



# Master Site Development Plan

## Roe Gravel Pit

*SE 12-27-27 W4M (Title # 891 070 572)*

**BURNCO Rock Products Ltd.**

**May 2022 v3**

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## Detailed Report

### 1.0 Introduction

BURNCO Rock Products Ltd. (BURNCO) is a family owned Alberta based company that has been in operation since 1912. Today, BURNCO is a fourth-generation construction materials company with over sixty locations in Alberta, British Columbia, Saskatchewan, Colorado and Texas. BURNCO produces high quality aggregates, paving asphalt, and ready-mix concrete.

BURNCO takes great pride in its sites and works every day to ensure they are having the least possible impact on neighbors and the community while continuing to supply the aggregates needed for local projects.

Sites currently operated in Rocky View County include:

- |                            |                            |
|----------------------------|----------------------------|
| • Irricana Gravel Pit      | 304 hectares (751 acres)   |
| • Burma Gravel Pit         | 194 hectares (480 acres)   |
| • Springbank Gravel Pit    | 246 hectares (608 acres)   |
| • Indus Gravel Pit         | 553 hectares (1,368 acres) |
| • West Cochrane Gravel Pit | 61 hectares (151 acres)    |

These sites have been successfully operated for many years. In that time, BURNCO has learned effective strategies for impact assessment and control. This includes a commitment to meaningful noise, dust and traffic control measures. These measures include screening berms, enclosed equipment, road upgrades, and a willingness to engage with neighbors and stakeholders. BURNCO has had great success with such measures and holds all projects to a high standard of performance.

### 1.1 The Roe Gravel Pit

BURNCO currently operates a complex of gravel pits located southwest of the Town of Irricana, Alberta. Irricana 1 is located in SEC 06-27-26 W4M. Irricana 2 (Luft) is located in SW 7-27-26 W4M. Irricana 3 (Poffenroth) is located in SE 7-27-26 W4M. Combined, this site is 304 hectares (751 acres) in size. While Irricana 2 and Irricana 3 are depleted and reclaimed, Irricana 1 contains an estimated 2,100,000 tonnes of aggregates and is selling roughly 400,000 tonnes of material annually. Operations include earthmoving, aggregate crushing, aggregate washing, and loading trucks. BURNCO's Irricana site has been operating since the 1980's and with reserves depleting, a supplemental source of material is required for the continued operation of the site.

BURNCO is proposing to increase the volume of available material by assuming operation of the Roe Gravel pit which is located in the SE 12-27-27 W4M. The size of this location is 19.32 hectares (47.75 acres) and will serve to supply BURNCO's existing Irricana 1 Gravel Pit with an estimated 1,200,000 tonnes of aggregate through the expansion of permitted reserves. The site expected to operate for 5 to 10 years. The site is currently permitted as a Rocky View County gravel pit and has an Alberta Environment & Parks (AEP) Registration # 00015044-01-00.

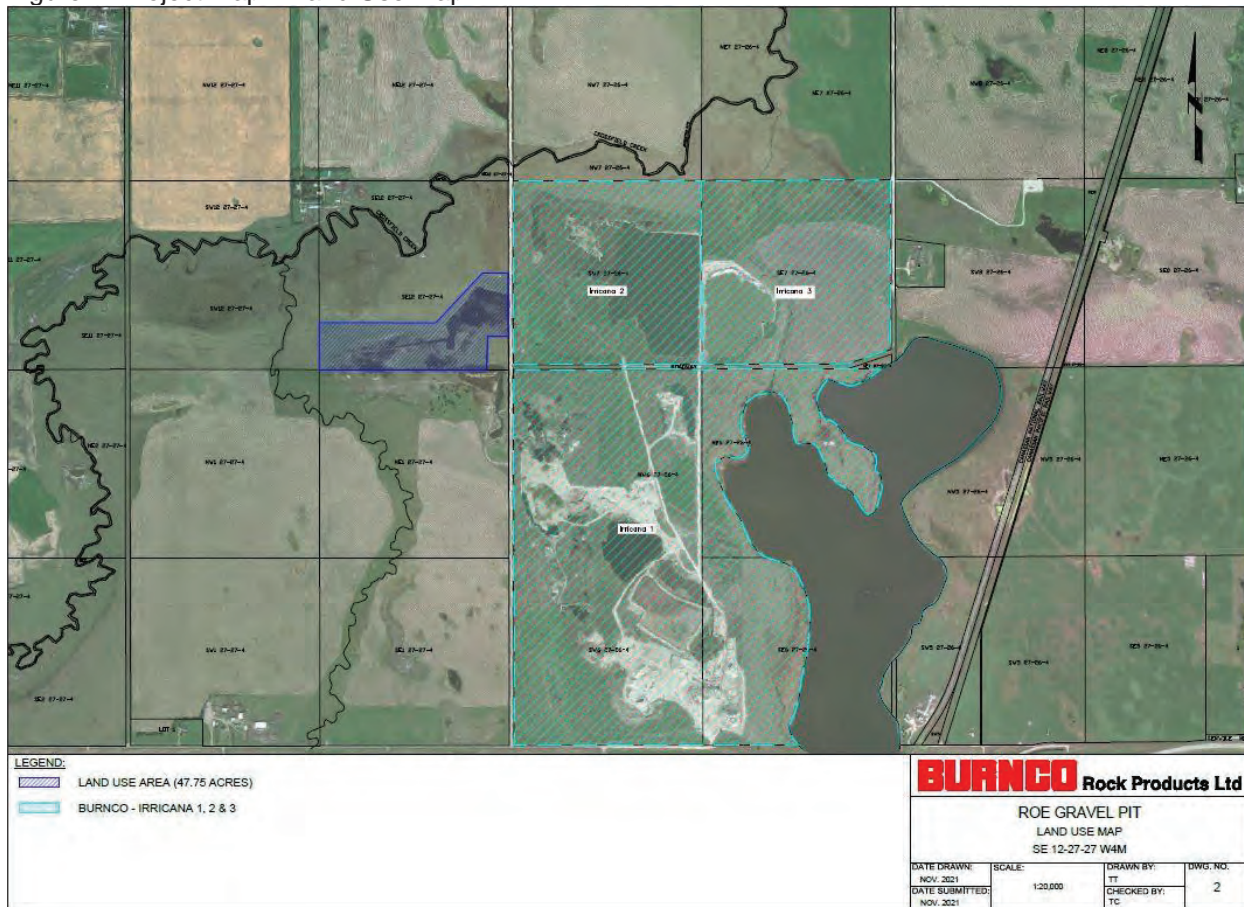
The project would include the following parcel:

- Proposed: SE 12-27-27 W4M (Title # 891 070 572)

Roe Gravel Pit – Master Site Development Plan

**BURNCO**

Figure 1: Project Map – Land Use Map



Aggregate from this site will be used to supply local projects in Rocky View County and in the Town of Irricana. Washing capacity at the existing site allows BURNCO to supply premium aggregates to its network of asphalt and concrete plants in the Greater Calgary Area.

This document provides a summary of the development, operation and closure plans for this project. It is BURNCO's belief that by following the Project Activities Plan for the proposed development, that BURNCO's Roe Gravel Pit can operate in a socially and environmentally responsible manner for many years to come.

## 1.2 Location and Ownership

The lands are located in Rocky View County and are southwest of the Town of Irricana. The total proposed area is 19.32 hectares (47.75 acres). The property is privately held and BURNCO has entered into a lease agreement with the owner for gravel mining

**Roe Gravel Pit – Master Site Development Plan**

Table 1: Land Ownership and Occupancy

| Location<br>Municipal Address or<br>1/4-Sec-Twp-Rge-Mer | Registered Owners<br>Name, Address and Phone<br>Number   | Occupants<br>Name, Address and Phone<br>Number  |
|---|--|---|
| SE 12-27-27 W4M (Title # 891 070 572)                   | Hazel George<br>270 141 Township Road 272<br>Rocky View County, Alberta<br>T4A 2V3<br>(403) 935-4883 | Current Gravel Pit Tenant:<br>Rocky View County<br><br>Farming:<br>Hazel George<br>270 141 Township Road 272<br>Rocky View County, Alberta<br>T4A 2V3<br>(403) 935-4883 |

### 1.3 Current Land Use

The land in the proposed area is registered as A-GEN (Agricultural – General District). Currently, there is a gravel pit operated by Rocky View County. With surface materials depleted, and with no ability to recover additional materials, the site had been undergoing reclamation. BURNCO's intention is to now assume operation of this site and seek permitting for the gravel reserves located within the water table. While these materials were not suitable for regular gravel production, they will be acceptable as feedstock for BURNCO's nearby wash plant.

#### Policy #1

**Upon successful MSDP adoption and re-designation of the project area, BURNCO will assume the Registration from AEP under the Code of Practice for Pits from Rocky View County.**

#### Policy #2

**Before commencing operations, BURNCO will secure a Development Permit and will make the necessary amendments to the COP Registration to account for the updating mining plan on the site.**

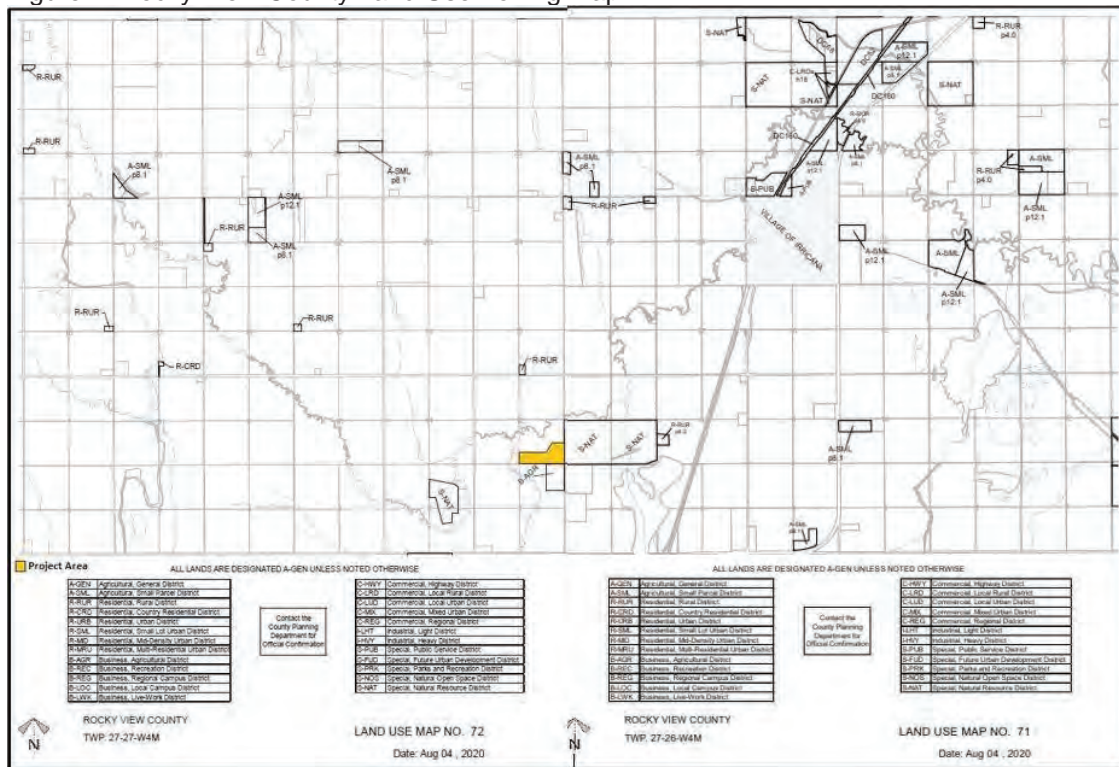
### 1.4 Adjacent Lands

Lands to the east of the project are zoned as Special, Natural Resource District (S-NAT) and contain active and reclaimed gravel pits, which were operated by BURNCO. The reclaimed properties are owned by Rocky Ridge Farms and Murray Poffenroth, while the operation gravel pit lands are owned by BURNSWEST Properties Ltd and leased to BURNCO. The property to the south is owned by Rocky Ridge Farms and is currently zoned as Business, Agricultural District (B-AGR). This property has an unreclaimed gravel pit located on it. The properties to the north and west are primarily farm land, which support both cultivated and pasture operations. There is also a gravel pit to the southwest, which is known as the Senger Pit. It is operated by AECON Transportation West Ltd.



**Roe Gravel Pit – Master Site Development Plan**

Figure 2: Rocky View County Land Use Zoning Map



## 2.0 Site Analysis

### 2.1 Resource

The site has recently been tested by auger drill to determine the depth, extent, and quality of aggregate. Ten test holes/pits were logged across the site for use in assessing top soil, sub soil, overburden, and gravel depths. The site contains an estimated 1,200,000 tonnes of aggregate.

- SE 12-27-27 W4M (Title # 891 070 572)
  - Topsoil: 12.7 cm Subsoil: 13.9 cm
  - Overburden (OB): 0.15 m Gravel: 5.1 m

### 2.2 Stormwater

All surface water within the pit area will be directed towards and confined within the excavation created by the mining of sand and gravel from this site. Stormwater management is not expected to be an issue at this site.

#### Policy #3

**BURNCO will ensure that stormwater from the active mining area is collected and not discharged from the site. BURNCO will not submit a conceptual or detailed Storm Water Management Plan, as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

## 2.3 Groundwater

Site testing has determined that 100% of the remaining gravel deposit lies within the groundwater table.

Excavation of sand and gravel located below the water table will be accomplished by bailing. This will involve an excavator dredging up sand and gravel from the applicable excavation area on site. These materials will then be transported by truck to BURNCO's existing site, located in Sec 06-27-27 W4M.

A Water Act application will be submitted to AEP for the disturbance of an aquifer. This disturbance is related to the excavation of sand and gravel from an unconfined groundwater aquifer.

### **Policy #4**

**BURNCO will secure a Water Act Approval to excavate aggregate from an unconfined groundwater aquifer prior to any site activity. BURNCO will follow all approval requirements as applicable. BURNCO will not submit a Hydrogeological Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

## 2.4 Wildlife and Vegetation

The site is currently utilized as a Rocky View County gravel pit. The site has remained dormant for a number of years, with reclamation only occurring during the previous five years. The reclamation has been unsuccessful in obtaining a reclamation certificated from AEP and continues to have unaddressed reclamation deficiencies.

An approval for wetland disturbance is not anticipated as these lands have already been disturbed. BURNCO will confirm any requirements related to wetland disturbance with AEP.

### **Policy #5**

**BURNCO will not submit a Biophysical Impact Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

### **Policy #6**

**BURNCO will secure a Water Act Approval for disturbance of wetlands, if applicable, prior to any site activity.**



## 3.0 Development / Operating Plan

### 3.1 Overview

The Roe Gravel Pit will serve as a satellite pit for BURNCO's Irricana 1 gravel pit in SEC 06-27-26 W4M. There will be no material processing at the Roe Gravel Pit. Materials will be excavated and then hauled to BURNCO's adjacent site. Major activities at the Roe Gravel Pit will include:

- earthworks
- loading and scaling

#### Earthworks

To extract the gravel (pit-run), topsoil and subsoil must be salvaged to expose the gravel beneath. This work is accomplished with heavy machinery such as scrapers, track hoes, articulating trucks, bulldozers, graders. This process is expected to continue as required through all phases of the proposed project.



#### **Policy #7**

**BURNCO will follow all requirements in the Code of Practice for Pits (Section 5.2.5), which indicates that reclaimed sloping will be no steeper than 3:1. BURNCO will not submit a Geotechnical Assessment, as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

**Roe Gravel Pit – Master Site Development Plan**

Loading and Scaling

Once aggregate materials have been removed from the ground water table, the final step is to load these materials into trucks for transport to BURNCO's Irricana 1 Site. This work is accomplished with a loader. While the aggregate materials are being loaded, they will be also be scaled using a loader scale. Trucks will then be weighed at a portable commercial truck scale and portable scale house that are located on BURNCO's existing Irricana 1 site at SEC 06-27-27 W4M. This process is expected to continue as required through all phases of the proposed project.



It is expected that 120,000 to 240,000 tonnes of aggregate material will be removed from the site and transported to BURNCO's existing Irricana 1 site. This annual volume will be dependent on market conditions and will not affect the volumes being sold annually from Irricana 1 site.

Aggregate from this site will be used to supply local projects in Rocky View County and in the Town of Irricana. Washing capacity at the existing site allows BURNCO to supply premium aggregates to its network of asphalt and concrete plants in the Greater Calgary Area.

### 3.2 Hours of Operation

BURNCO's existing Irricana 1 gravel pit is currently operated Monday through Sunday, with no restrictions on operations.

For the proposed satellite site, BURNCO is proposing the following operating hours.

- Hours for Operating:
  - 7:00 am to 7:00 pm; Monday through Saturday
  - No activities on Sundays or Statutory Holidays
- Hours for Hauling:
  - 7:00 am to 7:00 pm Monday through Saturday
  - No activities on Sundays or Statutory Holidays

**Policy #8**

**BURNCO will follow the hours of operation as determined by Rocky View County as part of the Development Permit process.**

### 3.3 Development Phasing

As there is an existing operation in SEC 06-27-27 W4M, the majority of infrastructure necessary for the operation of a satellite gravel pit on these lands is already in place. This includes items such as a scale, water licenses to source water, and screening berms. A designated haul route along Ranged Road 270 will be required to facilitate the operation of this site. The key development strategies associated with that phasing plan are as follows:

#### **Policy #9**

**BURNCO will follow the development phasing plan as illustrated in the MSDP.**

#### Phase 1:

- Screening berm to the east of the development will be constructed from soil stripped from mining phase 1,
- The screening berm will provide impact mitigation for traffic and provide security for the operation,
- Screening berm to the north of the project will be constructed from overburden stripped from mining phase 1,
- Haul route to BURNCO's existing site via Range Road 270 and Township Road 270.

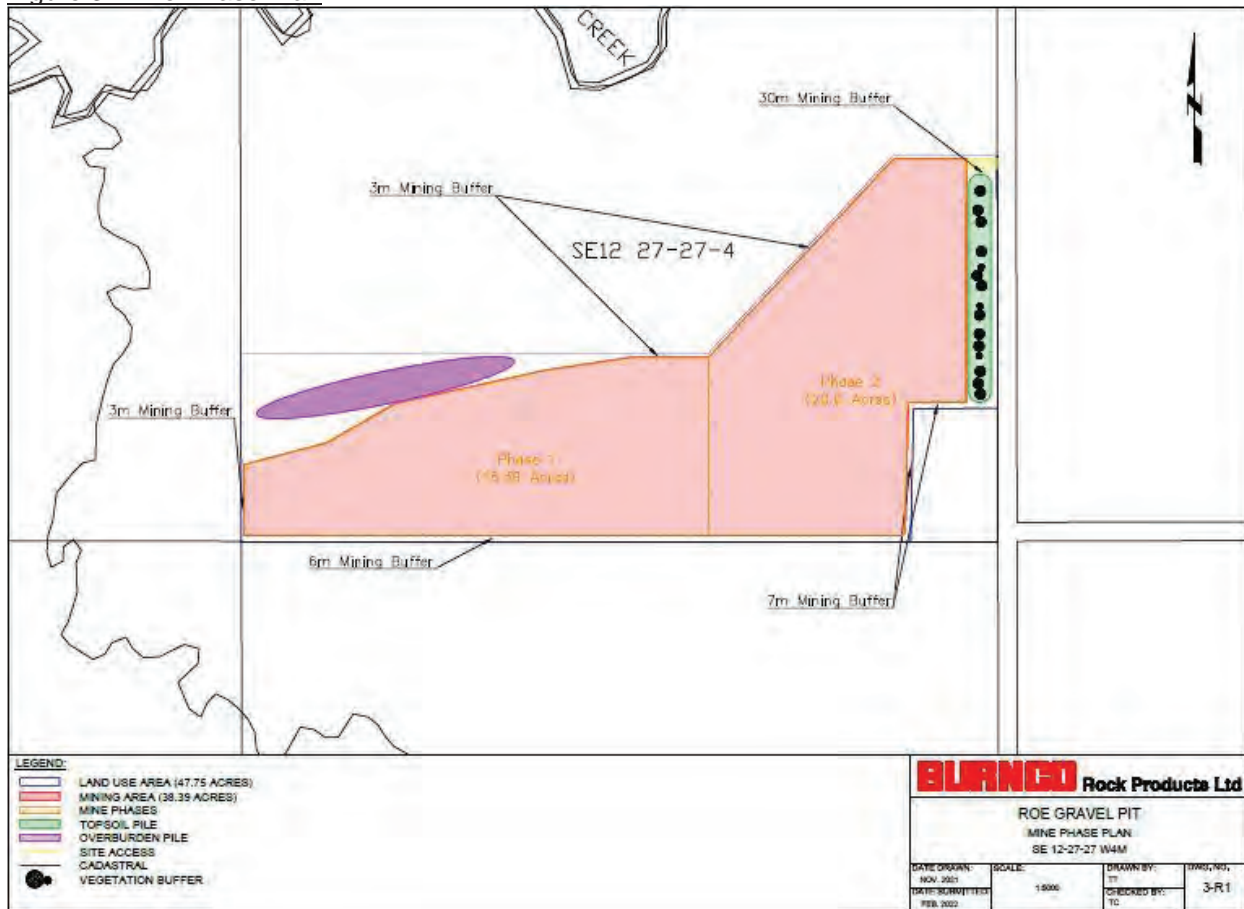
#### Phase 2:

- Screening berm to the north of the project will be further enhanced from soil stripped from mining phase 2,
- Grading of phase 1 slopes will be done by utilizing overburden stripped from mining phase 2,
- Haul route to remain unchanged (Range Road 270 to Township Road 270,
- Once aggregate extraction from mining phase 2 is complete, grading of the phase 2 slopes will be done by utilizing overburden and topsoil from the north screening berm,
- The screening berm along Range Road 270 will be left in place.

Roe Gravel Pit – Master Site Development Plan

**BURNCO**

Figure 3: Mine Phase Plan





Roe Gravel Pit – Master Site Development Plan

### 3.4 Site Securement, Signage, Buffers

Project lands will be secured on all property boundaries with farm fencing. All access points to the project lands such as farm approaches will be gated.

Upon issuance of a development permit for these lands, “Danger No Trespassing” signs will be posted every 200 meters along all property boundaries to inform the general public about the presence of open excavations and provide basic site information.



The primary access point to the project will have lockable steel gates comprised of two 16-foot gates hung on large steel corner posts. Signage will also be provided to identify the site and provide key information. Signs will be 4 feet by 8 feet and mounted on one or both sides of the approach.



There will be a minimum six-meter buffer to adjacent property boundaries and a minimum thirty-meter buffer to road allowances.

**Policy #10**

**BURNCO will install site signage. This will include perimeter signage to discourage trespassing as well as entrance signage as necessary to identify the site and provide key information to the public.**

**Policy #11**

**Site signage shall include a 24-hour phone number for neighbors to call in the event of questions or concerns.**

### **3.5 Noise Assessment and Control**

BURNCO intends to minimize the noise of the operation through the following measures:

- The loader back-up alarm systems will be maintained at the minimum dBA levels allowable under Alberta Occupational Health and Safety guidelines. When the equipment is operating during darkness, the noise alarm system is turned off and a strobe light warning system is turned on as an alternative to the warning sounds,
- Access roads will be graded and regularly maintained to reduce traffic noise,
- Use of engine retarder brakes will not be allowed when trucks are in the operational area,
- Strategically place product piles to shield the neighboring areas from the operating equipment,
- Construction of screening berms in strategic locations as detailed in Section 3.14.

BURNCO is also committed to monitoring the site as necessary to ensure noise does not become an adverse effect for the area. As required, BURNCO will utilize enhanced mitigation measures. Such enhanced mitigations include:

- Additional noise control,
- Reducing site activities during periods of excessive noise.

With these options in place, BURNCO is confident that noise will not become a nuisance as a result of this development.

**Policy #12**

**BURNCO will follow the noise control measures detailed in the MSDP. In addition, BURNCO will utilize enhanced mitigation measures if necessary, to ensure that noise is reasonably controlled and does not become a nuisance.**

**Policy #13**

**BURNCO will not submit a Noise Impact Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**



### 3.6 Air Quality Assessment and Control

BURNCO has implemented the following measures to reduce dust generated from the operations:

- A 30km/hour speed limit is enforced in the stockpile area,
- A water truck will be available to water the extraction area as a means of reducing dust,
- During overburden stripping operations, the dust will be controlled by watering the work area as needed,
- All soil stockpiles will be seeded as soon as possible following construction,
- The disturbance associated with the excavation area will be kept to a minimum by progressively reclaiming mined out cuts thereby reducing the amount of wind-borne dust generated from exposed areas.

BURNCO is also committed to monitoring the site as necessary to ensure air for the area is not adversely affected. As required to meet Alberta ambient air quality objectives, BURNCO will utilize enhanced mitigation measures.

Such enhanced mitigations include:

- Additional dust control (sprinklers, more frequent water truck use, and dust suppressants),
- Reducing site activities during periods of poor air quality,
- Additional vegetation planting around receptors.

With these enhanced mitigation options in place, BURNCO is confident that this development can be successfully operated to ensure compliance with Alberta ambient air quality objectives.

#### **Policy #14**

**BURNCO will follow the dust control measures detailed in the MSDP. In addition, BURNCO will utilize enhanced mitigation measure if necessary, to ensure that dust is reasonably controlled and does not become a nuisance.**

#### **Policy #15**

**Operations at the pit will be compliant with the Alberta Ambient Air Quality Objectives (AAAQO).**

#### **Policy #16**

**BURNCO will not submit an Air Quality Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

### 3.7 Annual Reporting Requirements

BURNCO will submit an Annual Report to Rocky View County, which will include all pertinent operation details, no later than six months after each operating year. The following information will be included:

- A current site plan showing extraction activity,
- Reclamation Activities,
- Methods BURNCO has employed to address any complaints/incidents from adjacent properties and/or the Community.

**Policy #17**

**BURNCO will provide an Annual Report to Rocky View County in accordance with Development Permit requirements. BURNCO will not include reporting related to groundwater elevations, unless required under a Water Act Approval issued by AEP.**

### 3.8 Environmental Monitoring & Complaint Resolution

Not including the landowner of the proposed development, the nearest occupied residence is 1,600m from the property. Both BURNCO's Irricana pits and Aecon's Senger pit are much closer to nearest occupied residence. As such, no permanent monitoring stations for either noise, dust, or other emissions are envisioned for the site at this time. Instead, monitoring will be conducted on an as-required basis.

At all times, the following protocol shall be employed in the case of noise or dust complaints received by BURNCO from nearby residents:

- BURNCO will investigate the complaint,
- BURNCO will make reasonable steps to address the complaint if it is determined that the site is the source of the complaint,
- In all instances, BURNCO will respond to the complainant within 24 hrs. This response will include the results of BURNCO's investigation, and any actions taken. This response will be provided in writing.

**Policy #18**

**BURNCO will follow the complaint response protocol provided in the MSDP related to noise and dust complaints.**

### 3.9 Dewatering and Surface Water Management

Site testing has determined that 100% of the remaining gravel deposit lies within the groundwater table.

Excavation of sand and gravel located below the water table will be accomplished by bailing. This will involve an excavator dredging up sand and gravel from the applicable excavation area on site. These materials will then be transported by truck to BURNCO's existing site, located in Sec 06-27-27 W4M.

A Water Act application will be submitted to AEP for the disturbance of an aquifer. This disturbance is related to the excavation of sand and gravel from an unconfined groundwater aquifer.

Should any nearby water well users indicate to BURNCO that they believe their water supply has been negatively impacted due to the gravel mining operation, BURNCO will do the following:

- Provide a temporary alternate water supply within 24 hours if a resident is without water,
- Hire an outside consultant within 14 days to determine the cause of the problem,
- Provide a permanent alternate water supply if the problem is at least partially due to BURNCO's mining operation.

**Policy #19**

**BURNCO will follow the complaint protocol provided in the MSDP related to groundwater security.**

### 3.10 Traffic Safety and Monitoring

BURNCO expects to utilizing Range Road 270 to Township Road 270 to access BURNCO's existing Irricana site. This access will be utilized for all activities of the development. This includes phases 1 and 2, which can be found in Appendix 2: Drawing No. 3.

#### **Policy #20**

**BURNCO will enter into a Road Use Agreement with Rocky View County to utilize Range Road 270 and Township Road 270, for access to BURNCO's existing Irricana site as a Development Permit condition.**

#### **Policy #21**

**BURNCO will complete a Traffic Impact Assessment (TIA) as a Development Permit condition.**

#### 3.10.2 Haul Safety

All drivers are required to follow the BURNCO trucking policy to ensure BURNCO safety standards as well as the public's expectations are met. Drivers must always practice responsible driving habits and maintain a good driving record. As with all BURNCO operations, company employees and independent truckers involved in the hauling of aggregate must meet three criteria:

- Safety – only the highest standard of safety is appropriate to safeguard the public, the driver's peers and the driver,
- Legality – all federal, provincial and municipal laws and regulations must be followed as well as BURNCO's own regulations,
- Efficiency – the least time-consuming, safe and legal haul route must be taken.

Each spring, independent truckers wishing to work for BURNCO must register themselves and their vehicles by providing, among other things, proof of proper insurance, registration, vehicle safety inspection, and coverage by the Workers Compensation Board.

BURNCO is also prepared to implement mitigation activities to ensure the safe hauling of aggregate. These mitigation activities will be determined by the TIA and could include:

- Appropriate traffic signage to ensure vehicle traffic kept to a safe speed,
- Widening of Range Road 270 at specific locations to ensure a safe distance is maintained between oncoming traffic,
- Placement of suitable gravel and frequent grading to ensure the integrity of the road is maintained,
- Utilization of a Traffic Control Person to ensure no disruptions to public traffic.
- Dust control as per Section 3.6.

#### **Policy #22**

**BURNCO will enter into a Development Agreement with Rocky View County for any necessary offsite improvements as determined by the TIA and Rocky View County. Such improvements will not include the upgrade of Range Road 270 to a paved standard.**

**Policy #23**

**BURNCO will follow the protocol provided in the MSDP related to haul safety.**

### 3.10.3 Haul Monitoring

BURNCO participates in the Alberta Sand and Gravel Association (ASGA) truck registry program to help monitor trucks. The registry works in the following manner:

- The truck registry requires all gravel truck operators to display a four-digit number, and the phone number 1-866-901-ASGA (2742),
- If someone feels the truck is not operating in a safe and courteous manner, they can phone the complaint line and register a complaint,
- All complaints received via this number are documented and relayed to the producer (i.e. BURNCO) the truck is registered with.

The producer then follows up on the complaint to ensure it is resolved. With the truck registry, BURNCO is informed of any problems that are occurring on the haul route and can resolve them promptly.

**Policy #24**

**BURNCO will follow the protocol provided in the MSDP related to haul monitoring.**

### 3.11 Hazardous Waste Plan

All fuel storage sites will be constructed in a manner that follows the *Guidelines for Secondary Containment for Above Ground Storage Tanks*, Alberta Environmental Protection, May 1997, and comply with Part 4 of the *Alberta Fire Code 2006* for tank registrations. A bermed imperviously lined area, or other form of secondary containment, will surround fuel tanks with a minimum 110% holding capacity of the largest tank's capacity.

Any spills within or beyond the bermed area of the above ground storage tanks will be controlled immediately using various techniques including diking and containing. Any spills will be collected using sorbent pads and vacuum trucks.

Materials such as oil, lubricants, glycols, etc. that are stored on-site will be labeled according to the Workplace Hazardous Materials Information System (WHIMIS) regulations and will be suitably contained. No waste material will be imported into the pit. All waste material generated from pit operations will be collected and stored in approved containers. This waste material will then be hauled on a regular basis to an approved landfill for proper disposal. Burial of waste will be prohibited during all phases of the operation. Portable sanitary facilities will be located on site. All sanitary waste will be hauled to an approved waste management treatment facility.

**Policy #25**

**BURNCO will follow the hazardous waste plan in the MSDP.**

### 3.12 Landscaping and Site Screening

To enhance the appearance of the facility and reduce the impact on neighboring tenants, BURNCO has developed a planting and maintenance plan for a visual screen adjacent to the proposed gravel pit. Rocky View County advises that screening be considered for certain development activities to manage the aesthetics of the landscape.

As described in the Section 3.3, the site will be developed based on milestones related to the progress of the mining areas. Construction of the screening berms will also be built in phases and will be done so in accordance with the following:

#### Phase 1:

- Screening berm to the east of the proposed development will be developed using stripped topsoil and subsoils,
- Vegetation planting on this section of berm will be completed after the berm has been constructed,
- Overburden will be utilized to develop an additional screening berm to the north of the proposed development.

#### Phase 2:

- Screening berm to the north of the project will be further enhanced from soil stripped from mining phase 2,
- Grading of phase 1 slopes will be done by utilizing overburden stripped from mining phase 2,
- Once aggregate extraction from mining phase 2 is complete, grading of the phase 2 slopes will be done by utilizing overburden and topsoil from the north screening berm,
- The screening berm along Range Road 270 will be left in place.

The topsoil and subsoil berm that has been vegetated along Rand Road 270 will be left as permanent feature on the property.

#### **Policy #26**

**BURNCO will not submit a landscaping plan as prepared by a qualified landscape architect, as part of this MSDP or as part of any future DP application.**

### 3.13 Erosion and Sediment Control

BURNCO will conduct erosion and sediment control (ESC) inspections of the site monthly from April to November. Additional inspections will be conducted after heavy or prolonged precipitation events ( $\geq 12$  mm of rainfall over a 24 hours). During winter months, ESC inspections will be conducted only after a heavy snowmelt. The inspections will be completed to assess the performance of the control measures and to identify any additional measures required to accommodate the anticipated and observed conditions on-site.

Permanent controls will include the following:

- Stormwater will be controlled to ensure minimal release from the site such that stormwater does not create any adverse effect,
- Disturbance areas will be minimized as much as possible,
- Clear delineation of disturbance areas to minimize disturbance of vegetation and soils,

- ESC measures to prevent mobilization of sediment from stripped areas to adjacent drainage channels or beyond the limits of the work area.

As applicable, ESC measures will include:

- Topsoil and subsoil piles will be seeded to establish vegetation and reduce the potential for erosion. Short-term stabilization could also include fiber mulch, straw shredding/crimping and or compost/manure,
- Sediment fence barriers,
- Fiber rolls / Wattles,
- Slope texturing / Track walking,
- Rolled erosion control products,
- Synthetic permeable ditch barriers,
- Rock check dams.

**Policy #27**

**BURNCO will not submit a ESC plan as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

## 4.0 Reclamation Plan

BURNCO always strives to promptly reclaim their operations back to an equivalent land capability and to re-establish a similar grade and drainage patterns that existed prior to disturbance. The site will be predominantly reclaimed back to agricultural use as shown in the reclamation drawings provided in Appendix 2.

**Policy #28**

**BURNCO will submit a reclamation plan with each development permit application.**

**Policy #29**

**Reclamation will be completed in accordance with Part 5 of the Code of Practice for pits which sets requirements regarding the conservation of soil and subsoil and the characteristics of reclamation.**

**Policy #30**

**BURNCO will reclaim areas progressively and in accordance with the reclamation contours and cross-sections in the MSDP.**

## 4.1 Landscaping and Closure

As described in Section 3.3 and 3.11, the screening berm built between the proposed development and Township Road 270 will be left as a permanent reclamation feature. This screening berm will have mature landscaping at the time of final reclamation. The contouring associated with this permanent feature is shown on the reclamation plan in Appendix 2: Drawing No. 6.



## 4.2 Soil Salvage

All topsoil and subsoil on site will be salvaged and used in the final reclamation. Topsoil and subsoil salvage will not occur under wet, frozen, adverse field conditions or high wind velocities that will result in mixing, loss, compaction or degradation of soil. Topsoil and subsoil will be salvaged a minimum of three meters ahead of pit faces.

Topsoil and subsoil will be directly placed into areas of reclamation.

### Policy #31

**BURNCO will ensure proper soil salvage and will follow the protocols provided in the MSDP related to soil salvage.**

## 4.3 Subgrade

Placement of fill and rough grading will follow the contour plan shown in Appendix 2: Drawing No. 6. Once subgrades are established, areas will be ripped and cross ripped to a depth of 0.3 meters to ensure decompaction of the subgrade. Ripping can help improve soil conditions by breaking up the surface of the overburden, increasing infiltration of surface water, and creating a better root zone.

## 4.4 Soils Placement

Once subgrades are established and decompacted, subsoil and topsoil will be spread evenly. Target replacement depths will be based on parcel and will be 85% of the pre-disturbance soils depths as detailed in Section 2.1 of this report.

## 4.5 Vegetation

Once topsoil has been evenly placed, the reclaimed areas will be re-vegetated to pasture using drill seeding at a rate no less than 22 kg/acre. Grass seed mixture will be 30% wheatgrass, 40% smooth brome, 30% Kentucky bluegrass. Once seeding is complete, a program of cutting and fertilizing will take place as necessary to ensure the pasture becomes established.

### Policy #32

**BURNCO will control weeds during operations and reclamation. These efforts will be compliant with the Weed Control Act and the Rocky View County Land Use Bylaw.**

## 4.6 Inactive Pit Conservation & Reclamation Techniques

At all time, the pit will be clearly identified by signs that indicate danger and discourage trespassing. Slopes around structures and equipment will be stabilized and sloped no steeper than 3:1. During periods of inactivity of over six months, pit faces will be sloped no steeper than 2:1. Stockpiles will be vegetated, and the weeds will be sprayed and mowed. The site will be monitored to ensure soil reclamation material is stable, weeds are controlled, and the site is secure.

Once the above items have been completed, the site will be monitored on a monthly basis to ensure soil reclamation material is stable, weeds are controlled, and the site is secure.

**Policy #33**

**BURNCO will follow the protocols provided in the MSDP related to inactive pit conservation and reclamation.**

#### **4.7 Proposed Surface Water Bodies**

There will be one permanent water body in the final reclamation plan. The water body is planned to be 32.22 acres in size (See Appendix 2 Drawing No. 7 - Reclamation Plan). The shoreline will be constructed with a 5:1 slope above the average water level to one meter below the water table and will have a 3:1 slope at depths greater than one meter below the water level. This water body will provide water for livestock and will promote habitat for wildlife. A Water Act application will be submitted to AEP for the development of a permanent water body.

**Policy #34**

**BURNCO will secure a Water Act Approval for the authorization of an end pit lake as part of the reclamation plan.**

#### **5.0 Conclusion**

The BURNCO Irricana Pit has been in successful operation since the late 1980s. BURNCO would like to continue operating at this location and is seeking to permit this satellite site, which will allow for the continued operation of BURNCO's Irricana pit.

This project presents a great opportunity for Rocky View County and the people of Alberta in continuing to meet the growing demand for aggregates. These aggregates are critical in building our communities and maintaining our quality of life.

BURNCO is committed to the highest level of care and compliance in all our developments. It is BURNCO's belief that by following the Project Activities Plan for the lands associated with the proposed development, that BURNCO's Roe Pit can operate in a socially and environmentally responsible manner.

## Appendix 1: MSDP Policy Summary

### Policy #1

Upon successful MSDP adoption and re-designation of the project area, BURNCO will assume the Registration from AEP under the Code of Practice for Pits from Rocky View County.

### Policy #2

Before commencing operations, BURNCO will secure a Development Permit and will make the necessary amendments to the COP Registration to account for the updating mining plan on the site.

### Policy #3

BURNCO will ensure that stormwater from the active mining area is collected and not discharged from the site. BURNCO will not submit a conceptual or detailed Storm Water Management Plan, as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.

### Policy #4

BURNCO will secure a Water Act Approval to excavate aggregate from an unconfined groundwater aquifer prior to any site activity. BURNCO will follow all approval requirements as applicable. BURNCO will not submit a Hydrogeological Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.

### Policy #5

BURNCO will not submit a Biophysical Impact Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.

### Policy #6

BURNCO will secure a Water Act Approval for disturbance of wetlands, if applicable, prior to any site activity.

### Policy #7

BURNCO will follow all requirements in the Code of Practice for Pits (Section 5.2.5), which indicates that reclaimed sloping will be no steeper than 3:1. BURNCO will not submit a Geotechnical Assessment, as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.

### Policy #8

BURNCO will follow the hours of operation as determined by Rocky View County as part of the Development Permit process.

**Policy #9**

**BURNCO will follow the development phasing plan as illustrated in the MSDP.**

**Policy #10**

**BURNCO will install site signage. This will include perimeter signage to discourage trespassing as well as entrance signage as necessary to identify the site and provide key information to the public.**

**Policy #11**

**Site signage shall include a 24-hour phone number for neighbors to call in the event of questions or concerns.**

**Policy #12**

**BURNCO will follow the noise control measures detailed in the MSDP. In addition, BURNCO will utilize enhanced mitigation measures if necessary, to ensure that noise is reasonably controlled and does not become a nuisance.**

**Policy #13**

**BURNCO will not submit a Noise Impact Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

**Policy #14**

**BURNCO will follow the dust control measures detailed in the MSDP. In addition, BURNCO will utilize enhanced mitigation measure if necessary, to ensure that dust is reasonably controlled and does not become a nuisance.**

**Policy #15**

**Operations at the pit will be compliant with the Alberta Ambient Air Quality Objectives (AAAQO).**

**Policy #16**

**BURNCO will not submit an Air Quality Assessment as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

**Policy #17**

**BURNCO will provide an Annual Report to Rocky View County in accordance with Development Permit requirements. BURNCO will not include reporting related to groundwater elevations, unless required under a Water Act Approval issued by AEP.**

**Policy #18**

**BURNCO will follow the complaint response protocol provided in the MSDP related to noise and dust complaints.**

**Policy #19**

**BURNCO will follow the complaint protocol provided in the MSDP related to groundwater security.**

**Policy #20**

**BURNCO will enter into a Road Use Agreement with Rocky View County to utilize Range Road 270 and Township Road 270, for access to BURNCO's existing Irricana site as a Development Permit condition.**

**Policy #21**

**BURNCO will complete a Traffic Impact Assessment (TIA) as a Development Permit condition.**

**Policy #22**

**BURNCO will enter into a Development Agreement with Rocky View County for any necessary offsite improvements as determined by the TIA and Rocky View County. Such improvements will not include the upgrade of Range Road 270 to a paved standard.**

**Policy #23**

**BURNCO will follow the protocol provided in the MSDP related to haul safety.**

**Policy #24**

**BURNCO will follow the protocol provided in the MSDP related to haul monitoring.**

**Policy #25**

**BURNCO will follow the hazardous waste plan in the MSDP.**

**Policy #26**

**BURNCO will not submit a landscaping plan as prepared by a qualified landscape architect, as part of this MSDP or as part of any future DP application.**

**Policy #27**

**BURNCO will not submit a ESC plan as prepared by a qualified professional, as part of this MSDP or as part of any future DP application.**

**Policy #28**

**BURNCO will submit a reclamation plan with each development permit application.**

**Policy #29**

Reclamation will be completed in accordance with Part 5 of the Code of Practice for pits which sets requirements regarding the conservation of soil and subsoil and the characteristics of reclamation.

**Policy #30**

BURNCO will reclaim areas progressively and in accordance with the reclamation contours and cross-sections in the MSDP.

**Policy #31**

BURNCO will ensure proper soil salvage and will follow the protocols provided in the MSDP related to soil salvage.

**Policy #32**

BURNCO will control weeds during operations and reclamation. These efforts will be compliant with the Weed Control Act and the Rocky View County Land Use Bylaw.

**Policy #33**

BURNCO will follow the protocols provided in the MSDP related to inactive pit conservation and reclamation.

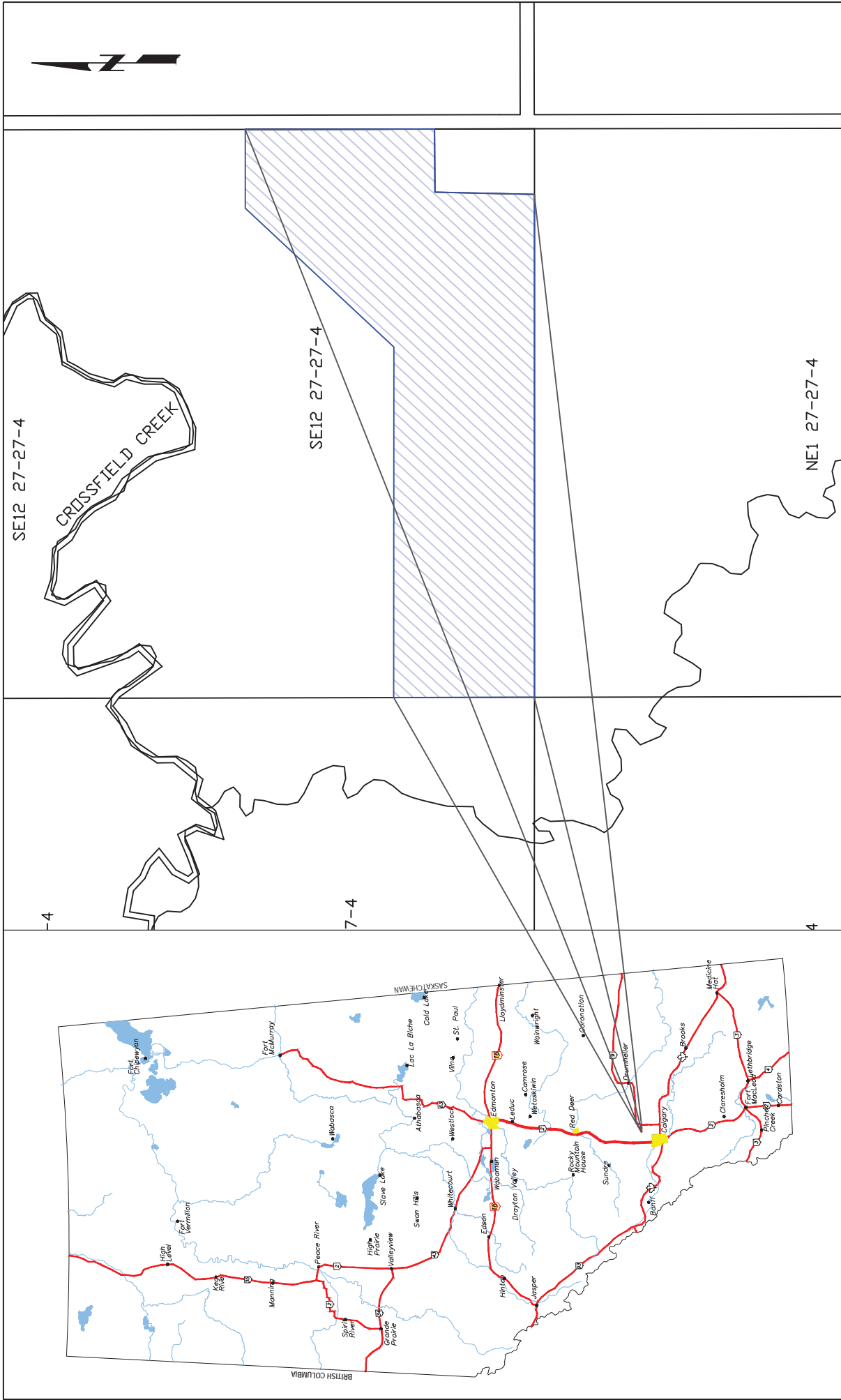
**Policy #34**


BURNCO will secure a Water Act Approval for the authorization of an end pit lake as part of the reclamation plan.





## Appendix 2: Drawings



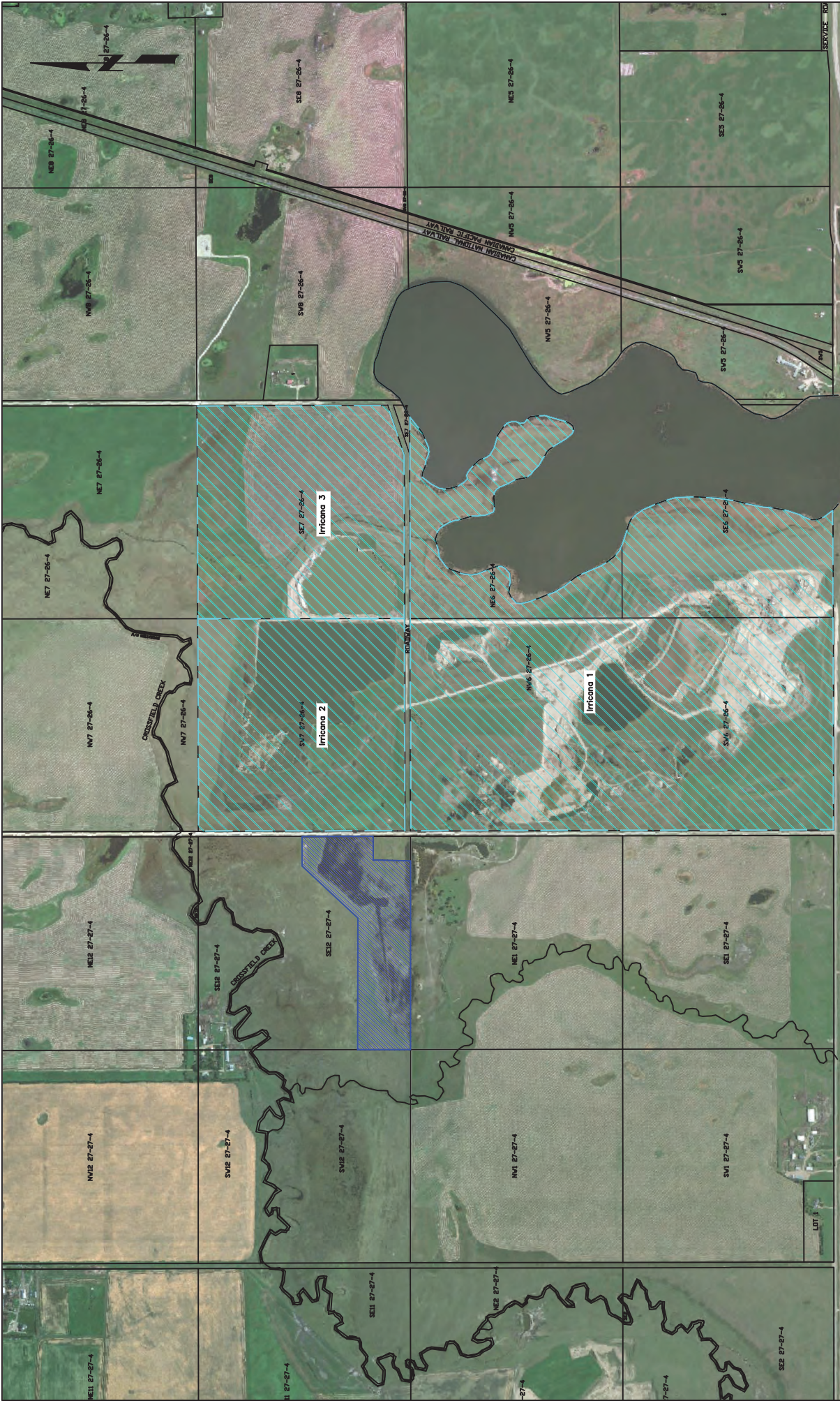
**LEGEND:**  
 LAND USE AREA (47.75 ACRES)

**BURNCO** Rock Products Ltd

ROE GRAVEL PIT  
LOCATION MAP  
SE 12-27-27 W4M

|                              |               |                   |                |
|------------------------------|---------------|-------------------|----------------|
| DATE DRAWN:<br>NOV. 2021     | SCALE:<br>NTS | DRAWN BY:<br>TT   | TOWG. NO.<br>1 |
| DATE SUBMITTED:<br>NOV. 2021 |               | CHECKED BY:<br>TC |                |





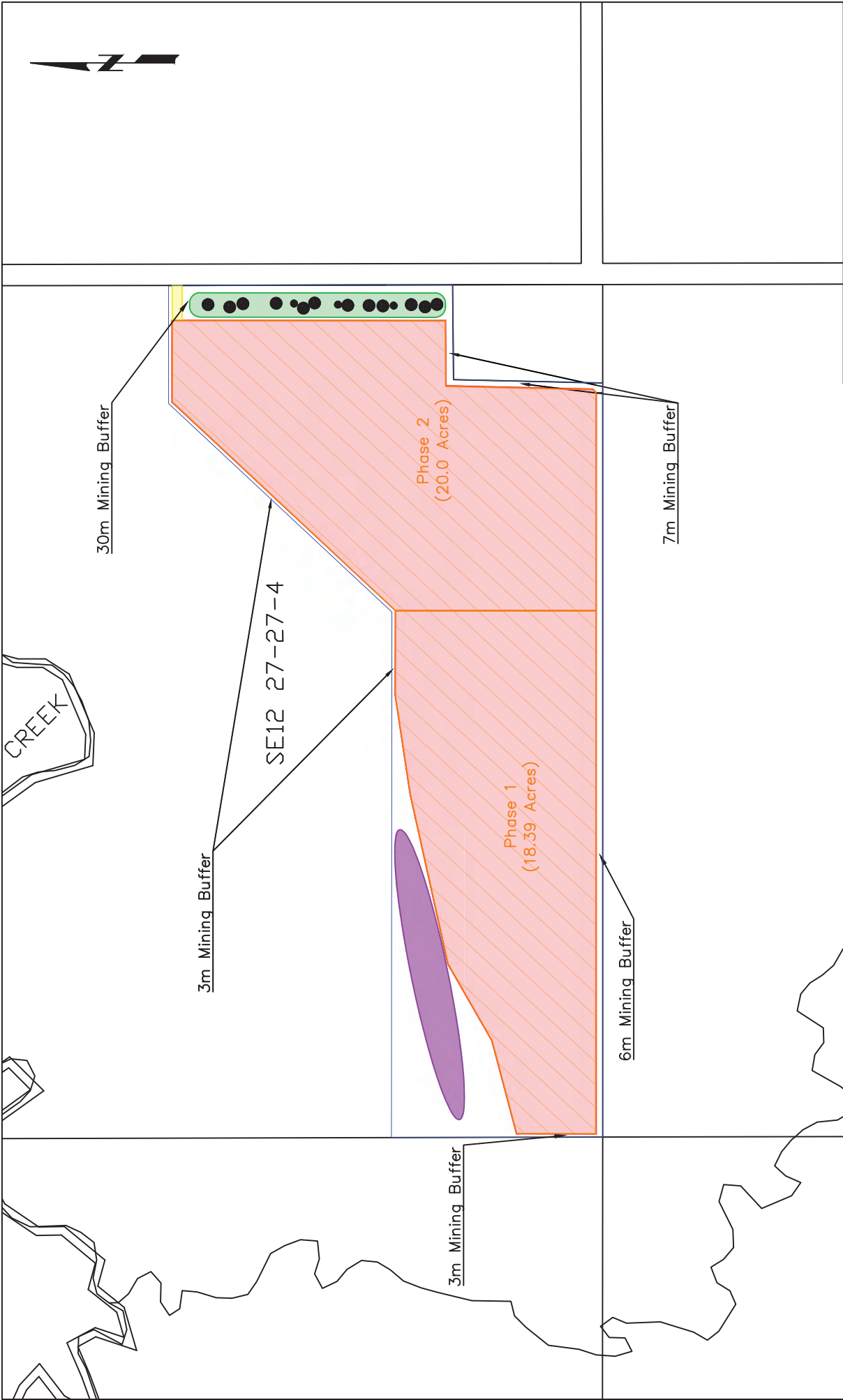
**BURNCO** Rock Products Ltd

ROE GRAVEL PIT  
LAND USE MAP  
SE 12-27-27 W4M

|                              |                    |                   |                   |
|------------------------------|--------------------|-------------------|-------------------|
| DATE DRAWN:<br>NOV. 2021     | SCALE:<br>1:20,000 | DRAWN BY:<br>TT   | TOWNSHIP NO.<br>2 |
| DATE SUBMITTED:<br>NOV. 2021 |                    | CHECKED BY:<br>TC |                   |

- LEGEND:
- LAND USE AREA (47.75 ACRES)
  - BURNCO - IRRICANA 1, 2 & 3





**LEGEND:**

- LAND USE AREA (47.75 ACRES)
- MINING AREA (38.39 ACRES)
- MINE PHASES
- TOPSOIL PILE
- OVERBURDEN PILE
- SITE ACCESS
- CADASTRAL
- VEGETATION BUFFER

**BURNCO** Rock Products Ltd

ROE GRAVEL PIT  
MINE PHASE PLAN  
SE 12-27-27 W4M

DATE DRAWN: NOV. 2021  
DATE SUBMITTED: FEB. 2022

SCALE: 1:5000

DRAWN BY: TT  
CHECKED BY: TC

TOWG. NO. 3-R



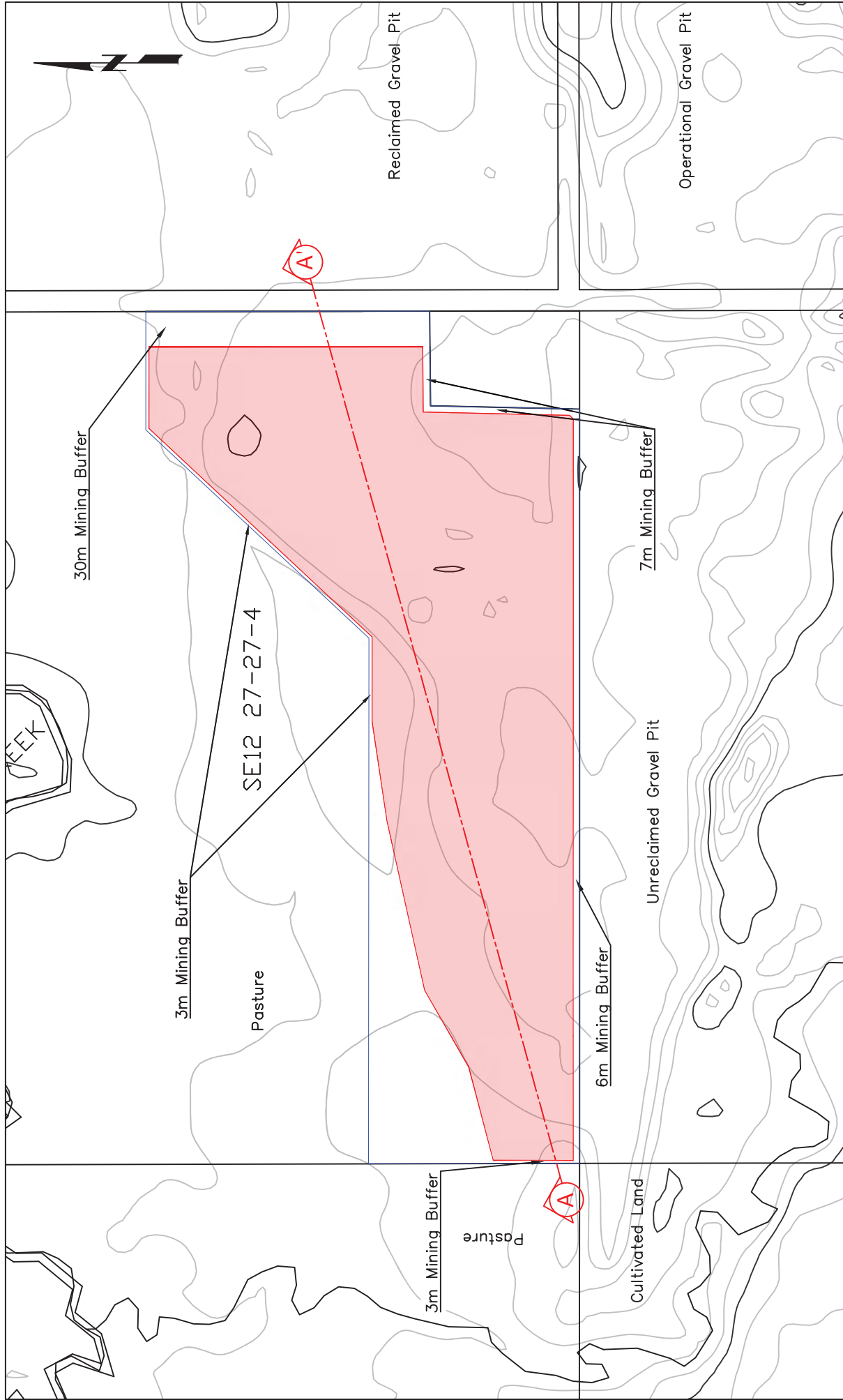
**LEGEND:**


- LAND USE AREA (47.75 ACRES)
- MINING AREA (38.39 ACRES)
- CADASTRAL
- CROSS SECTION

**BURNCO** Rock Products Ltd

ROE GRAVEL PIT  
SITE MAP  
SE 12-27-27 W4M

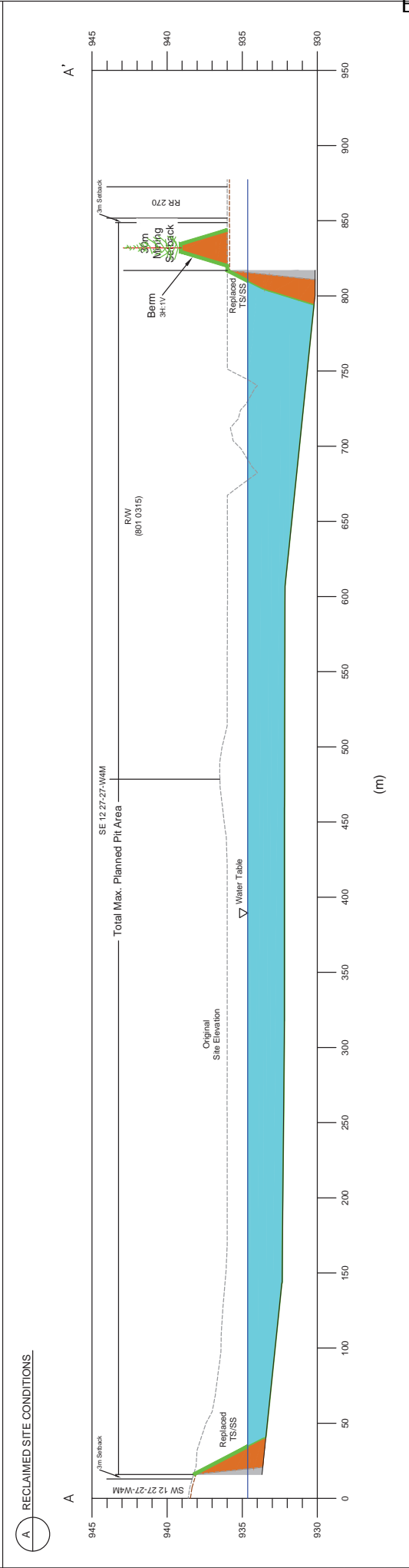
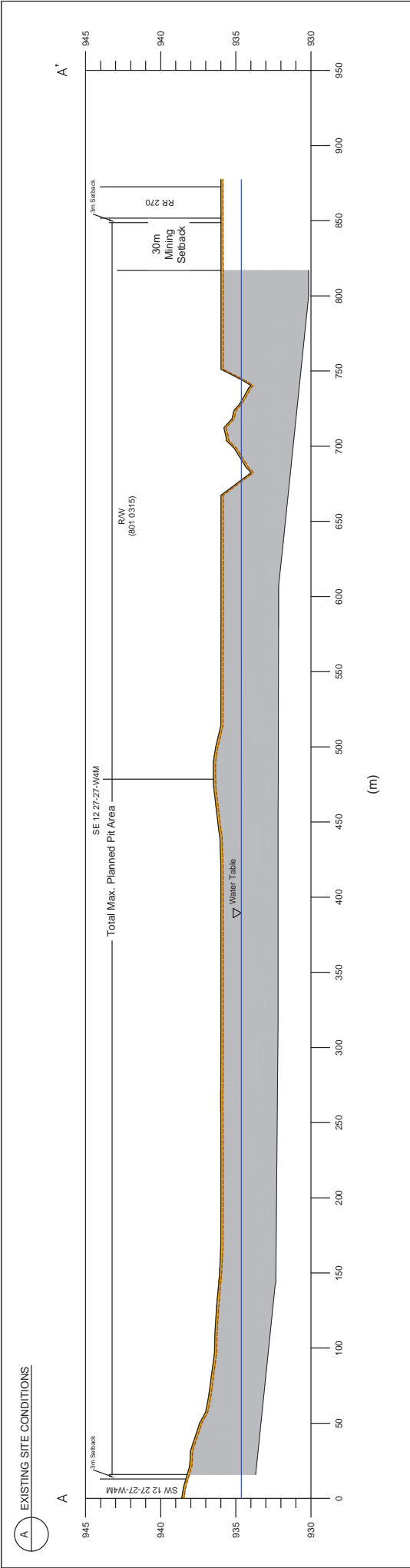
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| DATE SUBMITTED:<br>NOV. 2021 |                  | CHECKED BY:<br>TC |                |



|  |  |
|--|--|
| <p>LEGEND:</p> <p>LAND USE AREA (47.75 ACRES)</p> <p>MINING AREA (38.39 ACRES)</p> <p>CADASTRAL</p> <p>CROSS SECTION</p> |  |
|--|--|



ATTACHMENT 'D': Roe Gravel Pit Master Site Development Plan



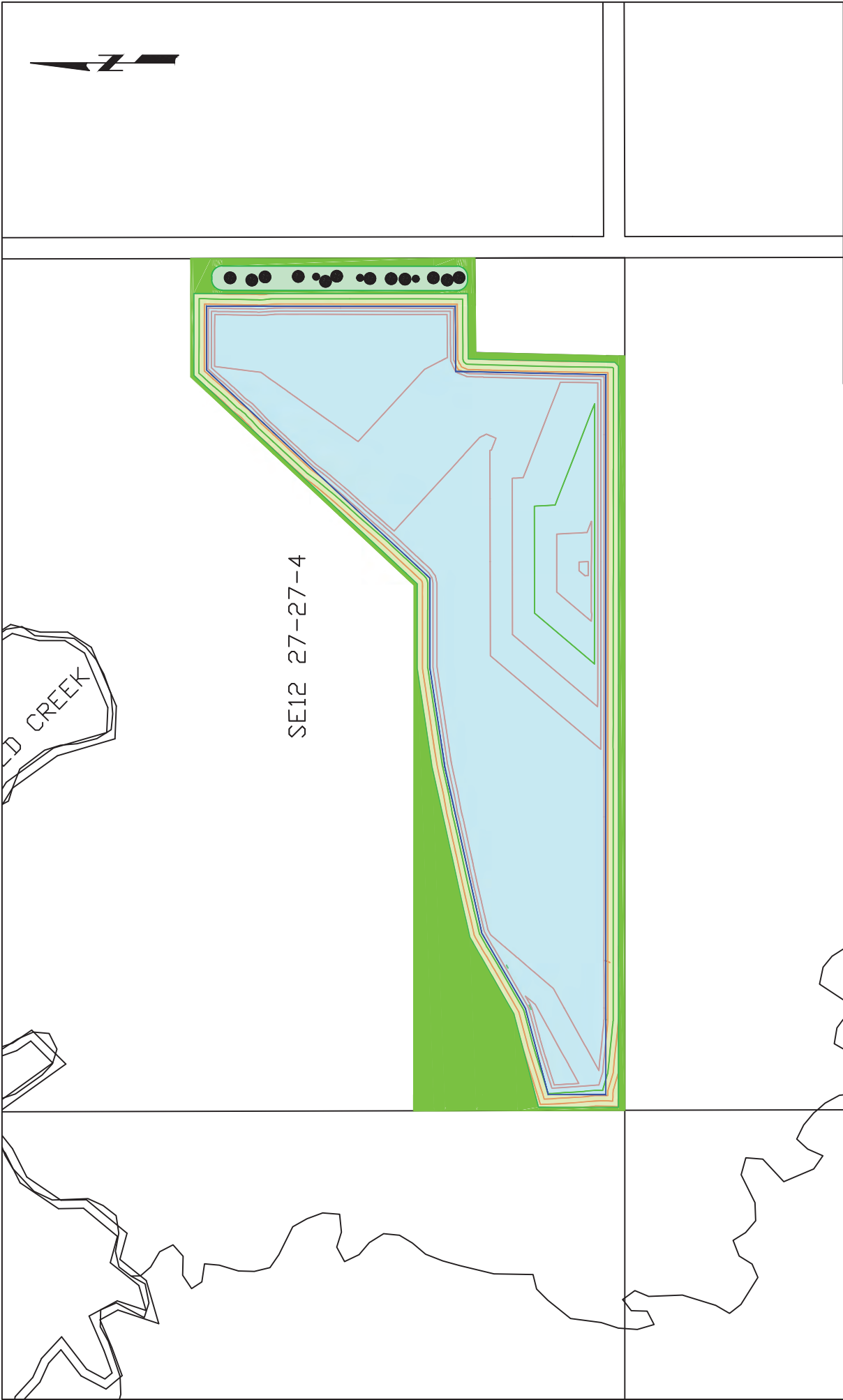
**NOTES:**

- Gravel will be mined at 1H:1V.
- Lake shore will be backfilled and reclaimed to 5H:1V 1 meter below the water table and then it will be graded to 3H:1V for the rest of the depth of the lake.
- Topsoil and subsoil will be replaced at  $\pm 10\text{cm}$  and  $\pm 11\text{cm}$  respectively.

**BURINCO** Rock Products Ltd

ROE GRAVEL PIT  
CROSS SECTION A-A'  
SE 12-27-27 W4M

| DATE DRAWN:     | SCALE: | DRAWN BY: | CHECKED BY: |
|-----------------|--------|-----------|-------------|
| DEC 2021        | 1:2500 | ML        | 11          |
| DATE SUBMITTED: |        |           |             |
| DEC 2021        |        |           |             |



LEGEND:

- END PIT LAKE (32.22 ACRES)
- LAKE SHORE (12 METER HORIZONTAL DISTANCE)
- 1M CONTOURS
- 5M CONTOURS
- CADASTRAL
- LANDSCAPE BERM
- PASTURE
- VEGETATION BUFFER

**BURNCO** Rock Products Ltd

ROE GRAVEL PIT  
RECLAMATION PLAN  
SE 12-27-27 W4M

|                              |                  |                   |                |
|------------------------------|------------------|-------------------|----------------|
| DATE DRAWN:<br>DEC. 2021     | SCALE:<br>1:5000 | DRAWN BY:<br>ML   | TOWG. NO.<br>7 |
| DATE SUBMITTED:<br>DEC. 2021 |                  | CHECKED BY:<br>TC |                |