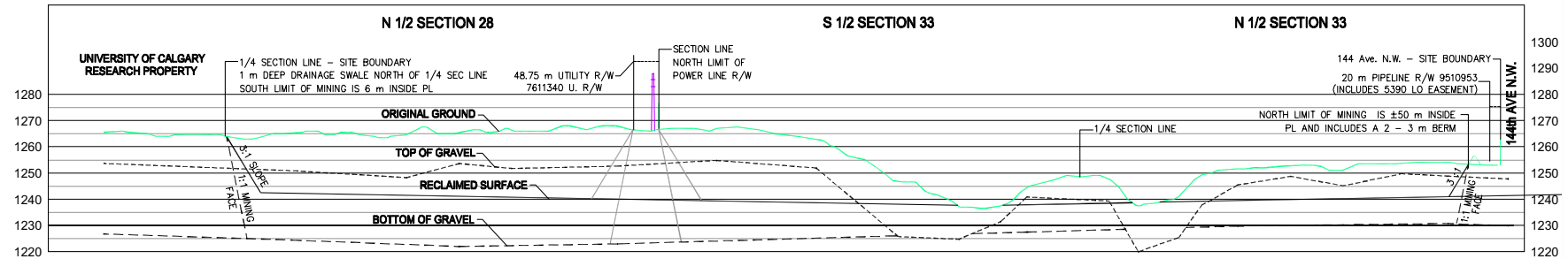


KEY MAP  
NOT TO SCALE

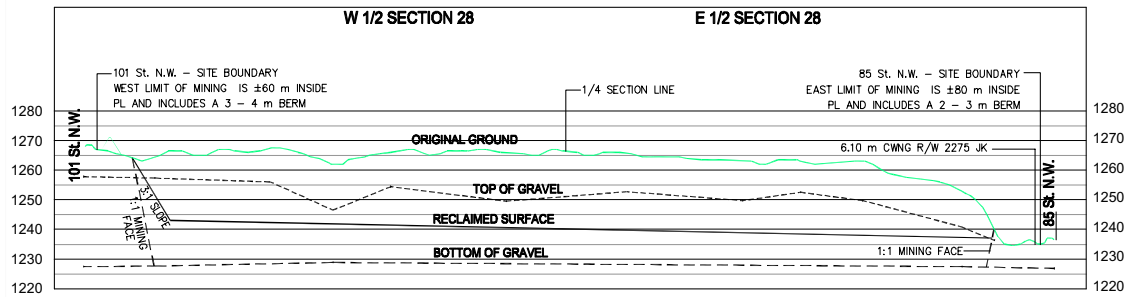
CROSS SECTION W-W'  
HORIZONTAL SCALE 1:5000 - VERTICAL SCALE 1:1000  
5 x VERTICAL EXAGGERATION



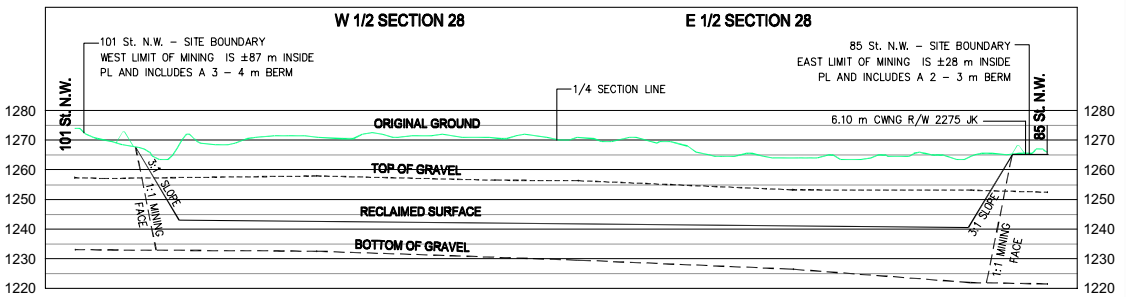
CROSS SECTION E-E'  
HORIZONTAL SCALE 1:5000 - VERTICAL SCALE 1:1000  
5 x VERTICAL EXAGGERATION

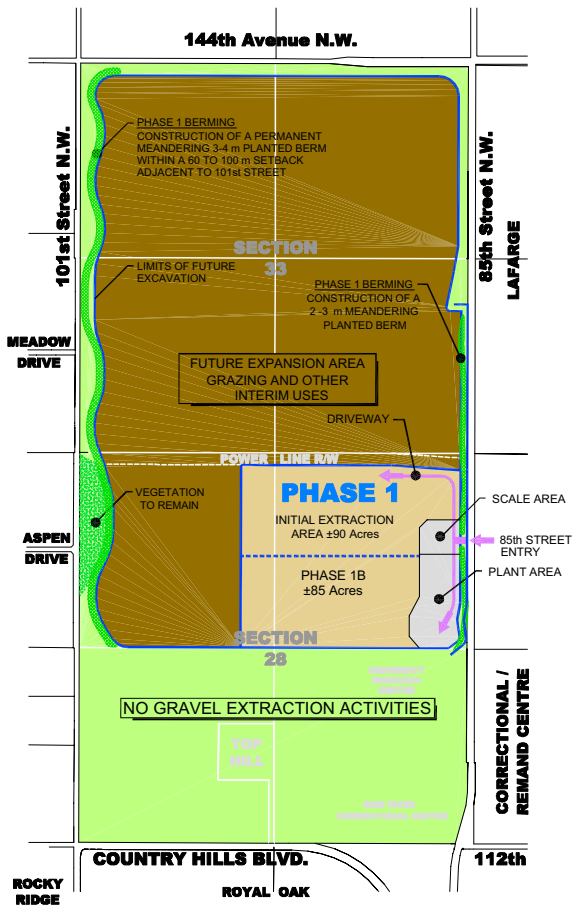


CROSS SECTION N-N'  
HORIZONTAL SCALE 1:5000 - VERTICAL SCALE 1:1000  
5 x VERTICAL EXAGGERATION



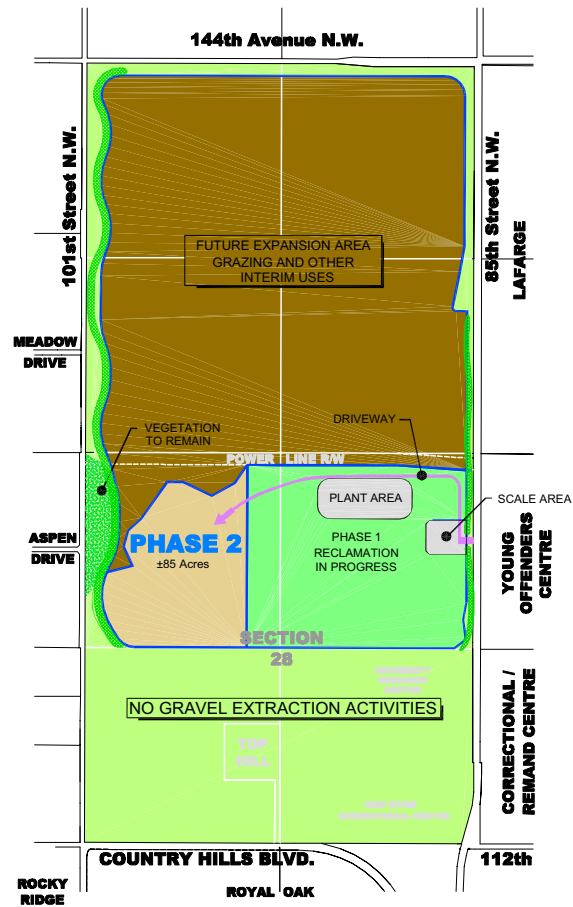
CROSS SECTION S-S'  
HORIZONTAL SCALE 1:5000 - VERTICAL SCALE 1:1000  
5 x VERTICAL EXAGGERATION





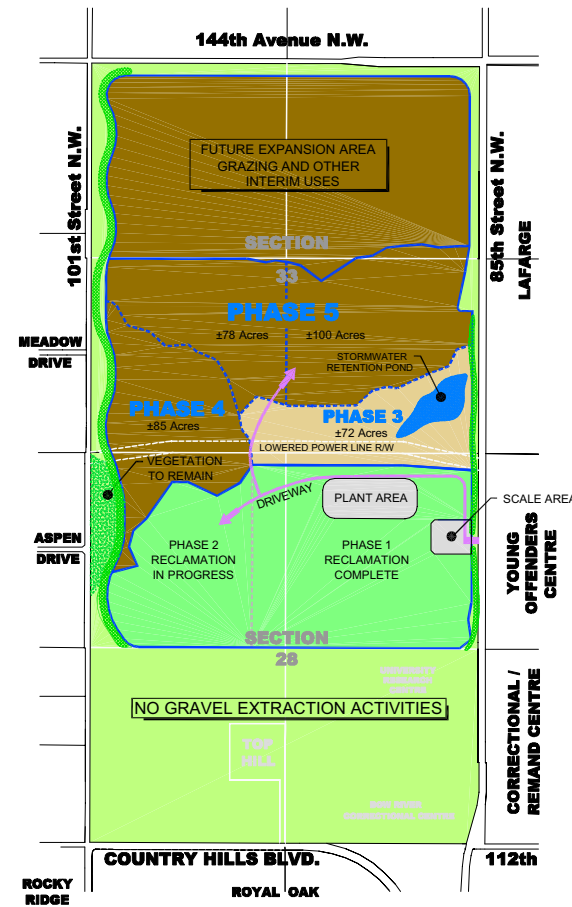
## PHASE 1

- CONSTRUCTION OF A PERMANENT BERM ALONG THE WEST SIDE OF THE PROPERTY ADJACENT TO 101st STREET
- ESTABLISH THE SITE ACCESS, SCALING AREA, AND CONCRETE AND ASPHALT PLANT SITES. CONSTRUCT AN UPGRADED DRIVEWAY INTERSECTION ON 85th STREET TO ACCOMMODATE A SEPARATE TRUCK TURNING LANE.
- COMMENCE PHASE 1 INITIAL STRIPPING AND EXTRACTION ACTIVITIES. TOPSOIL, SUBSOILS, AND A PORTION OF THE OVERBURDEN TO BE USED IN BERM CONSTRUCTION. REMAINING OVERBURDEN AND SOME TOPSOIL AND SUBSOIL TO BE STOCKPILED IN PHASE 1B AREA AND THEN USED FOR DIRECT AND SEQUENTIAL RECLAMATION AND BACKFILLING



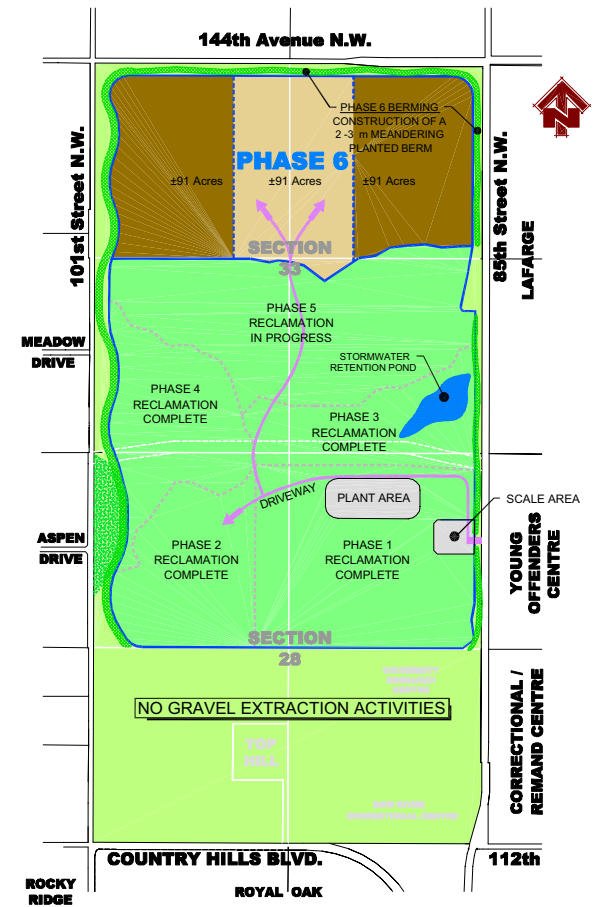
## PHASE 2

- ONGOING EXTRACTION WITHIN PHASE 2
- RELOCATION OF CONCRETE AND ASPHALT PLANT SITES TO THE BASE OF PHASE 1A APPROXIMATELY 20 METRES BELOW THE EXISTING GRADE OF THE PROPERTY
- EXTENSION OF WORKING DRIVEWAY TO CURRENT PHASE
- RECLAMATION OF COMPLETED PHASE 1 AREAS AT A LEVEL APPROXIMATELY 20 METRES BELOW EXISTING GRADE. TOPSOIL FROM PHASE 2 WILL BE PLACED IN PHASE 1 RECLAMATION AREAS AND RESEEDED.



## PHASES 3 TO 5

- ONGOING EXTRACTION TO PROGRESS FROM PHASE 3 TO 5
- EXISTING POWER LINE TO BE LOWERED TO THE BASE OF THE RECLAIMED AREA
- CONSTRUCTION OF A STORMWATER RETENTION POND WITHIN PHASE 3 TO PREVENT SILTATION OF OFF-SITE DRAINAGE COURSES
- EXISTING ON-SITE DRAINAGE CHANNEL WILL BE RE-ESTABLISHED AT THE BASE OF THE RECLAIMED AREA
- RECLAMATION OF COMPLETED AREAS AT A LEVEL APPROXIMATELY 20 METRES BELOW EXISTING GRADE. DIRECT AND SEQUENTIAL PLACEMENT OF TOPSOIL AND OVERBURDEN IN RECLAMATION AREAS



## PHASE 6

- CONSTRUCT NORTH AND NORTHEAST BERMS PRIOR TO COMMENCING PHASE 6 EXTRACTION
- ONGOING EXTRACTION WITHIN PHASE 6
- RECLAMATION OF COMPLETED AREAS AT A LEVEL APPROXIMATELY 20 METRES BELOW EXISTING GRADE.
- CONTINUE DIRECT AND SEQUENTIAL PLACEMENT OF TOPSOIL AND OVERBURDEN IN RECLAMATION OF PREVIOUS EXTRACTION AREA.

**MAXIMUM AREA OF OPEN MINING AT ANY TIME WILL BE 100 ACRES**

NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY, AND SHOULD NOT BE SCALED