

RID#29

PROJECT DESCRIPTION
WHITES POINT QUARRY & MARINE TERMINAL
DIGBY COUNTY, NOVA SCOTIA

submitted by

Global Quarry Products

March 2003

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Global Quarry Products

March 10, 2003

Derek McDonald P. Eng.
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Canadian Environmental Assessment Agency
1801 Hollis Street, Suite 200
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RE: Whites Point Quarry & Marine Terminal – Project Description

Further to our submission of a Draft Project Description on January 21, 2003 and your consolidated comments of February 17, 2003, we are submitting herewith a Project Description for the referenced project.

If you have any questions, please call.

Yours truly

Paul Buxton
Project Manager

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Whites Point Quarry & Marine Terminal

1. General Information

General

The project is a proposed basalt quarry with a marine terminal located on Digby Neck in Digby County, Nova Scotia. The name of the project is the Whites Point Quarry and is located as shown on Maps 1, 2, 3.

This project description has been distributed to the Nova Scotia Department of Environment and Labour, Environment Assessment Branch.

Consultations have been on going with representatives of the Nova Scotia Department of Environment and Labour including an initial meeting on June 14, 2002. A meeting with representatives of Fisheries and Oceans Canada – Habitat Management Division and Navigable Waters Protection was held on July 25, 2002. A meeting with various federal representatives including the Canadian Environmental Assessment Agency, Environment Canada, Navigable Waters Protection, Fisheries and Oceans Canada, and the Nova Scotia Department of Environment and Labour was held on January 6, 2003. A presentation to the Digby Municipal Council, the formation of a Community Liaison Committee, and preparation of a newsletter for distribution to households in the local area has been accomplished to date. Contacts with aboriginal groups are pending.

An environmental assessment is presently underway to be included with the “ registration of undertaking” for the Nova Scotia Department of Environment and Labour and the Canadian Environmental Assessment Agency.

Contacts

The name of the proponent is Global Quarry Products, the operating arm of Nova Stone Exporters Inc. No federal government departments or agencies are involved with the project as co-proponents. The contact person for Global Quarry Products is:

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Federal Involvement

No federal government department or agency is providing financial support to the White's Point Quarry and marine terminal project. The land to be used for the project is in private ownership and no federal land is involved with the project, with the exception of the required water lot to the marine terminal.

Authorizations Required

A federal permit under the Navigable Waters Protection Act will be required for the Marine Terminal. No storage or manufacture of hazardous materials is proposed on-site. Permits from the Nova Scotia Department of Environment and Labour will be required. Municipal zoning is presently not in place for Digby County.

2. Project Information

Project Components / Structures

The main components of the project include the physical plant for construction aggregate processing and a marine terminal for ship loading of the aggregate.

Land based permanent structures would include rock crushers, screens, closed circuit wash facilities, conveyors, load out tunnel, support structures (shop, office, fuel tanks) and environmental control structures.

Marine facilities would include a conveyor, ship loader, berthing dolphins and mooring buoys.

Associated construction processes would include erection of on land aggregate processing equipment, conveyors and wash water pumping systems.

Environmental control processes would include drainage channels, sediment retention ponds and land restoration.

Construction processes for the marine terminal infrastructure would include the anchoring of pile support structures to the basalt rock extending off shore and the construction of concrete caps as dolphins.

Conceptual layouts of the land and water based infrastructure is shown on Figure 1.

Conceptual plan and elevation of the marine terminal is shown on Drawing 1 and 2.

Concrete and steel fabrication would be typical construction materials used.

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Quarry equipment would include heavy mobile gear such as loaders, trucks, bulldozers, excavators, etc. and permanent rock processing equipment such as crushers, screens and conveyor systems.

The quarry property comprises approximately 380 acres. Land based infrastructure would occupy approximately 27 acres while marine based infrastructure would occupy approximately 10 acres. Quarrying could potentially take place on 300 acres. Quarry production would be approximately 2 million tons of processed aggregate per year. Approximately 10 acres of new quarry would be opened each year with restoration of previously quarried areas every five years.

The life of the quarry is projected to be 50 years.

Project Activities

Land based and marine based construction is expected to take one year and take place simultaneously. Quarry operation is expected to extend over 50 years and decommissioning to take one year. Site restoration will be continuous throughout the 50 - year life of the project.

The land based quarry operations are expected to be year round with aggregate stockpiled for ship loading once per week. Approximately [REDACTED] would be produced for loading each week. Ship loading is expected to take 10 hours into ships similar to the CSL Spirit with a length of approximately 625 feet.

The conceptual plan of the land based and water based infrastructure is shown on Figure 1.

Conceptual engineering for the marine terminal is shown on Drawing 1 and 2.

As indicated on Figure 1, a 20- meter high working quarry face is envisioned.

A section of the final land configuration is shown on Figure2.

The drainage channels and sediment retention pond structures shown on Figure 1 are typical of the environmental controls to be employed for subsequent phases of quarrying over the life of the project.

No requirements for off-site land or water use are proposed at this time.

Resource / Material Requirements

Drilling and blasting of basalt rock, loading, hauling, crushing, screening, washing and stockpiling of rock aggregate will be done on-site.

The explosives to be used will be Bulk Emulsion called Dyno Gold Lite 70/30.

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No factory license will be required since the product will be trucked from an existing factory site.

No permission will be required for Ammonium Nitrate Fuel Oil since it will not be used on the site.

No explosives will be stored on site.

All explosives loading, hauling, handling and blasting will be contracted to a certified third party.

Stockpiled aggregate materials will be transported by conveyor systems to the ship loader and loaded into the holds of the vessel.

Raw materials for project operations would include electrical energy, fuel and water.

All water requirements would be derived from on-site sources and primarily from recycled surface water.

Fuel, primarily diesel, would be stored on-site in above ground, double walled tanks with safety alarm systems.

Nova Scotia Power Corporation would be the provider of electrical power.

Access to the quarry site is via White's Cove Road, an unimproved public road, from Highway 217 to the property.

No pipelines to the site are proposed.

As mentioned previously, on-site excavation will involve approximately 2 million tons of basalt rock per year, which will then be transported by water to markets. The quantity of "fill" removed over the life of the project could reach 100 million tons.

Explosives will be used during quarry operations with blasting approximately once every two weeks when the quarry is in full production.

Processed aggregates will be washed before shipment using a closed wash water circuit.

No radio transmission stations or significant antenna structures are proposed on the quarry site.

Waste Disposal

No solid, liquid or gaseous wastes except emissions from fuel consumption are expected from quarry operations.

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All fuel consuming machinery will meet the latest emission control standards.

No toxic / hazardous materials will remain and require disposal.

Explosives will be consumed during blasting, however, all surface water run-off from the site will be monitored for any possible residual products from the blasting.

The proposed marine terminal is located on exposed basalt bedrock. No dredging or filling in the marine environment is anticipated during the construction process.

The proposed construction method for the marine terminal is to drill sockets and anchor pipe piles to the bedrock. No pushing of material to one side (e.g. side casting or trenching) or relocating rocks or debris is anticipated during the construction process.

On land blasting will be conducted as part of the land based quarry operation. Separation distances between blast sites and the marine environment will be maintained in accordance with the Department of Fisheries and Oceans – “Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters”. All blasting rock material will be recovered for further processing. All blasts will be designed by a qualified blaster to ensure “fly rock” will not enter the marine environment.

3. Project Site Information

Project Location

The location of the project is shown on the property Map 1.

PID number of the property is 30161160.

The location of the project is 44 degrees 27' 47" N, 66 degrees 08' 31" E as shown on Map 2.

A topographic Map 3 and aerial photo of the property are included.

The site layout of the main quarry components including quarry infrastructure and marine terminal is shown on Figure 1.

Environmental Features

The White's Point Quarry site is composed of the Jurassic North Mountain Basalt. These basalts are typical of the on-shore geology and continue seaward into the Bay of Fundy. North Mountain Basalt is present along the Bay of Fundy from Brier Island to Cape Blomidon, a distance of over 200 km. The North Mountain Basalt is a ground-water aquifer in the Digby Neck area. The Quaternary age glacial deposit overburden along Digby Neck is mapped as the Basalt Till Facies of the Beaver River Till Unit. This till is

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generally thin and mantled over the bedrock and may overlie older till deposits in some areas. Rossway soils cover the entire quarry site and are generally stony and well drained. In Digby County, these soils are chiefly forested.

The exiting topography of the proposed quarry site is steeply sloping toward the Bay of Fundy. Relief at the highest point is over 90 meters. Extreme gradients range up to 50% slope with more common slopes in the range of 10 % to 20 %. Several areas such as those along the shoreline, the abandoned pit and the southeast ridge of the site are relatively flat.

Surface water runoff from the majority of the site flows toward the Bay of Fundy except for an approximate 10- hectare area at the southeast corner that drains toward Saint Mary's Bay.

Ground water flows generally follow the same pattern as surface waters.

Several small, intermittent, irregularly defined watercourses, typical of the North Mountain are evident flowing down the mountainside and dispersing into the Bay.

Forest and the habitats they provide are typical of the area and of coastal forests of the North Mountain Basalt Ridge Natural Landscape extending from Cape Blomidon to Brier Island. The property is almost entirely forested, dominated by coniferous species, with the exception of two coastal barrens south of White's Cove and a seasonal bog north of the Cove.

A significant proportion of the coniferous species, (particularly white spruce), is diseased, dead or dying. Approximately sixty acres of forest on the site was recently clear-cut, primarily on top of the ridge along the east property line. Infestation of spruce, primarily white spruce, by the spruce bark beetle has prompted clear cutting of significant acreage of softwood on near by areas of Digby Neck.

Wildlife consists of common bird species and animals such as deer, coyote, mink, rabbits, etc. No faunal species at risk are expected to inhabit the upland areas of the property. No wetland or other sensitive wildlife habitats are known to exist on the property.

A few intermittent watercourses flow down the mountainside into the Bay of Fundy.

Also, a coastal bog exists where one of the watercourses enters the Bay. These watercourses, due to their intermittent flow are not suitable or are marginal as fish habitat.

The intertidal zone is comprised mainly of bedrock outcrops with a cobble zone at White's Cove. Most of the mid and lower intertidal zone bedrock is covered with a thick mat of rockweed. Periwinkles, blue mussels, hermit crabs, dog welks and green crabs inhabit the areas of the intertidal zone. The bottom composition of the sub-tidal and near-

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shore waters is primarily bedrock and supports lobster, starfish, sea urchins, sea cucumbers and various fish including herring.

The nearshore fish habitat in the area of the proposed marine terminal consists of exposed basalt bedrock in the bottom area below chart datum. The bottom habitat above chart datum in the lower tidal zone is also basalt bedrock with a thick mat of rockweed. Water depths below chart datum, average high water mark, and highest high water marks are shown on Drawings 1 & 2 attached.

The overall dimensions of the marine terminal are shown on Preliminary Concept Drawings 1 & 2 (attached). Pending more detailed engineering and design, 36" diameter steel pipe piles are proposed in the water depths shown on the Drawings. Assuming 3 36" diameter piles per support structure, 133 square feet of bottom will be affected. However, vertical surface habitat area in the under water column will be created. The total vertical surface area available for marine organisms will be greater than the bottom habitat directly affected. Thus, no net loss of marine habitat is anticipated.

The duration of construction for the marine terminal is expected to be one year, depending on weather conditions. Construction materials will consist of steel pipe piles drilled and anchored to the basalt bedrock, and concrete pile caps for the berthing dolphins. The ship loader will be constructed of steel with a similar pipe pile and concrete foundation system. The conveyor system from shore will also be supported in a similar manner. Floating construction platforms are proposed to avoid disturbance to the nearshore and intertidal habitats. No dredging or filling is anticipated during the construction process.

Existing tidal and nearshore currents will experience negligible flow alteration as a result of the proposed pipe pile construction technique within the water column.

Surface water runoff from the quarry operations will be channeled into sediment retention pond/ponds. Discharges at the sediment retention pond overflow will be monitored on a weekly basis for pH and Total Suspended Solids and on a monthly basis for general chemistry parameters including nitrates. Discharges will be maintained in accordance with the Nova Scotia Department of Environment and Labour criteria with monthly summary reports furnished to the Department. Surface runoff water collected in the sediment retention ponds will be clarified, and recycled in a closed system for aggregate washing. The quantity of quarry site surface water being discharged into the receiving waters of the Bay is expected to remain the same as presently discharged.

Water quality in the intertidal and nearshore areas during construction will experience negligible alteration since no appreciable bottom sediments are present in the marine terminal construction area. Socket drilling for the pipe piles will be in bedrock within the pipe casing. This drilling process will produce basalt aggregate size material with little or no fines. Anchor drilling for the pipe piles will be done within the pipe casing also and any fines resulting will be confined within the casing and removed with no discharge into the marine environment.

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A review of the effects of blasting on the tidal and nearshore marine environment is ongoing. A Blasting Plan was prepared and submitted to the Department of Fisheries and Oceans for the approved four- hectare quarry site located within the proposed Whites Point Quarry. This plan is currently under review by DFO – HMD. A primary objective of the four- hectare quarry Blasting Plan is to gather specific on-site data for further assessment of potential impact on the marine environment from blasting operations. This data from the four-hectare quarry would then be used during the environmental assessment process for the Whites Point Quarry. In any event, separation distances between blast sites and the marine environment will be maintained in accordance with the Department of Fisheries and Oceans – “Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters”.

Harbour seals also frequent the near-shore waters as well as Common Eiders, Scoters, Gulls and Double-crested Cormorants.

Whales, porpoises, dolphins and seals frequent the Bay of Fundy .

The construction of the marine terminal is expected to affect intertidal and near-shore fish habitat and navigable waters. The marine environment along the property consists of approximately 1.9 miles of the Bay of Fundy coast and near-shore waters. Development of the marine terminal infrastructure will affect an area of approximately 10 acres of the intertidal and near-shore marine environment. Physical effects on the bottom habitat will be minimal and no net loss of habitat is expected. Typical species of marine fish and mammals were previously mentioned as well as the general habitat character. Construction of the marine terminal will extend approximately 600 feet from the shore and provide berthing depth of 15 meters below chart datum.

Typical photos of the site are attached.

Land Use

Presently the property is partially forested as a result of some recent clear cutting. This type of land use is typical of the surrounding lands as well. Historic land use has included a haul-up / skid-way at White’s Cove, fish shacks / camps and an abandoned gravel pit. No significant development exists in the watershed of the property and it is unlikely contamination from present or past land uses would have occurred. Traditional aboriginal use is not apparent on or adjacent to the property. The closest Indian reserve is in Bear River about 60 km away.

No national parks, designated heritage sites, historic canals, sensitive or protected areas are located adjacent to the property.

The property is in the vicinity of the community of Little River and is primarily rural, residential.

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The property is within 800 meters of some residential structures.

Use of Waterway

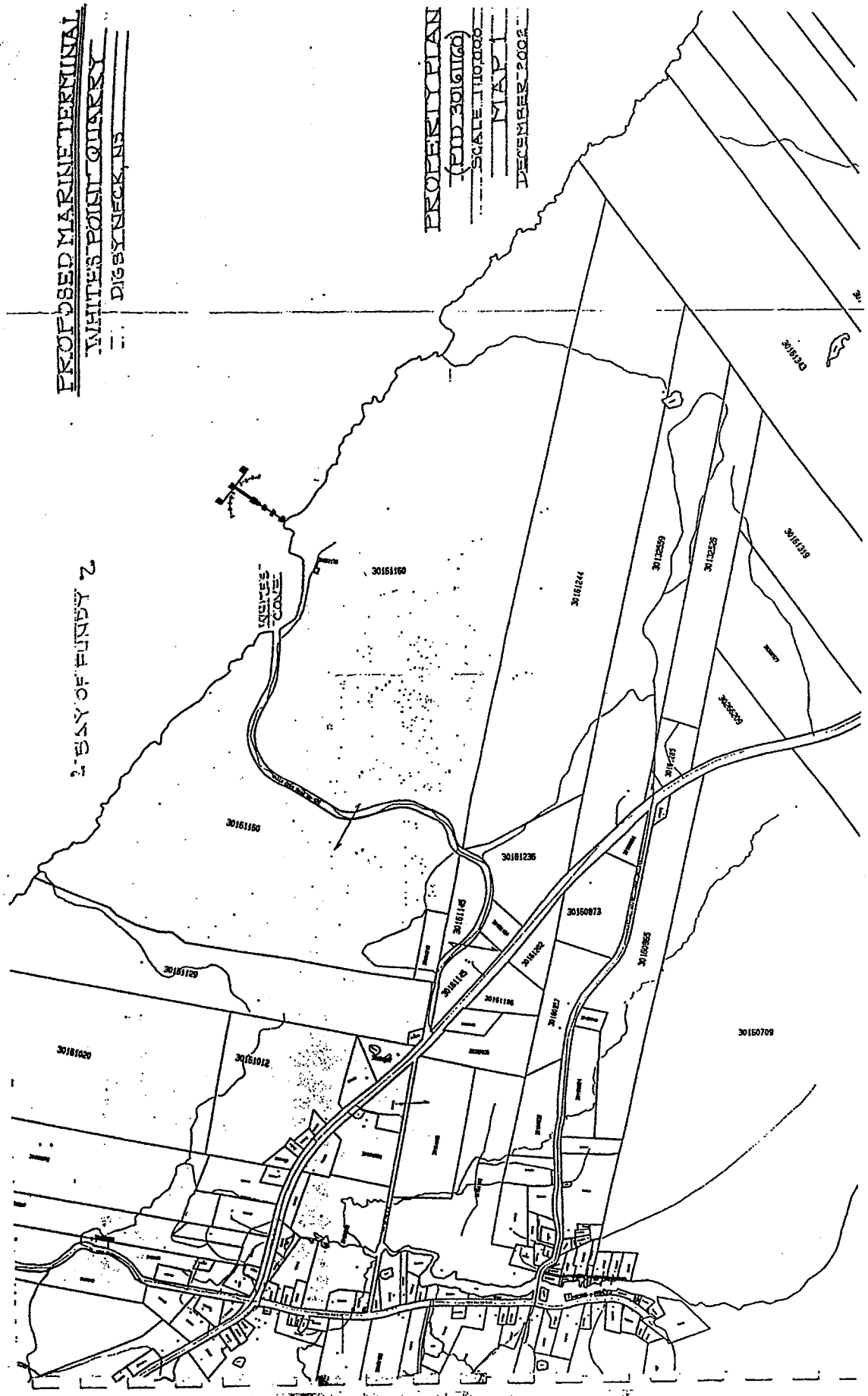
This near-shore portion of the Bay of Fundy is used primarily by lobster, herring and sea cucumber fishers. During the six month lobster fishing season, lobster boats can frequent the near-shore waters on a daily basis. Other fishing vessels, whale watching vessels and bulk container vessels use the offshore waters. No obstructions are known to occur in this area of the Bay. Several local lobster and herring fishers use the near-shore waters. Local onshore harvesting of periwinkles is also done.

No recreational or aboriginal / subsistence fisheries are known to exist in the water area proposed for the marine terminal.

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PROPOSED MARINETERRINAL
WHITES POINT QUARRY
DIGGINGS NECK, NS

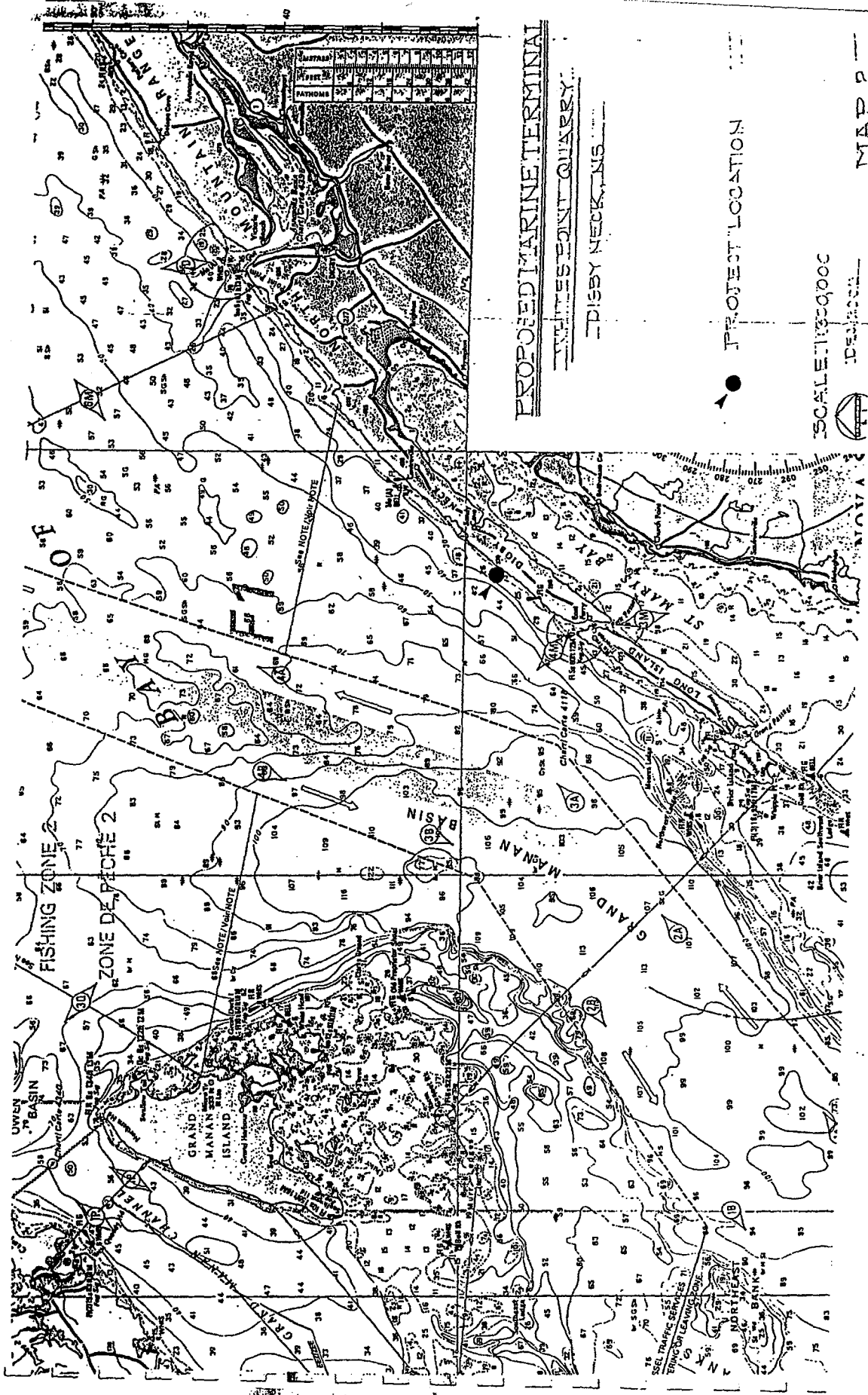
PROFESSIONAL
(PID 3016160)
SCALE 1:10000
MAP
DECEMBER 2002



BAY OF FUNDY 2

WHITES POINT QUARRY

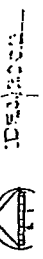
001044



PROPOSED MARINE TERMINAL
 WHITE SAND QUARRY
 PISBY NECKS

PROJECT LOCATION

SCALE 1:50,000



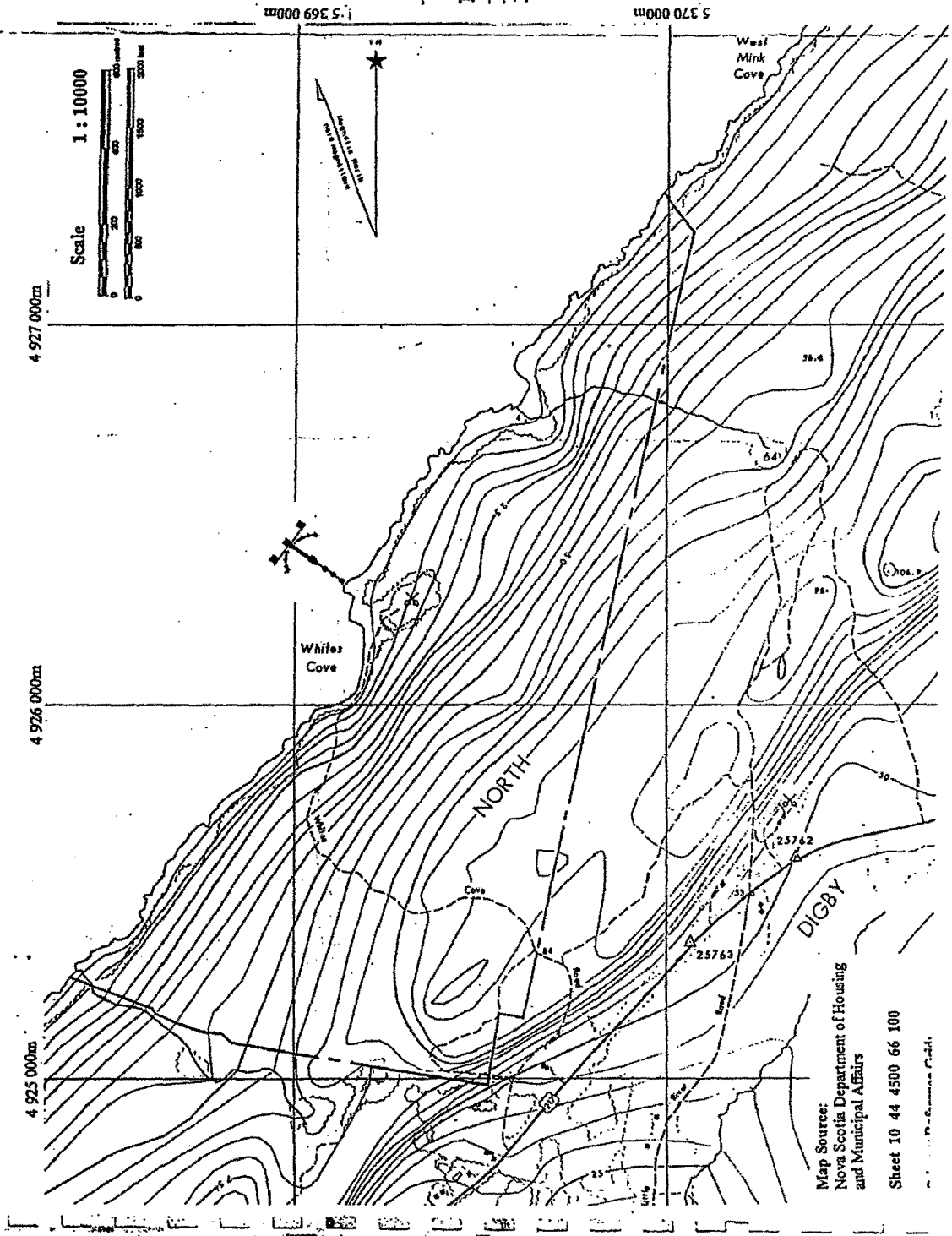
MAP 2

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CROSSBERRY MARINE TERMINAL
WHITESFOUNTAIN QUARRY
DIGBY NECK, N.S.

FLOTTIE PLAN
... DEC. 200

MAP 3



Map Source:
Nova Scotia Department of Housing
and Municipal Affairs
Sheet 10 44 4500 66 100

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LEGEND
 A BENCHMARK #1, ELEV. 9.3
 33 2785 N 66 0816 W
 D #1, D#2, D#3 BERTHING DOLPHIN

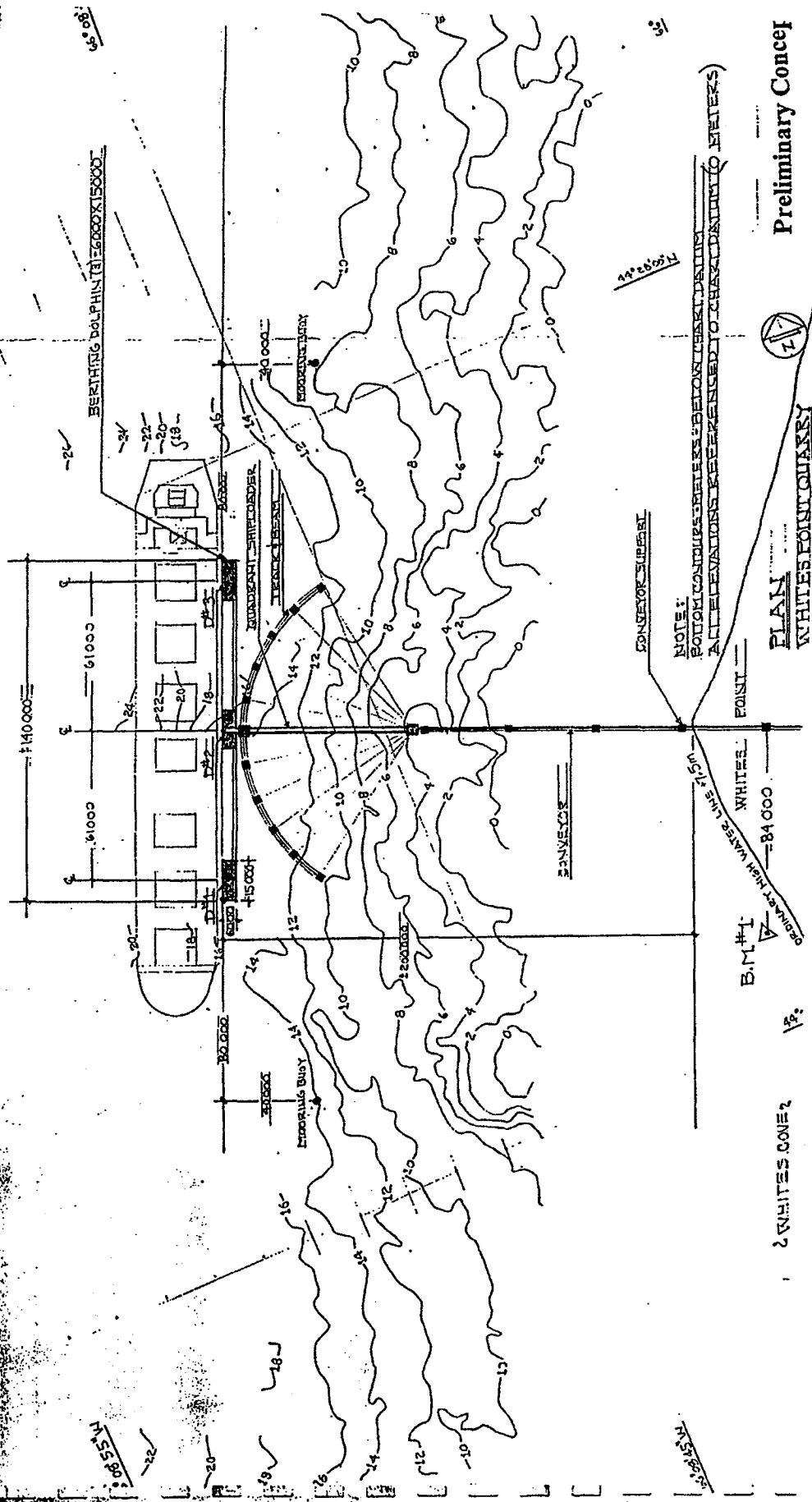
44° 28' 00" N

2 BAY OF FUNDY 2

23
26

44° 27' 50" N

44° 25' 50" N



44° 28' 00" N

CONCRETE SUPER

NOTE:
 POINTS AND ELEVATIONS REFERENCED TO CHADWICK (10 METERS)

POINT

WHITES

84000

B.M. #1

2 WHITES COVE 2

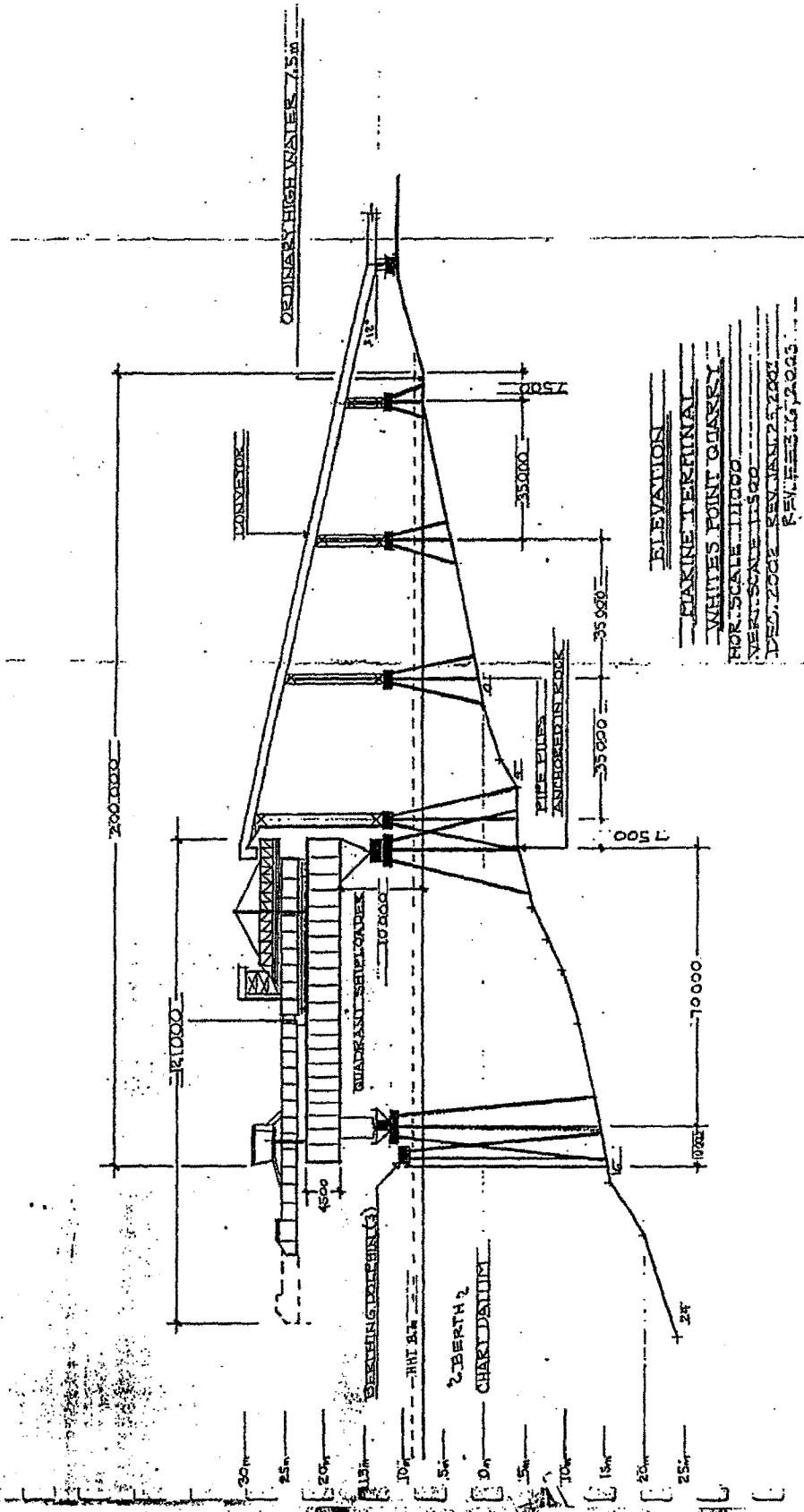
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PLAN
 WHITES POINT QUARRY

Preliminary Concept

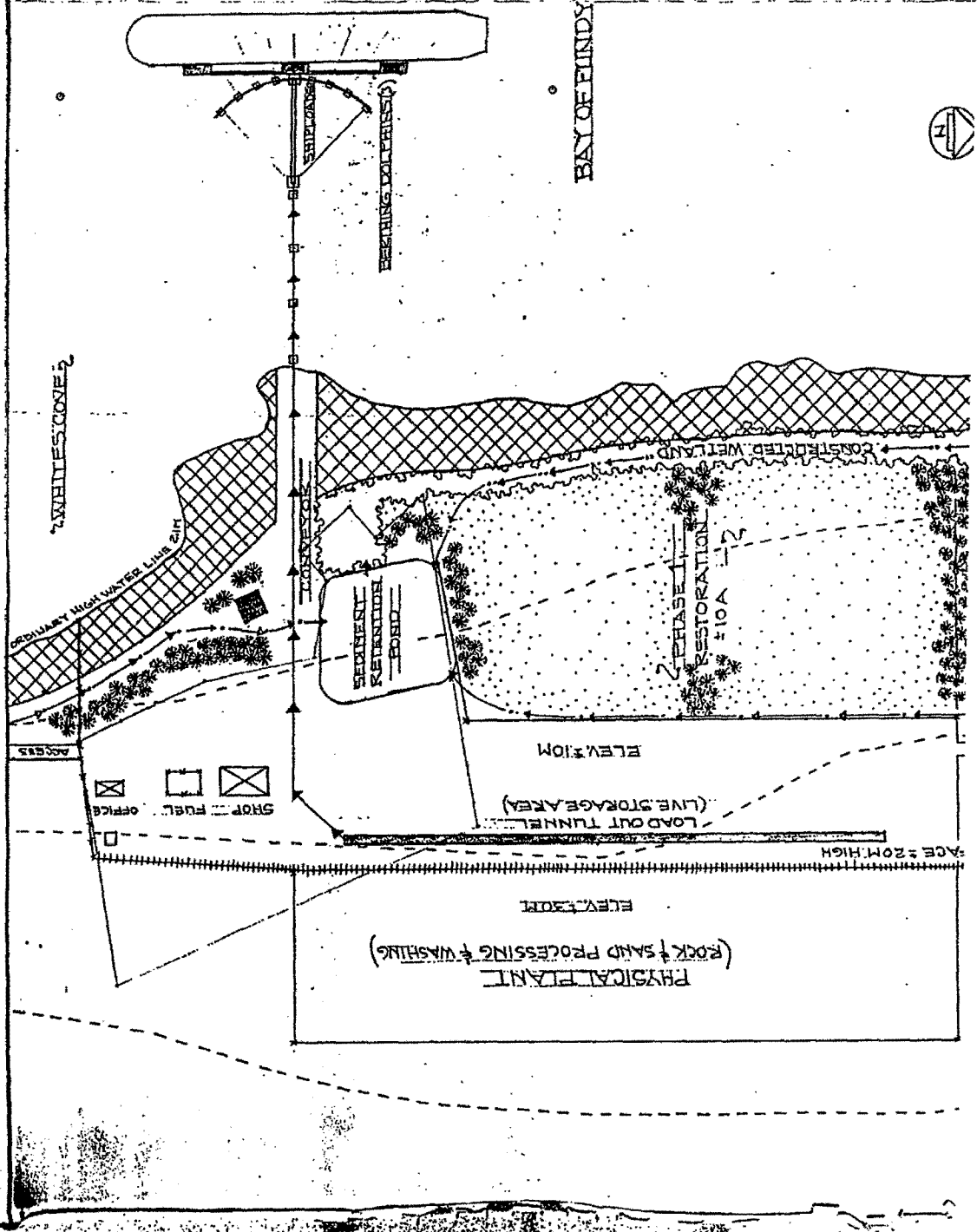
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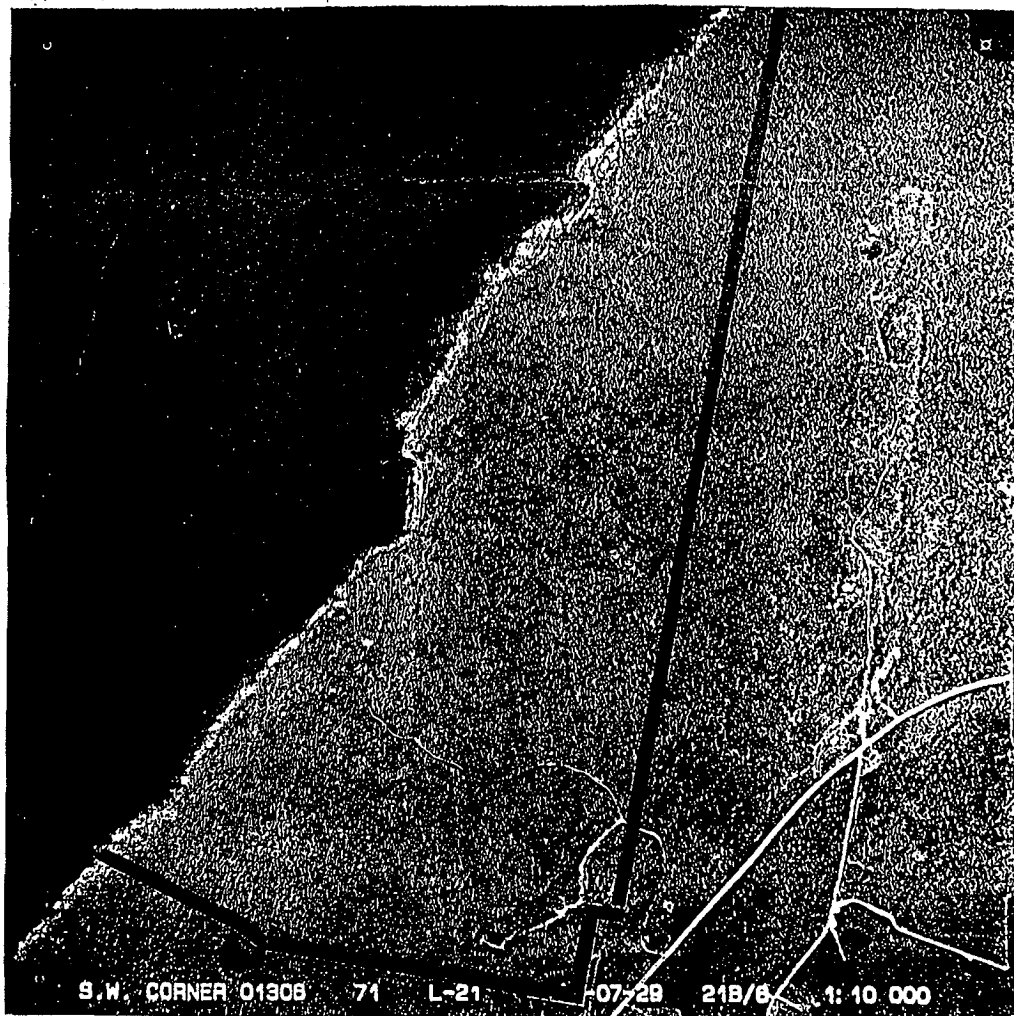
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- LEGEND**
- XXX ENVIRONMENTAL
 - PRESERVATION ZONE
 - EXIST. POSITION LINE
 - PERMANENT DRAINAGE
 - CHANNEL
 - TEMPORARY DRAINAGE
 - CHANNEL
 - CONSTRUCTED WETLAND
 - REFORESTATION
 - WILDLIFE PLANTINGS
 - GRASS LEGUMES
 - EXIST. 2 HECTARE QUARRY
 - PRIVATE LAND

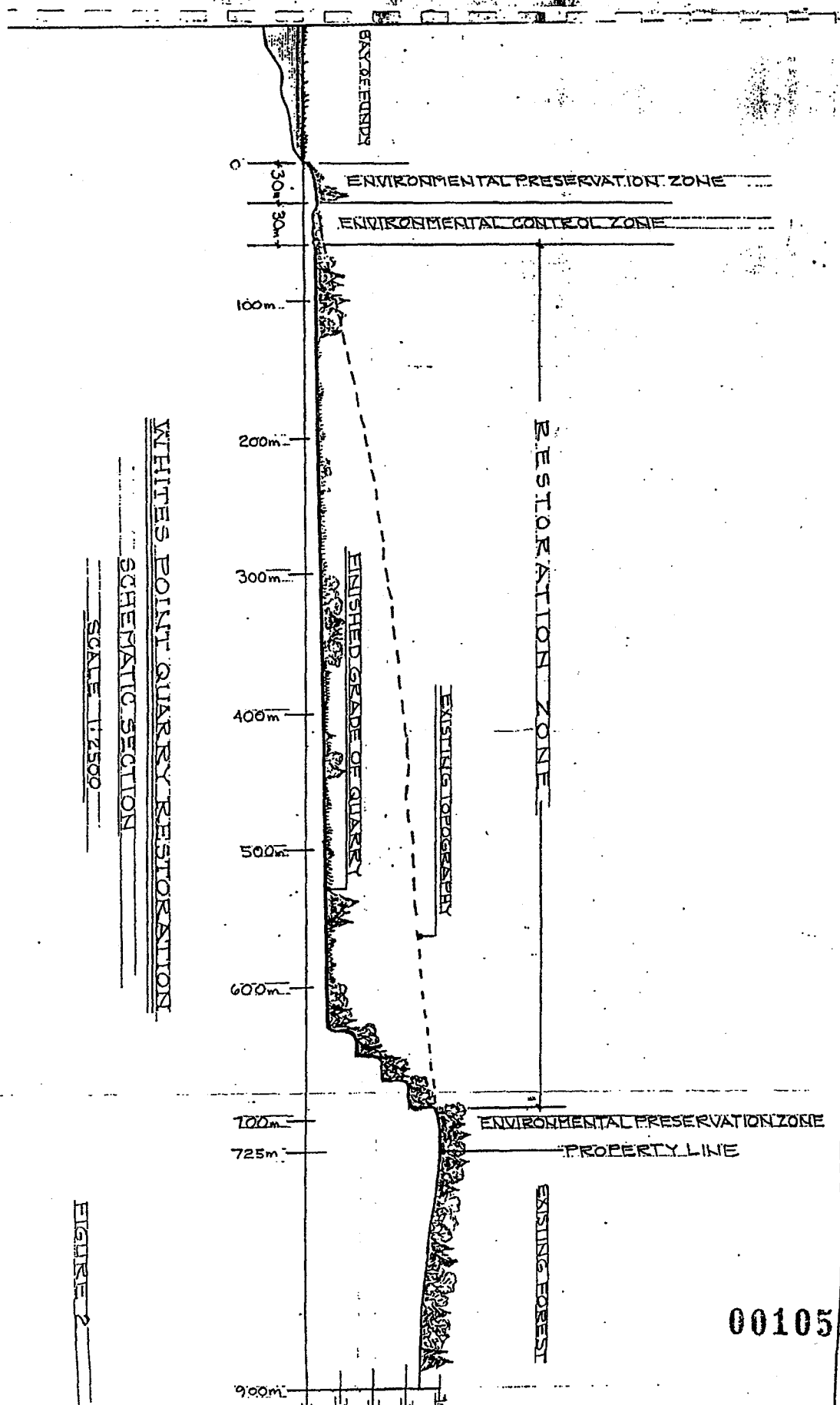
WHITES POINT QUARRY
QUARRY RESTORATION
PLAN
 SCALE 1:2



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WHITES POINT QUARRY RESTORATION
SCHEMATIC SECTION
SCALE 1:2500

FIGURE 2

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